Essex County Council

A12 Chelmsford to A120 Widening Project

Local Impact Report

13 February 2023

Chapters

Key acronyms and abbreviations

ComMA	Combined Modelling and Appraisal report
DCO	Development Consent Order
EA	Environmental Assessment
ECC 'the council'	Essex County Council
LIR	Local Impact Report
LLFA	Lead Local Flood Authority
LTP	Local Transport Plan
NH	National Highways
NPSNN	National Policy Statement for National Networks
NSIP	Nationally Significant Infrastructure Project
PPA	Planning Performance Agreement
PV	Photovoltaics
REAC	Register of Environmental Actions and Committments
SRN	Strategic Road Network
TA	Transport Assessment

0. Executive summary

0.1.1. Essex County Council (ECC) is a host authority for the A12 widening project which is being promoted by National Highways (NH). This Local Impact Report sets out ECC's view of the impacts of the scheme on Essex and some of the changes that we think are required to the scheme to minimise and mitigate adverse effects and in some cases to take advantage of opportunities presented by the scheme. Of particular interest to the council in our role as local highway authority is the interaction with and impacts on the local highway network.

0.1.2. The A12 is a major trunk road which connects East Anglia with Greater London. As such it is an important economic link and is of critical economic and social importance to the wellbeing of the towns, cities and communities it serves. There is general agreement that the A12 is a difficult road, and while a number of localised improvements have been made to the road over the years these have been piecemeal in nature and the stretch between Hatfield Peverel and Marks Tey is in particular need of strategic improvement.

0.1.3. For this reason, the council supports the principle of the A12 widening scheme and is actively engaging with NH on the project. The scheme involves widening of the approximately 15 mile stretch between Junction 19 and Junction 25 to three lanes in each direction, as well as a rationalisation of and changes to each of the junctions. There is a lot about the scheme to be commended. It is expected to bring considerable benefits to users of the A12 in terms of congestion relief, more reliable journeys and improved road safety.

Policy context

0.1.4. The key national policy document against which this scheme should be assessed is the National Policy Statement for National Networks (NPSNN). The NPSNN vision for national networks includes the delivery of environmental goals, the move to a low carbon economy and networks which join up communities. This document is currently being reviewed, and the council considers that more recent national policy documents particularly relating to decarbonisation and active modes should also be given significant weight.

0.1.5. Regional policy, in the form of the Transport East Transport Strategy, and local policy, such as Everyone's Essex and the Essex Green Infrastructure Strategy, demonstrates an increasing focus towards reducing carbon and enhancing the environment. Promoting sustainable transport including good provision for pedestrians and cyclists is a key strand of this.

Impacts of the scheme

0.1.6. The scheme when complete will lead to widespread changes on the local highway network in the short- and long-term, both physically and in terms of changing travel behaviour. In some cases, the impacts on the local highway network will be positive, but in other cases the current proposals are expected to have adverse effects. Several communities will potentially be adversely impacted by the proposals as they stand – some significantly. The council considers it important that the views of these communities are given due consideration during the examination and where appropriate changes to the scheme are made and/or mitigation provided to ensure that the impacts are minimised as far as possible.

0.1.7. The construction impacts of the scheme will likewise be considerable. While the scheme's construction will bring some benefits to the area, disruption on the local road network is likely to be significant noting the experience from current works underway on the A12 and the limited alternative routes on the local network when diversions are required. It will be important that NH work closely with stakeholders including ECC to minimise these impacts as far as possible.

0.1.8. There are significant wider environmental impacts of the scheme both in operation and construction that need to be fully considered and where necessary mitigated. Specific issues include:

- Ecology, biodiversity and green infrastructure. NH's approach to only achieving no net loss and biodiversity generally is disappointing, and the council believes there is an opportunity to make significant improvements for example through increased provision of green infrastructure. There is currently uncertainty around the impacts on biodiversity and ecology.
- Archaeological remains. There are a number of archaeological remains both in and within close proximity to the Order Limits. It will be important that an appropriate assessment of the archaeological impacts of the scheme is put in place.
- Arboricultural impacts. A number of veteran trees will be lost as a result of construction. Although some justification is provided and the council recognises that there will need to be some tree loss, some of the proposed loss is considered to be avoidable.
- Flooding and water management. ECC as the Lead Local Flood Authority (LLFA) is satisfied with the level of information provided to support that the proposed scheme

would not increase risk of flooding from surface water, ground water and from ordinary watercourses during the operational phase of the development. Also the LLFA is satisfied with the SuDS measures proposed to manage the runoff quantities however, we have significant concerns with the provision of water quality measures to treat surface water runoff generated from the A12 drainage catchments.

- Climate change. The applicant assesses the potential likely significant effect of the schemes' carbon emissions against the national level legally binding targets on climate as set out in the Climate Change Act 2008. The assessment methodology and approach set out in the Environmental Statement Chapter 15 is satisfactory, but the council is disappointed that the effect of the scheme's carbon emissions is not assessed against the local target set for the county hence the true impact of the scheme set against Essex's climate change targets is missing at this time.
- Economy and skills. There is likely to be a positive economic impact during construction as a result of the project, with the creation of job opportunities and potential to increase skills to the residents of the local area, through the Employment and Skills Plan. An Employment and Skills Plan should be prepared prior to the commencement of construction. This should set out measures that the applicant will implement in order to advertise and promote employment opportunities associated with the proposed development locally. Further the applicant should also make a skills and education financial contribution to assist and encourage local people to access apprenticeships and training.

0.1.9. In various cases the council considers that more detailed information about the scheme's wider effects and proposed mitigation, over and above that provided in the Environmental Statement, is required.

Changes that the council believes are required

0.1.10. While the council supports the principle of the scheme, we strongly believe that there is a justifiable and proven need for material changes to be made to some aspects of the scheme. A commitment is needed from NH that these changes will be made now, as opposed to some unspecified time in the future, and in most cases we believe these changes should be secured through the DCO.

0.1.11. From a highways and transport perspective, our key issues on the project and those where we think changes are required can be summarised as follows:

- The approach to-detrunking. We believe the current proposals are unacceptable, with the retention of dual carriageways representing significant over-provision in highway terms, a significant ongoing maintenance burden for ECC and a missed opportunity to increase Green Infrastructure and provision for active modes. We believe there is a much better alternative that NH should properly consider.
- While significant provision is included for pedestrians and cyclists, which is welcomed, there are many examples of where the proposed new infrastructure does not accord with Government guidance (principally in the form of LTN 1/20). This will detract from their effectiveness and attractiveness and the council has put forward various suggested changes.
- The need for the changes to the design of Junction 21 to which NH have agreed to be secured through the DCO.
- The impact on the B1137 particularly through Boreham. We believe merely reducing the speed limit is not acceptable and additional measures to encourage compliance with the proposed lower speed limits are required.
- The arrangement and impacts of the new Junction 24. The council remain to be convinced that the design of the new Inworth Road roundabout is appropriate and safe. We believe that additional measures are required on the B1023 to ensure that it can safely accommodate the forecast increase in traffic, and that measures are required to discourage strategic traffic from routeing through Tiptree and the village of Messing.
- The need for an agreed approach to post-opening monitoring of the scheme's actual effects, and a commitment to work with the council (and other parties where necessary) to investigate and address any adverse impacts identified through this morning.
- The need for a robust approach to managing the scheme's construction impacts, which includes meaningful engagement with interested parties such as ECC, noting the significant impacts construction is likely to have on local communities.

0.1.12. We believe that our position on the issues above is shared by the majority of local stakeholders, and is supported by relevant national, regional and local policies.

0.1.13. Changes that we believe are required in connection with the wider environmental impacts of the scheme are as set out in the detailed chapters which follow in this report.

Next steps

0.1.14. The council hopes that the issues this report has identified and the changes we believe are required will be duly investigated through the examination. The council will continue to work proactively with NH to maximise the benefits of the scheme, and looks forward to continuing to play a full and active part in the examination.

1. Introduction

1.1. Background

1.1.1. Essex County Council (ECC) is a host authority and statutory consultee for this Nationally Significant Infrastructure Project (NSIP) proposal.

1.1.2. Since the preferred route for the A12 Chelmsford to A120 NSIP was announced in April 2017, ECC has actively engaged with National Highways (NH) on the scheme. This has included commenting on the evolving scheme design, responding to the EA scoping exercise and making submissions to the various statutory and non-statutory consultations which have taken place.

1.1.3. ECC is one of the largest local authorities in England and has significant interests in the project. Our functions as County Council include that of the local highway and transport authority, the lead local flood authority, the local education authority and the planning authority for applications relating to minerals and waste.

1.1.4. In our role as local highway authority we are responsible for over 5,000 miles of roads, 4,000 miles of public rights of way, over 1,500 bridges and other highway structures and over 130,000 street lights. We recognise the vital role that the highway network plays in the lives of the residents as well as the travelling public and local business. At the same time, we are dedicated to ensuring that everything we do supports the drive towards a Greener Essex, supports the council's strategic priorities documented in Everyone's Essex, and contributes towards achieving the County's target of net zero by 2050.

1.1.5. There is general agreement that the A12 is a difficult road. The council has for many years held concerns about congestion on the A12 and worked proactively to consider means of enhancing the level of service for all users. In March 2008 ECC commissioned the first ever council sponsored inquiry into a major trunk road[1] and this identified a series of recommendations for improvements on the A12. The inquiry recommended that upgrading the sub-standard stretches between Hatfield Peverel and Marks Tey should be given priority and noted that many sections did not meet current standards which is still the case today.

[1] The A12 Commission of Inquiry, which was undertaken by Sir David Rowlands (chair), Professor Stephen Glaister, Dr David Quarmby and Lord Whitty, provided its final report in July 2008

1.1.6. ECC recognises the benefits of this project to the performance of the Strategic Road Network (SRN) for which NH is responsible, including the improvements in resilience, reliability and road safety for the many people who travel on this stretch of the A12. The council supports the principle of this scheme and is keen to see it delivered to ensure that the expected benefits can be realised. The council does consider, however, that some further information is required on the impacts of the scheme and that fundamentally some material changes to the proposals are required. In many cases we believe these changes should be secured through the Development Consent Order (DCO).

1.1.7. Most of these changes relate to traffic and transport, and more specifically to the impacts on and interface between the local highway network (for which ECC is responsible) and the SRN. A summary of the key changes that the council believes are required to the project can be found in the Executive Summary.

1.1.8. The council's approach to this and other NSIPs is, more generally, guided by our NSIP Policy which was approved in December 2022 and is available here[2]. Our aim is to ensure that the full impacts of NSIPs across Essex are considered, adverse impacts are minimised and the benefits to Essex are explored and maximised. This includes securing appropriate mitigation where required and impact monitoring.

1.1.9. The council's assessment is that there is, generally, support for the principle of this scheme amongst many of the key stakeholders. Many people who use the A12 stand to benefit from the proposals. That said, several communities will potentially be adversely impacted by the proposals as they stand – some significantly. ECC considers it important that the views of these communities are given due consideration during the examination and where appropriate changes to the scheme are made and/or mitigation provided to ensure that the impacts are minimised as far as possible.

1.2. Understanding the scheme's effects on Essex

1.2.1. As part of our ongoing engagement with NH on the project, the council has reviewed information provided by NH regarding the impacts of the scheme including the material provided in connection with the public consultations, the draft DCO and the various supporting documents. In some instances we have asked questions, sought clarification and requested further information on specific aspects.

[2] https://www.essex.gov.uk/growth-development-and-nationally-significant-infrastructure-projects

1.2.2. This engagement has included the exchange of a series of letters, as a means of formalising respective positions and requesting information[3]. The most recent letter from ECC to NH is attached for reference as Appendix 1, and this summarises the council's current position on key aspects of the scheme.

1.2.3. To enable us to take a fully informed view about the impacts of the scheme on Essex and our position on the changes we think are required, we have also commissioned our own technical work on various aspects of the project. This has included the following reports:

B1137 Main Road Boreham technical note (Essex Highways)
Duke of Wellington junction technical note (SYSTRA)
Junction 21 technical note (SYSTRA)
Gore Pit junction technical note (SYSTRA)
Junction 24 technical note (SYSTRA)
Design review of Inworth Road roundabout and Maldon link road options (SYSTRA)
Inworth, Messing and Tiptree mitigation options technical note (Essex Highways)
De-trunking technical note (Essex Highways – currently being finalised)

1.2.4. We may wish to refer to these reports as we progress through the examination, in which case we will make the reports available to the PINS case manager so that they can be included in the examination library. We are likewise happy to share any of these reports with the Examining Authority should this be helpful.

1.3. Planning Performance Agreement and Designated Funds

Planning Performance Agreement

1.3.1. NH and ECC have agreed a Planning Performance Agreement (PPA) in respect of the council's engagement on the project over and above our statutory responsibilities as set out in the Planning Act 2008, and this has included payment of an agreed sum.

1.3.2. The PPA covers the council's engagement up until the point of the DCO submission (August 2022), and the council is currently in discussion with NH about the possibility of the agreement being extended to cover some of our involvement in the project throughout the examination. We are hopeful that NH will agree to our request, on the basis that we are

[3] The joint NH/ECC Statement of Common Ground includes several of these letters as appendices.

providing significant input to the project and incurring significant cost in doing so. The council would add that we are currently engaged on nine other NSIPs currently, including the Lower Thames Crossing project which is being promoted by NH, and as such our resources usually available for engagement on third-party infrastructure projects are significantly stretched.

Designated Funds programme

1.3.3. In some cases NH have indicated that some of the changes that we are seeking to the scheme could be delivered through their Designated Funds programme[4], as opposed to as part of the A12 widening scheme.

1.3.4. While we welcome the Designated Funds programme and are actively pursuing bids for projects that will deliver various benefits and are aligned to the programme's objectives, such as a bid to make improvements to the local bus network, we believe that many of the changes should be delivered as part of the scheme because they are required to address or mitigate specific impacts that arise as a direct result of the scheme in operation. We also note that there is no guarantee Designated Fund bids will be successful or that we will know the outcome of any bids before the end of the DCO examination.

[4] [redacted]

2. Scope and structure of the Local Impact Report

2.1. Scope of Local Impact Report

2.1.1. This report is the council's Local Impact Report (LIR). In preparing this LIR due regard has been had to the purpose of LIRs as set out in s60(3) of the Planning Act 2008 (as amended), DCLG's Guidance for the examination of applications for development consent and the Planning Inspectorate's Advice Note One, Local Impact Reports and the Planning Inspectorate's 'example documents'.

2.1.2. This LIR relates to the impacts of the proposed development as it affects the administrative area of ECC. Separate LIRs are expected from the host district authorities, namely; Chelmsford City Council, Braintree District Council, Colchester City Council and Maldon District Council.

2.1.3. The LIR covers topics where ECC has a statutory function or holds expertise. Some topics are focused on a specific location or aspect of the scheme, while some (e.g. archaeology, heritage, ecology etc) are scheme-wide. Where possible the LIR has sought not to duplicate material covered in the council's Statement of Common Ground with NH.

2.1.4. The level of interest that the council has in the project means that this is a lengthy report. Much of the content focuses on aspects where the council believes changes are required but this shouldn't be taken to mean the council is not supportive of the scheme in principle. To assist the Examining Authority a summary of the key changes that the council believes are required to the project can be found in the Executive Summary.

2.2. Structure of LIR

2.2.1. The remainder of the report covers the following aspects:

- Section 3: Description of the area impacted by this NSIP
- Section 4: National planning and transport policy relevant to the scheme
- Section 5: Regional policy relevant to the scheme
- Section 6: Local policy relevant to the scheme
- Section 7: Description of the proposed scheme
- Section 8: Highway and transport effects
- Section 9: Wider impacts
- Section 10: Next steps

3. Description of the current situation

3.1. The A12 is a major trunk road running between London and Great Yarmouth. The original road alignment that became the A12 was first created by the Romans, linking Londinium with Venta Icenorum (near Norwich) via Camulodunum (Colchester). Settlements built up at key locations on the route, and by the twentieth century the A12 had become established as the major route between London and the East Anglia coast.

3.2. By the 1920's road traffic was becoming a problem in Chelmsford, exacerbated by the limited bridge crossings of the River Chelmer, and from the 1930's through to the 1980's (culminating with the 2-lane Chelmsford Bypass which opened in the mid 1980's) a whole series of ten bypasses and upgrade schemes on the road were implemented to support growth. The piecemeal nature of these works, while providing much-needed localised improvements, means that the road has varying widths, curves, gradients, lay-bys and junction standards, with a considerable number of property frontages still having direct access onto the A12 not in accordance with current standards. Unlike many other major routes, the A12 has never been the subject of strategic improvements of the nature now being proposed by NH.

Figure 3-1: Proposed scheme in relation to the A12 and wider SRN (source: NH)

3.3. Today it remains the only spine road through eastern Essex, as well as connecting East Anglia and the major settlements of Ipswich, Colchester and Chelmsford to the M25 and Greater London. As such it is an important economic link and is of critical economic and social

importance to the wellbeing of the towns, cities and communities it serves. A significant proportion of the road in Essex runs through rural areas, noting that 72 per cent of the landscape in Essex is rural, with some rural communities depending on the road as their principal connection to the wider road network. For much of its length it runs broadly parallel to the Great Eastern Main Line (GEML), and it follows that when there are planned works on the A12 demand on the GEML increases and vice versa.

3.4. The section between Chelmsford and Colchester (junction 19 Boreham Interchange to junction 25 Marks Tey) which is subject to the current proposal carries high volumes of traffic, with up to 90,000 vehicles every day. Heavy goods vehicles (HGVs) form between 9% and 12% of the traffic on this section due to its important freight connection, especially to Felixstowe and Harwich ports. While traffic flows reduced materially during the Covid pandemic, data collected nationally by the Department for Transport (DfT) indicates that car use is now similar to pre-Covid levels and freight traffic has increased significantly. The road is often seriously congested on certain sections and at specific junctions, is vulnerable to accidents and incidents which often disrupt traffic over a wide area and is generally regarded as stressful for drivers. During peak periods average speed is particularly slow in both directions for a dual carriageway A-road of its kind.

3.5. Many of the witnesses to the 2008 inquiry reported that they perceived the A12 to be a dangerous road, particularly in the vicinity of Hatfield Peverel and Witham. NH report that between 2011-2019 there were a total of 246 recorded collisions between junction 20a and junction 25, resulting in 75 casualties who were either killed or seriously injured. Road traffic collisions are not only a particular concern for users of the A12 because of the risk of being injured or killed but also because accidents usually involve closure of part or the whole of the road, diversion of other traffic and congestion and delays.

3.6. Considerable further economic and housing growth is planned in and around the settlements along the A12 corridor, in accordance with the Local Plans of the respective district authorities. It follows that existing issues with the A12 will foreseeably exacerbate without major interventions of the type planned by NH on the corridor, not least of which is the A12 widening scheme which is subject to this DCO application.

4. National planning and transport policy

4.1. Introduction

4.1.1. The structure of the following sections (4, 5 and 6) of this LIR set out the relevant plans, strategies and policies which have direct relevance to the impact the DCO application has on Essex, starting with the NPSNN.

4.2. The National Policy Statement National Networks (NPSNN)

4.2.1. The overarching National Policy Statement relevant to this scheme is the National Policy Statement for National Networks (NPSNN), published in 2014. The statement sets out national policy for the delivery of nationally significant highways infrastructure and includes assessment principles for judging the impacts of national network proposals.

4.2.2. In July 2021 it was announced that the current NPS remains in force but it is now necessary to review targets as set in 2019 being mindful of the Government's legal commitment to net zero, the 10-point plan for a green industrial revolution, the new carbon budget and the new, more ambitious policies outlined in the transport decarbonisation plan.

4.2.3. Hence whilst the NPS continues to remain in force, it is necessary to review it in the light of the above and update forecasts on which it is based to reflect more recent, post-pandemic conditions, as they become available. The DfT's current stated aim is for the review to be completed in spring 2023, however it is likely this will be delayed. Reviewing the NPSNN will ensure that it remains fit for purpose in supporting the government's commitments for appropriate development of infrastructure for road, rail, and strategic rail freight interchanges. While the review is undertaken, the NPSNN remains relevant government policy and has effect for the purposes of the Planning Act 2008.

4.2.4. The NPSNN (Paragraph 3.1) states that the need for development of the national networks, and the Government's policy for addressing that need, must be seen in the context of the Government's wider policies on economic performance, environment, safety, technology, sustainable transport and accessibility, as well as journey reliability and the experience of road users. The Government has therefore concluded that at a strategic level there is a compelling need for the continued development of the national road network.

4.2.5. The NPSNN states that subject to the detailed policies and protections within it, and the legal constraints set out in the Planning Act 2008, there is a presumption in favour of

granting development consent for national networks NSIPs that fall within the need for infrastructure established in the NPSNN.

4.2.6. The NPSNN 'vision' states that the Government will deliver national networks that meet the country's long-term needs; supporting a prosperous and competitive economy and improving the overall quality of life, as part of a wider transport system. This means:

- Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs;
- Networks which support and improve journey quality, reliability and safety;
- Networks which support the delivery of environmental goals and the move to a low carbon economy; and
- Networks which join up our communities and link effectively to each other.

4.2.7. The NPSNN provides guidance and imposes requirements on matters such as good scheme design, as well as the treatment of environmental impacts. It also provides planning guidance for such projects and is the basis for the Examination and decisions by the SoS.

Relevance to the DCO application

4.2.8. The NPSNN is the principal national policy document against which this scheme should be assessed. However, it should be noted that the document is being reviewed and will be updated so aspects may be outdated, in which case other more recent documents (outlined below) may be more relevant and should be given due weight.

4.3. The National Planning Framework

4.3.1. The National Planning Policy Framework (July 2021) (NPPF) and its accompanying National Planning Practice Guidance (NPPG) set out the Government's planning policies for England and how these are expected to be applied for the purposes of making development plans and deciding applications for planning permission and related determinations under the Town and Country Planning Act 1990 (as amended).

4.3.2. The NPPF does not contain specific policies for NSIPs. These are determined in accordance with the decision-making framework in the Planning Act 2008 and relevant NPSs for major infrastructure, as well as any other matters that are important and relevant, which may include the NPPF.

4.3.3. Paragraphs 1.17 to 1.20 of the NPSNN further describe the relationship between the NPPF and the NPSNN. In summary, these paragraphs provide that:

- the NPPF may be an important and relevant consideration in decisions on NSIPs, but only to the extent relevant to a project;
- the NPPF is not intended to contain specific policies for individual NSIPs, where particular considerations can apply. The NPSNN performs that function; and
- the NPPF provides a framework within which responses to individual project effects can be considered, but that in relation to tests or standards to be met, these are normally derived from the NPSNN.

Relevance to the DCO application

4.3.4. While the NPPF does not contain specific policies for NSIPs, it nonetheless provides an overarching policy framework against which new development including infrastructure schemes should be considered. Key principles relevant to this application are that opportunities for promoting walking, cycling and public transport are identified and pursued, adverse effects are avoided / mitigated, development should deliver net environmental gains, and the natural and historic environment should be conserved and enhanced.

4.4. Decarbonising Transport: A Better, Greener Britain

4.4.1. The Decarbonising Transport document was published in 2021 and outlines the government commitments to decarbonising the transport systems and sets out stringent targets to achieve net zero by 2050. The document notes transport is the largest contributor to greenhouse gases accounting for 27% of total emissions in 2019, with the largest proportion comprising of motorised transport (Cars, HGVs and LGVs).

4.4.2. The document notes the current costs to society that the transport system imposes. For example, poor air quality (for which transport is the largest contributor) is estimated to cost health and social care services in England £5.3bn by 2035.

4.4.3. There are a number of strategic priorities set out in the plan, the first of which is around accelerating modal shift to public and active transport. Here the Government notes the importance of public transport and active travel being the natural first choice for our daily activities, with cars being used differently and less often with new technology to help reduce our carbon footprint.

Relevance to the DCO application

4.4.4. The NPSNN (paragraph 5.19) requires that *'Evidence of appropriate mitigation measures (incorporating engineering plans on configuration and layout, and use of materials) in both*

design and construction should be presented. The Secretary of State will consider the effectiveness of such mitigation measures in order to ensure that, in relation to design and construction, the carbon footprint is not unnecessarily high. The Secretary of State's view of the adequacy of the mitigation measures relating to design and construction will be a material factor in the decision making process'.

4.4.5. Decarbonising Transport also stresses the importance of providing modal shift towards active and sustainable modes, but for this shift to take place it is necessary to have high quality credible alternatives to private car transport. Section 8 of this LIR sets out the impacts of the current proposals on relevant local active and sustainable transport networks, and identifies some opportunities for improvement.

4.5. Cycling and Walking Investment Strategy

4.5.1. Published by the DfT in 2017, three years after the NPSNN, the statutory Cycling and Walking Investment Strategy aims to make cycling and walking the natural choice for shorter journeys or as part of a longer journey and is therefore relevant to the DCO application. The investment strategy acts as a pre-cursor to latter documents such as DfT's Gear Change, and the Local Transport Note 1/20 showing the Government's commitment to cycling and walking.

4.5.2. The strategy sets out a number of ambitions to be achieved by 2040 which are relevant to this DCO application, including higher quality walking and cycling facilities, lower traffic speeds where appropriate to the local area and improved safety on rural roads for pedestrians and cyclists.

4.6. Gear Change: A bold vision for cycling and walking

4.6.1. Published in 2020, the DfT's Gear Change document proposed a new vision for cycling and walking across the Country and has the aim of to make England an active travel nation. To achieve this, the document notes that the main barriers to cycling and walking need to be tackled in order that people are attracted to active travel through building better quality infrastructure, making streets better for everyone and to make sure people feel safe and confident to cycle.

4.6.2. Gear Change proposes that active travel is embedded in wider policy making and identifies the need to deliver much higher standards in walking and cycling infrastructure than has historically been the case. A key theme is about 'encouraging and empowering local

authorities' to deliver bold changes, putting the needs of active users at the heart of decision-making and require developers to 'up their game' in ensuring that new development deliver high-quality provision for walking and cycling. The council has readily accepted this challenge, as evident in our Safer, Greener, Healthier campaign[5] which aims to make a step-change through making it easier for people to walk, cycle or scoot in Essex.

Relevance to the DCO application

4.6.3. The DfT's Gear Change document paved the way for the later release of several documents aimed at delivering higher standards for cycle infrastructure, foremost of which is LTN 1/20 (outlined below). The council believes that while NH's focus is understandably on meeting the needs of strategic traffic, they have an important part to play in reducing severance caused by the SRN and not least because they are government-owned company they should play their part in delivering the vision set out in Gear Change.

4.7. Local Transport Note 1/20: Cycle Infrastructure Design

4.7.1. The Cycling and Walking Investment Strategy along with Decarbonising Transport set a clear ambition to make cycling and walking the natural choices for short journeys or part of a longer journey with supporting objectives to increase cycling and walking levels. LTN 1/20, published in summer 2000, is intended to provide the principles, design guidance and tools for achieving that ambition.

4.7.2. LTN 1/20 is intended primarily for use by practitioners involved in designing new or improved cycling infrastructure. It sets out the five core design principles – networks should be coherent, direct, safe, comfortable and attractive – and 22 summary principles. There is an expectation that local authorities will demonstrate that they have given due consideration to LTN 1/20 when designing new infrastructure for cyclists. This also applies to agencies delivering new infrastructure which have an impact on local highway networks.

4.7.3. The guidance highlights the importance of inclusive design and accessibility which should run through all five of the design principles. Designers and promoters should always aim to provide infrastructure that meets these principles and therefore caters for the broadest range of people.

4.7.4. The summary principles which the council considers are particularly relevant to the DCO application are:

[5] [redacted]

- Consideration of the opportunities to improve provision for cycling will be an expectation of any future local highway schemes funded by Government.
- Cycle infrastructure must join together, or join other facilities together by taking a holistic, connected network approach which recognises the importance of nodes, links and areas that are good for cycling.
- Major 'iconic' items, such as overbridges must form part of wider, properly thought-through schemes.
- Cycle routes must flow, feeling direct and logical.

Relevance to the DCO application

4.7.5. The council considers the NPSNN to be rather lacking in respect of meeting the needs of active modes and believe that the Cycling and Walking Investment Strategy and LTN 1/20 are more relevant to today's evolving transport picture in the pursuit of decarbonisation, investing in sustainable and active modes and making sure networks are accessible to all.

4.7.6. Whilst LTN 1/20 is guidance and not policy, it is relevant in terms of the policy the guidance is seeking to achieve through design therefore it is considered material when analysing the impacts of the DCO on local networks such as walking and cycling facilities/infrastructure.

4.7.7. It is noted that the Design Manual for Roads and Bridges contains guidance on undertaking a walking, cycling & horse-riding assessment and review (WCHAR) and is applicable for trunk roads in providing a good basis (however only a basis) for assessing the needs of all users along and across inter-urban roads. It does not detail where the trunk roads interact/alter/divert local networks, and it is here that the council feels that the DCO application needs to provide more assurance that wherever a cycling measure is proposed it meets the core and summary principles set out in LTN 1/20.

4.7.8. Of key relevance to the design of the proposed WCH facilities at junctions and crossing structures is the core design principle of directness. Directness includes providing facilities at junctions that minimise delay and the need to stop. Minimising the effort required to cycle, by enabling cyclists to maintain momentum, is an important aspect of directness. An indirect designated route involving extra distance or more stopping and starting will result in some cyclists choosing the most direct, faster option, even if it is less safe.

4.8. Walking, cycling and horse-riding assessment and review (WCHAR): General Guidance 142

4.8.1. The purpose of Design Manual for Roads and Bridges GG142 (WCHAR) is to facilitate the inclusion of all walking, cycling and horse-riding modes in the highway scheme development

process from the earliest stage; enabling opportunities for new or improved facilities and their integration with the local and national networks. This could include the creation and/or improvement of facilities for pedestrians, cyclists and equestrians that are separate from the highway.

4.8.2. WCHAR is intended to provide increased collaboration, interaction and engagement between key stakeholders. The process is made up of two distinct parts - assessment of existing conditions, facilities and opportunities before design begins, and review of the scheme in relation to WCH facilities, as it develops.

Relevance to the DCO application

4.8.3. The results of the WCH assessment should be recorded by the design team. This should include a record of liaison with key stakeholders to understand their specific needs and concerns. It should also clearly identify opportunities for improvements for users.

4.8.4. For large schemes such as the A12 widening scheme, two Review Reports should be produced; the first at the end of the preliminary design stage (before commencement of detailed design) and the second at the end of the detailed design phase (before construction commences).

4.8.5. Within each Review Report, highway scheme design drawings and associated information should be reviewed to ensure that previously identified opportunities at the assessment phase have been taken into account and implemented, where achievable. Opportunities for improvement for pedestrians, cyclists and equestrians as a result of the developing highway scheme design should also be identified.

5. Sub-regional transport policy

5.1. Transport East Transport Strategy

5.1.1. Published in July 2022 by Transport East, the Transport Strategy for the Eastern Region[6] covers Norfolk, Suffolk, Essex, Southend and Thurrock and sets out a bold vision for a thriving Eastern region with safe, efficient and net-zero transport networks advancing a future of inclusive and sustainable growth for decades to come.

5.1.2. In order to achieve this vision, the strategy identifies four key priorities or pathways which are outlined as follows:

- Decarbonisation to net-zero
- Connecting growing towns and cities
- Energising coastal and rural communities
- Unlocking international gateways

5.1.3. As the strategy identifies the A12 as one of the 6 key corridors noting that it provides access to many settlements along its length, including large settlements such as Colchester and Chelmsford and many smaller settlementsThe A12 provides connections to and between the urban centres to improve access to services, education, training and employment.

5.1.4. The A12 also provides essential connectivity, unlocking international gateways y ensuring effective and reliable journeys for freight, passengers and employees accessing the east coast ports.

5.1.5. Of relevance to the DCO application is the London – Chelmsford – Colchester – Ipswich – Norwich – Suffolk Coast corridor (shown in light blue) of which the A12 forms a key part.

Relevance to the DCO application

[redacted]

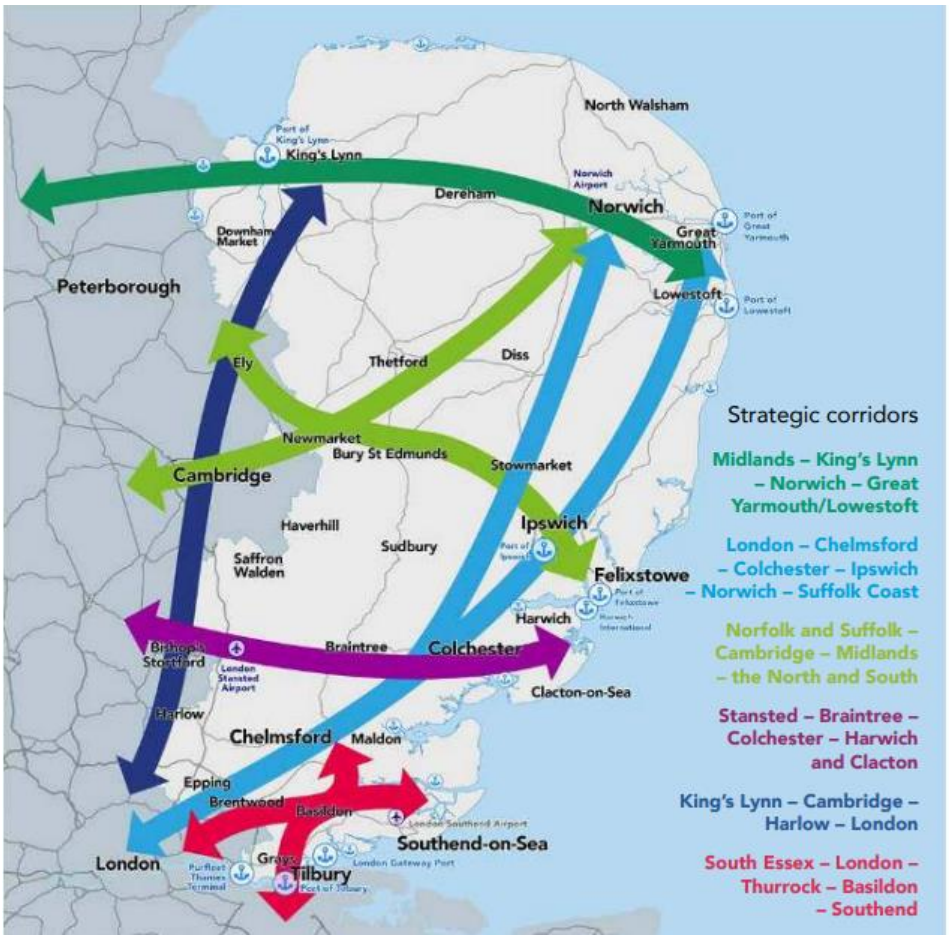

Figure 5.1: Transport East Corridors

5.1.6. Two of the key priorities in the strategy have direct relevance to the A12 widening project, these being the need to prioritise strategic movements to international gateways and connections to growing towns and cities and the need to ensure appropriate measures are in place to promote active and sustainable modes of travel.

6. Local planning and transport policy

6.1. Local Development Plans

6.1.1. The NPSNN requires consideration to be given to policies and information in the relevant development plan/s to matters including other developments which may give rise to cumulative impacts, non- designated heritage assets, impacts on land use and the preclusion of other development, local transport networks and the management of travel demand.

6.1.2. The four district authorities directly affected by this scheme each have adopted Local Plans in place. As each district has the opportunity to submit their own LIR a summary of these Local Plans and their relevance to this DCO application are not included here, suffice to say that ECC believes they should be given due weight in determining the application.

6.2. Everyone's Essex

6.2.1. Everyone's Essex sets out the council's ambitious plans for levelling up the county from 2021 to 2025, for the benefits of its residents, businesses and the communities it serves. The document sets out four outcomes and 20 commitments with the aim of 'building back better' following the Covid pandemic. The outcomes, which are Renewal, Equality, Ambition based, are focused on four key areas where outcomes really matter for the quality of life of our residents. They are:

- the economy
- the environment
- children and families
- promoting health, care and wellbeing for all the parts of our population who need our support

6.2.2. A key commitment relevant to this DCO application is that the council will deliver and maintain high quality infrastructure to improve opportunities for people living in Essex as well as supporting a growing economy and the delivery of new homes and communities. The intention is to create the conditions for growth by maximising the impact of public sector spend within the county.

6.2.3. In respect of the environment, commitments include reducing greenhouse gas emissions, building climate resilience (for example through increased green infrastructure), growing passenger transport and active travel and improving air quality.

6.3. Essex Minerals Local Plan and the Essex and Southend-on-Sea Waste Local Plan

6.3.1. The planning policy framework for minerals and waste within Essex is set out in the adopted Essex Minerals Local Plan (MLP) 2014 and the adopted Essex and Southend-on-Sea Waste Local Plan (WLP) 2017. The MLP is currently undergoing a review. This review has not yet reached Regulation 19 stage and therefore the Minerals and Waste Planning Authority (MWPA) currently places no weight on any proposed amendments to relevant policies.

6.3.2. Policies within the current Adopted Plan seek to safeguard areas of currently vacant land throughout Essex for potential future mineral extraction. The route of the A12 is one which is safeguarded; hence Policy S8 in the Plan is of relevance to this DCO. If built this DCO proposal will effectively sterilise a large mineral reserve.

Relevance to the DCO application

6.3.3. The Council has considered the arguments put forward in the MRA justifying the sterilisation of all minerals within the Order Limits. This LiR includes a specific section on the minerals and waste considerations as far as they relate to this DCO application.

6.3.4. In addition the Examining Authority raised a number of specific questions (ExQ1) which the council has responded to in respect of sterilisation mitigation measures to safeguard mineral resources, NH's baseline assessment, assessment methodology and significant categories and criteria, to minimise the volume of waste produced and the volume of waste that will be sent for disposal, and an update on the status of Colemans Farm Quarry. These questions and the answers to the same are not duplicated here.

6.4. Drainage, flood risk and water management plans

6.4.1. There are several documents which are relevant to this DCO application in respect of drainage, flood risk and water management. Section 9 of this LIR details the key issues for consideration. These documents include:

- The Sustainable Drainage Systems Design Guide for Essex, 2020
- Essex Preliminary Flood Risk Assessment (PFRA), 2011 amended 2018
- Braintree and Witham Surface Water Management Plan, 2016
- Mid Essex Flood Risk Assessment, 2007
- Chelmsford Surface Water Management Plan, 2018
- Chelmsford City Strategic Flood Risk Assessment, 2018

6.5. Net Zero: Making Essex Carbon Neutral – Essex Climate Action Commission

6.5.1. The Essex Climate Action Commission[7] was set up in 2020 to advise the council about tackling climate change and monitor progress. In its report entitled Net Zero: Making Essex Carbon Neutral (July 2021), the commission sets out recommendations across six core themes, with a trajectory of targets and milestones that need to be met for Essex to become a net zero county by 2050. The six core themes are: land use and green infrastructure, energy, the built environment, transport, waste and community engagement.

6.5.2. The report notes that '*congestion on Essex roads is an environmental disaster and economically costing local businesses billions'*, and the A12 is currently among the most congested roads not just in Essex but within the Eastern region. While some roads by private motorised transport are essential, the Commission is clear that there is a need to avoid or reduce unnecessary car journeys and substantially increasing walking, cycling, bus and train travel as a proportion of all trips is essential if the net zero targets are to be met.

6.5.3. Other recommendations of particular relevance to this DCO application include the need to encourage the take up of hydrogen and electric vehicles (for which NH share significant responsibility, particularly around providing charging facilities for HGVs), the need to double the amount of natural green infrastructure in Essex, enhance biodiversity and develop integrated water management and natural flood management techniques.

6.5.4. Clearly, achieving net zero will require considerable effort from the public, private, and voluntary sectors and wider society more generally. The council is working hard to play its part, and companies such as NH likewise to play a full and active role.

6.6. Essex Green Infrastructure Strategy

6.6.1. Published in 2020, the Essex Green Infrastructure Strategy aims to create a county-wide understanding of green infrastructure and promote a collaborative approach to deliver and provide long-term management for multi-functional natural assets which will provide environmental, social and economic benefits. The strategy is intended to:

- protect, create, and improve green infrastructure for biodiversity and people
- improve connectivity and inclusivity, by supporting healthier, more active lifestyles

[redacted]

- contribute to economic growth

6.6.2. The council has developed the Essex Green Infrastructure Standards, 2022, to provide clear guidance on the requirements on both planning policy and planning applications and processes. This champion for the enhancement, protection, and creation of an inclusive and integrated network of green spaces. Applying Essex's nine GI principles will help to ensure quality and consistency in the provision, management, and stewardship of GI an essential part of place-making and place-keeping for the benefit of people and wildlife.

6.6.3. The council believes there is an opportunity to deliver significant green infrastructure enhancement as part of the A12 widening project and further information on the implications of the scheme on green infrastructure can be found in Section 8.

6.7. Essex Local Transport Plan

6.7.1. The Local Transport Plan (LTP) is a statutory document for all Local Transport Authorities and as such guides the maintenance, development and improvement of all aspects the transport system in Essex.

6.7.2. The Essex Transport Strategy, the Local Transport Plan (LTP3) covering Essex, was published June 2011. It is a long-term strategy that sets out aspirations for improving travel in the county, demonstrating the importance of our transport network to achieving sustainable long-term economic growth and enriching the lives of our residents.

6.7.3. The Essex LTP published in June 2011[8] has stated a vision to create 'a transport system that supports sustainable economic growth and helps deliver the best quality of life for the residents of Essex'. To enable the delivery of this vision, the LTP identifies five key outcomes and contains a suite of 15 transport policies that apply throughout Essex. The LTP outcomes are to:

- Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration
- Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology
- Improve safety on the transport network and enhance and promote a safe travelling environment
- Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use

[redacted]

- Provide sustainable access and travel choice for Essex residents to help create sustainable communities.

6.7.4. The LTP notes the importance of the A12 corridor and in fact identifies as a strategic priority the need to lobby for improvements to this corridor given that it suffers significant congestion and reliability issues which were highlighted by the 2008 inquiry.

6.7.5. Equally as important are the outcomes around safety of the network, maintenance of assets and provision of sustainable access and travel choice. Specifically, the strategy includes strategic priorities around the promotion of walking, cycling and sustainable transport. This outcome is now an enhanced priority for the council given changing priorities at national, regional and local levels around active and sustainable travel.

6.7.6. ECC has recently began the process to update the Local Transport Plan. Work is underway and is expected to continue throughout the 2022/23 financial year with the new LTP4 being in place in 2024 in line with current DfT expectations and the anticipated revised LTP Guidance.

6.7.7. The new LTP will be evidence led and focussed upon the delivery of strategic themes linked to the delivery of wider Essex and Government priorities that reflect the significant changes to the national policy backdrop, the production of new standards that place greater importance upon the provision and use of sustainable transport, and the UK commitment to the decarbonisation of the transport network by 2050.

6.7.8. Four strategic themes are proposed for LTP4:

- Decarbonisation
- Supporting People: Health, Wellbeing and Independence
- Creating Sustainable Places and Communities
- Connecting People, Places and Businesses.
- Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology

6.7.9. Whilst these emerging themes are not yet adopted it does clearly show the direction of travel the council is heading towards in terms of the sustainable travel modes and decarbonisation.

6.7.10. The LTP has several daughter strategies and plans which are of relevance to the DCO application, including the Essex Cycling Strategy (2016) and Essex Walking Strategy (2021). Both strategies mark a step-change in the council's approach to designing and delivering improvements for cyclists and pedestrians respectively, in line with the shift in Government

policy. Another relevant daughter strategy is the Public Rights of Way Improvement Plan (2009) given that the A12 widening scheme will affect numerous public rights of way (PROW), be it through dissecting existing public rights of way PROWs or improving connectivity between PROWs for the benefit of users.

Relevance to the DCO Application

6.7.11. The LTP is of clear relevance to the DCO application particularly with regard to the need for harmony between strategic and local transport networks. How the strategic network (in this instance the A12) will link to and interface with the local highway, walking and cycling networks is an area of key interest to the council.

6.8. Essex Highways Asset Management Strategy

6.8.1. As noted earlier in this report (para 1.1.3.4) the council is responsible for a sizeable highway network, which spans an area of approximately 3670 square kilometres. This highway network has an estimated value of well over £8bn and as such requires extensive maintenance funding to ensure that it meets customer needs.

6.8.2. The Essex Asset Management Strategy[9] published in 2019 recognises the vital role the highway asset plays in the lives of residents as well as the travelling public and local businesses. The strategy sets out the importance of effective asset management of the highway network and identifies five categories of highway asset each of which has its own specific maintenance requirements. The adoption of new technology and highway maintenance techniques plays an important part in managing the asset. The strategy notes the benefits of footways and cycle routes in providing alternative modes of travel, contributing to wellbeing and meeting other outcomes and by extension the importance of footways and cycleways being maintained to a good standard.

6.8.3. Maintaining a highway network of this scale is a challenge in the context of the current significant financial challenges faced by the council, especially in view of the Covid pandemic, national and global issues. The short to medium term outlook remains incredibly challenging, with demand uncertainty, market volatility and rising inflation and interest rates, alongside cost of living impacts. For example, inflation continues at 40 year highs and is at 10.7% (January 2023), over double the council tax rise applied this year.

Relevance to the DCO application

[redacted]

6.8.4. Given that NH is proposing that two large sections of the A12 will be de-trunked it is vitally important that these assets be handed over to ECC in such a state that it does not represent an immediate and significant additional burden for which the council is not currently budgeted to maintain. Significant stretches of the A12 are currently of a poor quality, in part because of their concrete construction, and this should not become the council's problem as a result of the current proposals.

6.8.5. Furthermore any new local highway assets which are delivered as part of the A12 widening scheme and transferred to the council needs to accord to the standards stipulated by the council to ensure it is can be operated and maintained in a way which is satisfactory to us as the local highway authority. Providing assets which by virtue of their design bring inherent operational (including road safety) and/or maintenance issues which the council will need to manage is not acceptable.

7. Description of the proposed development

7.1. The proposal comprises improvements to the A12 between junction 19 (Boreham Interchange) and junction 25 (Marks Tey Interchange), a distance of about 24 km or 15 miles.

7.2. The entirety of the as proposed development is within the administrative area of ECC. The proposed site extends principally through the Braintree District and Colchester City administrative areas, with smaller parts located within the Chelmsford City and Maldon District administrative areas. The scheme passes through seven parish council areas, with several more indirectly impacted.

7.3. The existing carriageway, which is proposed to be widening to three-lanes in each direction and in some places re-routed, is predominantly a dual two-lane carriageway with a limited length of three lane carriageway between Junctions 19 (Boreham Interchange) and 20a (Hatfield Peverel South Interchange).

7.4. A full description of the site and surroundings is given in NH's Environmental Statement (ES). It is noted that the applicant is using the 'Rochdale Envelope' approach to provide flexibility in the development.

7.5. More specifically, the scheme as put forward by NH includes:

- Widening the A12 to three lanes throughout the distance (where it is not already three lanes).
- Bypass between Junctions 22 and 23 (Colemans to Kelvedon South).
- Bypass between Junctions 24 and 25 (Kelvedon North to Marks Tey Interchange).
- 6 new bridges for walkers, cyclists and horse riders.
- Safety improvements including closing off private and local direct accesses onto the main carriageway and providing alternative provision for walkers, cyclists and horse riders.
- Associated works comprising side road upgrades to connect to the A12, new or improved drainage, new signs and technology, utility improvements and resurfacing of the A12 carriageway in some locations.
- Improvements to Junction 19 (Boreham interchange) through introduction of additional lanes on Boreham Bridge and additional lanes to its roundabouts (including approaches and exit roads).
- Construction of new signal-controlled crossing at Junction 19 to allow walkers and cyclists to cross safely.
- Construction of new bridge link on the north side of Junction 19 (new Paynes Lane Bridge) for use by walkers, cyclists and horse riders.

- Signage improvements, overhead gantry works and road surface improvements to the southbound carriageway.
- Mitigation within Boreham Settlement, including the proposed reduction in speed limit to 30 mph.
- Widening the road to three lanes in each direction at Hatfield Peverel.
- Closure of Junctions 20a and 20b and replacement with a new Junction 21 (Witham South Interchange). The new junction 21 would provide access to the A12 both northbound and southbound and would take traffic from all directions from Hatfield Peverel and Witham.
- Junction improvements at J19 and J25, construction of new junctions catering for traffic movements both north and southbound (J21, 22 and 24) and removal of existing junctions (J20a, 20b and 23).
- Rerouting of the current Cadent Gas main, which itself would be an NSIP proposal but is conjoined to this DCO submission.

7.6. Some of the existing assets affected by the works and some of the new assets being created will be transferred through to DCO for ECC to then adopt and maintain. In some cases responsibility for assets will be shared, with NH for example responsible for a bridge structure and ECC responsible for the carriageway surfacing.

Construction plans

7.7. Based on NH's current programme and on the basis of the DCO being made we understand construction is expected to take place from 2024 to 2028. The approximate size of the workforce to construct the scheme is expected to be at peak 1500 staff on site per day, of which about two thirds would be site based and the remaining one third would be site office based or working from home. Many staff would stay overnight in the local area using settlements such as Chelmsford, Witham, Braintree and Colchester.

7.8. Standard working hours would be between 07:30 and 19:00 between Monday to Friday and between 07:30 and 18:00 on Saturday. During the summer months, the working hours would extend to 07:00 to 21:00 to make use of longer daylight hours. In addition, there would be an hour before and after these times for site set up and site close down.

7.9. Off peak working would take place during night times, weekends and bank holidays for a limited number of prescribed purposes. Whilst operational, activity across the site would be minimal and restricted to monitoring.

7.10. Once operational, the A12 would remain part of the SRN and operated by NH. Works would be limited to maintenance and landscaping aftercare. It is highly unlikely that the proposed

scheme would be demolished and decommissioned, hence the impacts of the same are not considered to be a material consideration for the DCO.

8. Assessment of highway and transport effects

8.1. Introduction

8.1.1. This section sets out the what the council considers are the key highway and transport effects with particular consideration given to the local highway network for which the council is responsible. The section begins with a summary of the key thematic issues that affect more than one location and then proceeds to go into more detail on a location-by-location basis.

8.2. Summary of key issues

De-trunking

8.2.1. NH is proposing to de-trunk two sections of the existing A12, north and south of Kelvedon, retaining approximately 5.5Km of the de-trunked highway as dual carriageway. This arrangement, once suitable for derestricted speeds and significant traffic flows, would not be appropriate for the sections of road that will become 'local' in nature.

8.2.2. The current proposals for the de-trunked sections of dual carriageway do not take sufficient account of NH's own Sustainable Development Strategy (2017)[10] or conform to a number of the key principles set out in The Road to Good Design (Highways England, 2018)[11] or National Highways' Strategic Design Panel 2 Progress Report (2018)[12]. In particular the proposals in their current form do not:

- Reduce barriers to access and participation
- Fit in with the context and aesthetic in relation to where it passes
- Enhance a sense of place
- Make an important contribution to the conservation and enhancement of the natural and built environment

8.2.3. In addition, the proposals are not fully in line with NPSNN or DMRB LD 117 Landscape Design (Highways England, 2020), as they do not go far enough in improving quality of life, reconnecting habitats and ecosystems, enhancing landscape character, helping pedestrians and cyclists and contributing to environmental net gain. They do not make a meaningful

[redacted]

[redacted]

[12] https://www.gov.uk/government/publications/highways-england-strategic-design-panel-progress-report-2

contribution the objectives of the Essex Green Infrastructure Strategy (2020) or Essex Climate Commission's recommendation to double the amount of green infrastructure in Essex.

8.2.4. NH's traffic modelling confirms that a dual carriageway arrangement would be a significant over-provision for the traffic flows predicted on the de-trunked sections of the A12 - with a Volume/Capacity ratio of between 0.13 and 0.22 in Rivenhall End and between Feering and Marks Tey. A single carriageway road would have ample capacity for the forecast traffic flows and the retention of the dual carriageway arrangement represents a significant ongoing maintenance burden to ECC, noting the point raised in paragraph 6.8.3.

8.2.5. Although NH has proposed a number of roundabouts on the de-trunked sections of dual carriageway, there is still a high likelihood of vehicles exceeding the speed limits in between the junctions, due to the straight alignment and segregation of opposing traffic flow. This is a significant safety concern, as excessive speeds would increase the risk of collisions and the severity of the consequences.

8.2.6. NH's proposals are at odds with ECC's place making agenda, in particular through Rivenhall End. The expanse of carriageway would be out of character with the rest of the village.

8.2.7. There is a missed opportunity for a step change in provision for active travel modes, and to increase green infrastructure in support of the Government and ECC's ambitions for net zero, biodiversity and flood control.

8.2.8. ECC has been raising concerns with the proposed approach to the de-trunked sections with NH for some time. In part because NH haven't, in the council's opinion, given meaningful consideration to these concerns, over the past few months we have looked in some detail at what we think is a better alternative proposal for the de-trunked sections of dual carriageway which retains the southern carriageway as a two-lane single carriage and repurposes parts of the northern carriageway for a wide active travel corridor. The proposal incorporates varied planting, earth embankments and sustainable drainage systems to create a scheme that also promotes biodiversity net gain and increased green infrastructure.

8.2.9. A summary of the council's alternative proposals for the de-trunked sections can be found in Appendix 2.

Walking, cycling and horse-riding (WCH)

8.2.10. While the council acknowledges and welcomes the significant amount of new WCH infrastructure proposed as part of the scheme, we are concerned that accordance with the DfT's national guidance on cycle design (LTN 1/20) has not been demonstrated at numerous key locations along the length of the scheme; in particular at junctions and proposed pedestrian and cyclist crossing structures.

8.2.11. LTN 1/20 emphasises the fact that poor cycling infrastructure discourages cycling and wastes public money. ECC is concerned that insufficient account has been taken of the need for directness - one of the LTN1/20's core design principles as summarised in 4.7.2.

8.2.12. In the council's view putting cycling and walking at the heart of transport, place-making, and health policy, as set out in Gear Change, does not appear to have been uppermost in the A12 DCO scheme's design process.

8.2.13. Although ECC has been consulted on the A12 widening scheme's proposals for walking, cycling and horse riding during the development of the scheme, a written record of all the opportunities for improvement identified by key stakeholders, as required by the WCHAR process, has not been provided. In addition, although requested by ECC, a copy of the WCHAR Review Report has not yet been supplied. As such, there is currently no record of a thorough and consistent process having been applied to the design of WCH facilities – one that assesses all identified issues and opportunities and takes appropriate account of these in the final design.

8.2.14. The council has a number of significant concerns regarding the WCH facilities proposed by NH as part of the A12 DCO scheme. These concerns are outlined below, in general terms, with specific issues highlighted on a location-by-location basis in Section 8.3.

8.2.15. There are five locations where staggered signalised cycle crossings have been proposed in the DCO scheme. This is not best practice and should be avoided according to LTN1/20. Staggered crossings require cyclists to make tight zig-zag manoeuvres and stop in the middle of crossings, which reduces directness, adds delay and will put people off using the facilities.

8.2.16. None of the active mode overbridges (for cycling and walking/horse riding) have been designed in full accordance with the recommendations outlined in LTN1/20. The overbridges in the General Arrangement drawings all have zig-zag ramps on one or both sides, which are inherently indirect, and turning radii that are too tight to allow cyclists to

maintain momentum. NH has not demonstrated that other ramp arrangements more in line with LTN1/20 have been thoroughly investigated, or provided suitable evidence to justify ruling other options out.

8.2.17. Insufficient detail has been provided in the General Arrangement plans to allow the council (and other interested stakeholders) to properly review the WCH facilities proposed at junctions 19, 21 and 24.

8.2.18. The design of the 'gateway' overbridges at A12 Junctions 19 and 25 are considered by the Council to be too utilitarian. Unlike bridges on similar schemes such as the A14 near Cambridge, the proposed structures do not contribute positively to the sense of place and are not befitting of their status as 'iconic' structures in the sense envisaged in LTN 1/20.

8.2.19. Opportunities for providing relevant improvements in cycle provision as part of the scheme have not been investigated sufficiently. The council has consistently highlighted locations where direct cycle links or improved facilities would help to encourage cycling in the vicinity of the scheme, however, no evidence has been provided, in the form a WCHAR Review Report, to demonstrate that these opportunities have been thoroughly assessed.

Passenger transport

8.2.20. The council supports the need to provide more capacity on this stretch of the A12, for the benefit of all road users. Notwithstanding this and the Government's acknowledgement that at a strategic level there is a compelling need for the continued development of the national road network, the options assessment undertaken as part of the project and summarised in Chapter 3 of the Environmental Statement seemingly gave little consideration to public transport alternatives or to highway-based options which included material provision for passenger transport (such as, for example, one of the lanes being used as a dedicated bus lane). The council believes there is scope for the scheme to provide benefits to passenger transport over and above that currently proposed.

8.2.21. We recognise that NH's assessment of the affected bus network was undertaken when the data used may have been representative at the time of the DCO submission. Recent changes to the bus service numbers and their respective routes means this assessment is now out of date and should be revisited during detailed design. For example, the National Express Service 250 is missing, the introduction of bus service 370 and removal of bus service 40.

8.2.22. We welcome the proposed 'Public Transport Forum' as a method to communicate and review NH's proposal during the construction period, however insufficient detail has been provided upfront to determine that the adverse impact on bus services during the construction phase will only be small. It is very likely bus journey times will increase as a result of temporary traffic management, especially during peak period, thereby making bus journeys less attractive to potential users. Further mitigation should be considered during the construction phase to provide reliable journey times for bus services. Example includes permitting bus services to travel through road closures where it is safe to do so and providing bus priority areas where practical.

8.2.23. With regards to the future bus conditions during operation, there are further opportunities around the A12 where NH could improve the accessibility to the bus network as expected by paragraph 3.20 in the NPSNN. This includes reinstating disused bus stops which were previously unsafe to use due to the high traffic volumes along the existing A12. The council is currently developing a bid for realising some of the improvements to the bus network made possible by the scheme, for potential delivery as part of NH's Designated Funding programme, and we hope that this will be successful.

Traffic modelling uncertainty

8.2.24. As explained previously the council has engaged over an extended period with NH on a wide range of matters, and this has included the strategic and associated local highway junction modelling work which has been carried out by NH both to support the development of the scheme proposals, and subsequently to test and quantify the impacts of the proposed scheme on both the strategic and local highway networks. The local impacts which have been forecast and subsequently reported on within the DCO application (principally the Transport Assessment (TA) and Combined Modelling and Appraisal Report (ComMA)) are of critical importance to the council's appraisal of the proposals.

8.2.25. We recognise and understand that traffic modelling work has to be based around a series of assumptions and selected 'fixed' points in time, so that the anticipated changes between a base year (where calibration and validation can be carried out on the basis of real world data) and identified future years can be calculated with an acceptable degree of confidence. However, the base year modelling can only ever represent a "snapshot" of existing behaviour, and the methods used to represent different types of expected changes in total demand for travel in future years, and the distribution of the corresponding trips to the

modelled road network, mean that all modelling by necessity involves a degree of uncertainty.

8.2.26. The magnitude of this uncertainty, and the complexity of interactions within different models, for a project of the scale of the A12 widening scheme means that mitigations which are designed and accepted at the DCO stage may not represent the most appropriate measures by the time they are physically in a position to be implemented. Just as importantly, locations which are observed within the modelling to fall close to accepted thresholds for mitigation, but not to cross them, may in reality be found to be affected to a greater degree once the scheme is operational, and in some instances this may trigger increased delays and/or safety concerns which the council as local highway authority will need to address.

8.2.27. The concept of applying a 'monitor and manage' approach to enable scheme developers to react appropriately to these types of challenge is endorsed within the new DfT Circular 01/22, which sets out how NH will engage in plan-making and decision-taking to support the delivery of sustainable development. As such we would wish to see a practical implementation of the spirit and intent of Circular 01/22 via appropriate commitments from NH at the DCO stage.

8.2.28. At the current point in time we are awaiting a response to various queries we have raised regarding the traffic modelling that has been completed to inform the scheme's assessments. We are concerned that the strategic model may be underrepresenting existing congestion at some locations, amongst other issues, and this could be skewing the forecasts. If this is the case, the actual impacts of the scheme on the performance of some parts of the local network may be larger than expected

8.2.29. We would stress that we are not advocating any wholesale re-modelling or re-assessment at later stages of the scheme's progression, as is set out in our comments on monitoring (below); we accept that the strategic models and associated local junction models have been constructed and validated to appropriate standards, as described within the TA and ComMA. We consider that these models give a good indication of where mitigation on the local highway network is most likely to be required, and also that the models additionally identify specific locations and corridors where the current assessment shows that impacts are expected to be close to accepted mitigation thresholds. It is these locations, once the issues of uncertainty are factored in, that we consider should form part of the specific monitoring arrangements to be put in place.

Monitoring of scheme effects

8.2.30. In recognition of the inherent uncertainty in the traffic modelling as noted above, we believe there is a case for NH committing to monitoring the actual impacts of the scheme at a number of agreed locations on the local highway network and making the monitoring data available to interested parties.

8.2.31. Furthermore, we believe that if this monitoring indicates the scheme is having a material adverse and unanticipated impact at the agreed locations, NH should commit to working with ECC as the local highway authority to investigate and address the impact. There is precedent for this. The Silvertown Tunnel Order 2018 requires Transport for London (TfL) to implement a comprehensive monitoring programme and subsequently to develop and implement in consultation with the local highway authorities any measures which are necessary to mitigate adverse impacts (Requirement 7(10)).

8.2.32. Indeed, it goes further, in that it also requires TfL to undertake an updated assessment of the scheme's impacts prior to opening and using this assessment to, inter alia, determine the need for mitigation measures on the local highway network.

8.2.33. Although both are major highway projects, we recognise that they are not comparable and there are significant differences between the two – not least that the Silvertown Tunnel is a new (as opposed to upgraded) highway link and it includes a road user charge which will also cover the Blackwall Tunnel. Nonetheless, the principle remains that forecasting the impacts of a major highway scheme is inherently difficult, the modelling is based on many assumptions and there should be an acceptance that the actual impacts of the scheme in operation could be materially different.

8.2.34. To be clear, the council is not asking that NH undertake an updated assessment of the scheme's impacts prior to opening or that a detailed approach to determining what is and what isn't a material scheme effect be developed now. What we are asking is that NH agree to monitor the scheme's operational effects at specific locations of concern and commit to examining any causes for concern for an agreed period post-opening.

8.2.35. The fact that we are still awaiting responses to the various queries we have raised regarding the modelling adds weight to our request for the actual impacts to be monitored and the data made available to ECC and other parties. We note also that a number of stakeholders have raised concerns that forecast traffic flows on some local roads have changed in some cases significantly between the 2021 statutory consultation (June 2021), the 2021 supplementary consultation (November 2021) and the DCO application (August 2022), with

little explanation provided for the changes. While we understand and accept that the flows have changed as the traffic model has been updated and refined, some stakeholders understandably have concerns about the considerable reductions in traffic flows and by extension the accuracy of the forecasts. Agreeing to a monitoring programme may help to reassure some stakeholders on this point.

8.2.36. We believe the monitoring programme should include the monitoring of traffic and air quality, for a minimum of one year pre-opening and three years post-opening, at the following locations:

Location	Suggested nature of monitoring
B1137 Main Road, Boreham	Traffic monitoring (all modes) and air quality (NO^2) monitoring
The Street / Maldon Road (Duke of Wellington) junction, Hatfield Peverel	Traffic monitoring (all modes) and air quality (NO^2) monitoring
Little Braxted Road, Little Braxted	Traffic monitoring (vehicles)
Braxted Road / Braxted Park Road	Traffic monitoring (vehicles)
B1023 Inworth Road, Inworth	Traffic monitoring (vehicles)
Kelvedon Road, Messing	Traffic monitoring (vehicles)
B1023 Church Road, Tiptree	Traffic monitoring (vehicles)

8.2.37. We are happy to set out in more detail our thinking on the monitoring programme, including specific monitoring locations, type of monitoring equipment, the means of making data available and an indication of costs. We would like our request for monitoring and how it could be secured through to DCO be considered at the examination, as well as the approach for dealing with any unforeseen adverse impacts that the monitoring may reveal.

Construction impacts

8.2.38. Minimising the construction impacts of the scheme particularly on the local road network remains an important issue for ECC, not least in the context of significant concern locally about the considerable impacts the current works between Junctions 25 and 26 (as part of the concrete roads reconstruction programme). Works are also currently underway at the A12's junction with the M25 (M25 junction 28), albeit the impacts on the road network are relatively small, and we understand NH are also planning to commence works to reconstruct the Margaretting bypass (junction 13 to 15) imminently.

8.2.39. Along the Essex stretch of the A12 corridor there are few suitable alternative diversion routes on the local highway network when the A12 is closed to traffic, meaning that diversions such as those currently in place between junction 25 and junction 26 northbound currently have significant impacts on the local network. It will be important that the need for diversion of strategic traffic onto the local road network is minimised as far as possible, albeit we accept that there will be a need for some diversions, and as noted in paragraph 8.2.22 minimising the impacts on bus services in particular should a be a priority.

8.2.40. Ongoing engagement on construction aspects is needed, and we welcome NH's commitment to this. We have reviewed the proposed traffic management forums set out in Table 3.1 of the Outline Construction Traffic Management Plan and would like to discuss in more detail the purpose of these forums, their terms of reference and when they will be set up to satisfy ourselves that they will be effective.

8.3. Location specific issues

8.3.1. In ECC's view the interface between the SRN and the local highway network is vitally important. This applies to the new and altered A12 junctions and also the roads that lead to, or are affected by, those junctions. It is essential that these junctions and roads work both from an SRN and a local highway network perspective. The council currently considers this not to be the case in all areas affected by the scheme.

8.3.2. The council is keen to ensure that the benefits of the A12 scheme are maximised, but also that the disbenefits to Essex communities, businesses and visitors are minimised. While NH may take the position that no further substantive changes to the junctions are needed, the council considers that since NH first shared any real detail on the junction arrangements as part of the summer 2021 statutory consultation very limited changes have been made in response to representations from stakeholders.

8.3.3. Fundamentally, the council is concerned that once the scheme is complete we will be left with material issues (including road safety issues) that could have been designed out that we will not be in a position to address due to a lack of funding. Noting as set out in paragraph 3.2 that the A12 has never before been subject to strategic improvements of the nature now being proposed, the council believes this is a once in a lifetime opportunity to ensure the scheme works for both an SRN and local road network perspective.

8.3.4. There are a number of locations where the council has concerns regarding one of more of the following issues:

- adverse impacts of increased traffic on local roads
- likely traffic speed exceedances on roads with proposed speed limit reductions
- lack of road width improvements at key locations (including bridges)
- insufficient evidence of traffic impacts on junction capacity
- lack of sensitivity testing to test impact of potential variances in journey time assumptions

8.3.5. The issues are described in more detail on a location-by location basis, from south to north, below.

Junction 19

8.3.6. The council is generally content with the changes being made to junction 19, but considers the current lack of understanding regarding future changes that may be needed in the longer term is an issue. In addition we have several concerns about provision for pedestrians and cyclists at and in the vicinity of the junction.

Compatibility with wider development plans

8.3.7. The proposed improvements at junction 19 are not demonstrably compatible with wider development proposals in the vicinity of the junction, including the longer-term plan to dual the proposed Chelmsford North East Bypass (CNEB). Although the dualling of CNEB is not committed, it could play a key part in supporting planned growth in the area. Better understanding is required of the compatibility of junction 19 with wider development proposals in the vicinity of the junction, including CNEB. The council acknowledges that this is not within the scope of the current project but is seeking agreement from NH that joint consideration be given to what further changes may be required to the junction in the future – post completion of the A12 widening project – and how these could be delivered.

Generals Lane junction – pedestrian/cycle crossings

8.3.8. There are two locations where cyclists are required to turn 90 degrees, when travelling through the Generals Lane junction. However, it would appear that there is insufficient room on the splitter islands for cyclists to make this manoeuvre easily, particularly when pedestrians are present on what appears to be a shared footway/cycleway. This does not accord with LTN best practice.

8.3.9. The General Arrangement drawings should be amended to provide at least 4m external radii turns for cyclists within the Generals Lane Roundabout splitter islands. The traffic

modelling should be updated if these amendments lead to a change in the provision for motorised vehicles at the junction.

Paynes Lane WCH overbridge

8.3.10. The design of the southern Paynes Lane overbridge ramp has a zig-zag arrangement. This does not accord with best practice. Paynes Lane bridge is one of two key 'gateway' overbridges on the A12 widening scheme (the other being at Marks Tey), where future growth in pedestrian and cycle usage is particularly likely if it can be encouraged sufficiently.

8.3.11. In order to ensure that Paynes Lane overbridge provides an attractive, pleasurable experience, that will encourage future growth in active travel, the bridge should be redesigned to:

- Reduce the number of foldbacks on the southern ramp to an absolute minimum - the aim should be to provide something similar to the Belfast example provided in LTN1/20, with the design diluted from this only if absolutely necessary
- Have 4m minimum actual turning radii for cyclists in both directions i.e. both on the outside and inside of every bend
- Be segregated, if possible, with an overall width of 5.5m on the bridge decks and approach ramps (2m footway, 3m cycle track, 0.5m clearance on one side), to ensure that they have adequate capacity for future growth in pedestrian and cycle usage

8.3.12. While clearly a matter of subjectivity, ECC considers that the appearance of the proposed Paynes Lane overbridge is too utilitarian. The design of the structure does not currently result in an improved sense of place and fails to make the most of the opportunity to promote active travel. The Council believes that the Design Principles document should be amended to include further detail on how structures will be designed to a high quality, and that this document should be certified by the DCO. ECC has requested to see evidence of the Design Council review of the bridge however this has not yet been provided.

B1137 walking/cycling link from Paynes Lane to Boreham

8.3.13. The proposed off-carriageway pedestrian/cycle provision linking the new Beaulieu Rail Station (currently in construction) to Boreham village via Paynes Lane overbridge will be shared use, with a width that doesn't accord with LTN1/20 guidelines between Paynes Lane and Boreham Village

8.3.14. The Paynes Lane overbridge will provide a high value link from Boreham village and surrounding villages both over to the new station and into new open access areas which have onward WCH routes. It is important to ensure that the cycling and walking facilities

encourage modal shift to active modes, as the A12 widening scheme is expected to increase traffic on this section of carriageway.

8.3.15. The existing shared use footway/cycleway on the southern side of Main Road should be widened to 3m to better accord with LTN1/20 guidance. Narrowing of the main vehicular carriageway to accommodate the wider footway cycleway should help to reduce general traffic speeds, which is likely to be beneficial in safety terms.

Removal of junction 20a and 20b, and impacts on the B1137

8.3.16. The council accepts the reasoning put forward by NH for removing the existing junctions 20a and 20b, noting that these junctions do not comply with current standards in DMRB. However a consequence of removing the junctions is that traffic on the B1137 will increase and we consider that merely reducing the speed limit is not sufficient for mitigating the impacts.

Impacts on Boreham village

8.3.17. NH's modelling indicates that the proposed scheme would lead to an increase in traffic on the B1137 (Main Road) through Boreham in the AM peak hour. There are concerns that an increase in traffic along this route would increase delay for local residents, negatively affect vulnerable road users and adversely affect road safety.

8.3.18. The number of vehicles predicted to use Main Road has been modelled assuming reduced speed limits through Boreham village and between Boreham and Hatfield Peverel. If these speed limits are not adhered to, which the council considers is likely given the nature of the road, it is likely that the B1137 will be more attractive as a route for drivers heading to the south from Hatfield Peverel and Maldon district. This could lead to even higher traffic increases in Boreham. The council is concerned about the likelihood of poor compliance with lower speed limits, in the absence of other measures to reinforce them.

8.3.19. In order to reduce the likelihood of traffic increases over and above those forecast in the traffic modelling and improve safety for local residents, the council considers it appropriate, as a minimum, for the following measures to be included in scheme:

- Average speed cameras covering the section of Main Road from the southern end of Boreham village to the existing A12 J20a on-slip
- A new zebra or signalised pedestrian crossing with road narrowing in the vicinity of Boreham Co-op
- Localised road narrowing at a number of locations, including the entrance to Boreham from the south and near to the pedestrian entrance to the recreation ground

- Softer measures, such as place-making signs and safety signs designed by local children in appropriate locations along Main Road within the village of Boreham

8.3.20. We understand this view is shared by a number of other stakeholders, including Chelmsford City Council, Boreham Parish Council and Essex Police.

Impacts on the B1137 between Boreham and Hatfield Peverel

8.3.21. For the same reasons as outlined above, the council considers that simply reducing the existing speed limit on this stretch of the B1137 (from a mix of 50 mph and 60 mph currently to 40 mph) is not adequate, and additional measures are required to help ensure compliance. It should be noted there are few frontages along this stretch of the road and the likelihood of drivers exceeding the speed limit without further measures is considered high.

Junction 21

8.3.22. The council supports the proposal to create a new all-movement junction between Hatfield Peveral and Witham in the form of junction 21. We are concerned about the impacts on a nearby junction and believe this needs to be monitored. We welcome NH's agreement to change the design of junction 21 such that it could more readily accommodate connection with a new Maldon link road in future and wish for this change to be secured through the DCO.

Maldon Road / The Street junction

8.3.23. There is an existing problem with queueing and delay at peak times on the approaches to the Duke of Wellington junction (Maldon Road/The Street), which all vehicles travelling between Hatfield Peverel and the new junction will pass through. The modelling carried out by NH indicates that the A12 widening scheme would result in a modest improvement to the overall operation of the Duke of Wellington junction in both the 2027 and 2042 future-year scenarios. This improvement is not observed on all arms of the junction, however; the Maldon Road arm in particular would experience higher delay and queues with the A12 scheme in place.

8.3.24. As outlined above, the modelling of future 'with' and 'without' scheme traffic flow conditions on local roads is subject to some uncertainty. A request for further journey time information from the strategic model was made to NH in November 2022, but this has not yet been received.

8.3.25. It is the council's view that, subject to receipt and analysis of the requested journey time information, the increases in modelled delay and queuing on Maldon Road do not in themselves represent a "severe" impact. However, these conclusions are subject to receipt and analysis of the requested journey time information.

8.3.26. A new 'link road' between Maldon Road and the A12, to bypass the Duke of Wellington junction, has been a longstanding aspiration for some stakeholders to alleviate the current issues at the roundabout and support planned growth in Maldon and Heybridge. NH has provided a note to show what effect a possible future link road from Maldon Road to junction 21 might have on junction 21. They have concluded that the current embankment at the start of the junction 21 on-slips could be redesigned to accommodate future widening, which would further help the delivery of a link road.

8.3.27. The council believes that the design of junction 21 should be amended to include both the widening of the on-slip embankments and the widening of the actual on-slip carriageways, in order to prevent unnecessary works to the junction in the future. Although NH has confirmed that it will amend the design of the junction by widening the embankments and paving the widened embankments from the outset, we request that this change is secured through the DCO. We suggest a drawing is produced showing the new design including the paved embankments and that this drawing is referenced within the DCO as the basis for the final design.

WCH provision – Wellington Bridge

8.3.28. The General Arrangement drawings and plans provided by NH are insufficiently detailed to enable the council to understand how existing WCH facilities in the vicinity of the new Wellington Bridge will connect in to those proposed as part of the A12 scheme. It is not clear what facilities are being provided for horse riders to/from and on Wellington Bridge or how pedestrians, cyclists and horse riders will cross the B1137 between the Maldon Road/The Street junction and the bridge itself.

8.3.29. The Council is concerned that safe WCH crossing facilities to the south of Wellington Bridge have not been included as part of the scheme and that it may not be possible to provide them within the red line boundary. This detail should be provided as part of the DCO application, and the red line boundary amended, if required.

Cycle route between Witham and Hatfield Peverel

8.3.30. Due to the importance of the walking and cycling link between Witham and Hatfield Peverel, it is essential that a continuous and segregated walking and cycling route of adequate width is maintained between the two settlements (together with confirmation of the maintenance/reinstatement of PROWs). The new provision should be lit to improve accessibility during the hours of darkness. This section of the A12 is currently well used by walkers and cyclists and usage is set to increase in the future with planned housing expansion both in west Witham and Hatfield Peverel.

8.3.31. It is the council's view that the cycleway between Wellington Bridge and Witham should be segregated rather than shared use. The number of cyclists and pedestrians is likely to increase significantly in the future, as the housing developments in Witham are built out. The space is available for segregation; it would provide a safer facility in this location and help to encourage active travel more.

Gershwin Boulevard A12 overbridge

8.3.32. The Gershwin Boulevard overbridge ramps have a zig-zag arrangement. This does not accord with best practice. In addition, the turning radii in the DCO drawings are too small to allow cyclists to maintain momentum.

8.3.33. In order to ensure that the design of Gershwin Boulevard overbridge is more suitable for the needs of cyclists, we consider that NH should:

- Reduce the number of foldbacks on theh ramps, where possible
- Provide evidence for discounting ramp layouts with fewer foldbacks that the current proposal, in the form of option drawings and explanations
- Ensure that all turns have a minimum external radius of 5m

Junction 22 to junction 24

8.3.34. The council largely supports the design of the new junction 22, save the current design of the Little Braxted Lane overbridge. The need for the removal of junction 23 is understood but the council is concerned about the extent to which NH have taken into account plans for upgrading the A120 between Braintree and the A12.

8.3.35. As set out above the council has significant concerns about the approach to de-trunking generally. Specific comments on the de-trunked section between junction 22 and Rivenhall End are set out below. Comments on other highway and structure-related aspects of the scheme between junction 22 and junction 24 are also documented below.

De-trunked section between junction 22 and Rivenhall End West

8.3.36. The council's view is that the dual carriageway section between junction 22 and Rivenhall End Western Roundabout currently proposed to be de-trunked should be retained as dual carriageway but with one lane only on the eastbound carriageway. The remaining carriageway should be re-purposed with good off-road provision for active modes together with re-greening to be achieved by breaking up redundant sections of the existing carriageway and burying with earth/topsoil, thereby creating suitable growing conditions for different planting types to contribute towards carbon offset. In addition, and in order to protect more vulnerable road users, the council is recommending that the speed limit be reduced to 40mph.

8.3.37. The council believes that land acquired by the A12 scheme between Witham and Rivenhall End would provide an opportunity for renewable energy facilities; land should be set aside for a potential future electric vehicle rapid charging station, with provision for ground mounted solar PV and/or on-shore wind generation.

De-trunked section between Rivenhall End West and Rivenhall End East

8.3.38. The next section of de-trunked A12 is between the proposed Rivenhall End West and Rivenhall End East roundabouts. The council recommends that one side of the dual carriageway (likely to be the current southbound carriageway) should be retained as single carriageway, with the other side re-purposed for green infrastructure and improved provision for pedestrians and cyclists.

8.3.39. In combination the reduction to single carriageway, the speed limit could be reduced to 30 mph to protect vulnerable road users. A significant opportunity exists to remove existing severance and improve opportunities for community cohesion, which would benefit from lower vehicle speeds to facilitate this

8.3.40. The council accepts and agrees with NH's proposed closure of Oak Road from the existing A12, leaving pedestrian and cyclist access only. The council also welcomes the introduction of a new Henry Dixon Road junction to the south of the de-trunked A12. However, as mentioned previously in this section and given that the de-trunked A12 will be lightly trafficked, the opportunities for passenger transport facilities must not be lost.

8.3.41. From a design perspective and given the low traffic flows, the council is suggesting a value engineering exercise to reduce/redesign the proposed roundabout to the west of Rivenhall End, and remove the roundabout to the east of Rivenhall End, with potential savings going some way towards offsetting the costs of repurposing one of the carriageways.

8.3.42. In terms of additional features and to support removal of existing severance, a straight across segregated cycle and pedestrian crossing of the de-trunked A12 should be provided in Rivenhall End. The forecast traffic flows do not justify a staggered crossing.

Little Braxted Lane overbridge

8.3.43. The design of southern bridge ramp does not accord with best practice outlined in LTN 1/20. It should have fewer zig-zag foldbacks, if possible, and 5m minimum external radius turns, where ramp sections change direction. In addition, it is unclear whether the turns on the northern ramp have suitable radii.

8.3.44. In order to ensure that the design of Little Braxted Lane overbridge is more suitable for the needs of cyclists, we consider that NH should:

- Reduce the number of foldbacks on the southern ramp, if possible
- Provide evidence for discounting ramp layouts with fewer foldbacks than the current proposal, in the form of option drawings and explanations.
- Ensure that all turns on both ramps have a minimum external radius of 5m

Eastways / Colchester Road pedestrian and cycle crossing

8.3.45. The cycle crossing of Colchester Road is staggered, which does not accord with LTN1/20 guidance. NH have proposed to provide a straight-across cycle crossing at detailed design stage, but traffic modelling has not been provided to demonstrate the impact of a straight-across cycle crossing on the operation of the junction.

8.3.46. It is unclear, whether traffic delay with a straight across cycle crossing would be excessive, which could lead to traffic impacts not forecast in model.

8.3.47. NH should provide traffic modelling to demonstrate that the impact of straight across cycle crossings would be acceptable (with separate staggered pedestrian facilities, if required). The DCO drawings should be amended to include a straight-across cycle crossing and any other amendments required to ensure satisfactory performance for motorised vehicles.

Henry Dixon Road / Braxted Road crossing

8.3.48. The cycle crossing is staggered, which does not accord with LTN1/20 guidance. NH have modelled the impact of providing a straight-across crossing for both pedestrians and cyclists, but the results show that the impact would be overly detrimental to motorised traffic. This would probably create additional delay to traffic heading from Tiptree to the

A12 via Junction 22 which, in turn, would lead to more traffic heading to Junction 24 via Inworth Road.

8.3.49. NH should provide traffic modelling to demonstrate the impact of providing a straight-across cycle crossing with a separate, staggered, pedestrian facility. The General Arrangement drawings should be amended to include a straight-across cycle crossing and any other amendments required to ensure satisfactory performance for motorised vehicles.

Snivellers Lane overbridge (by Essex County Fire and Rescue Service HQ)

8.3.50. The Snivellers Lane overbridge ramps do not accord with best practice outlined in LTN 1/20. They should have fewer zig-zag foldbacks, if possible, and 5m minimum external radius turns, where ramp sections change direction.

8.3.51. In order to ensure that the design of Little Braxted Lane overbridge is more suitable for the needs of cyclists, we consider that NH should:

- Reduce the number of foldbacks on the southern ramp, if possible
- Provide evidence for discounting ramp layouts with fewer foldbacks than the current proposal, in the form of option drawings and explanations.
- Ensure that all turns on both ramps have a minimum external radius of 5m

Rivenhall End to Kelvedon footway/cycleway

8.3.52. Whilst the council recognises a consistent provision of footway/cycleway between Rivenhall End and notwithstanding the comments above regarding de-trunking further clarification is needed on what the proposed provision will be. The council at the minimum expects upgraded walking and cycling facilities should be provided along whole length of de-trunked section to a minimum of 3m wide shared use 2-way cycle/footway.

Braxted Park Road – modelled journey times

8.3.53. A key factor in determining the impact of the A12 scheme on both Braxted Park Road (Rivenhall) and Inworth Road (Tiptree) is the time that it will take drivers to travel from Tiptree to the A12 via Braxted Park Road. In the strategic traffic model, journey times have been calculated based on typical highway link parameters. However, the council is concerned that the traffic model is likely to be underestimating the journey time on Braxted Park Road, because the existing road conditions are significantly slower than standard link parameters would predict. This is due to two localised constraints that have not been specifically modelled, namely Appleford Bridge and the junction of Maldon Road with Braxted Park Road. The implications of this are set out below.

Appleford Bridge

8.3.54. Appleford Bridge forms part of the route via Braxted Road and Braxted Park Road which link Tiptree and the surrounding areas with Rivenhall End and junction 22. The summary of flow change data provided within the TA report indicates that traffic using the bridge is expected to reduce (by 78 vehicles) in the AM peak, but to increase by 114 vehicles in the PM peak in 2027 with the proposed A12 scheme in place; the use of these routes has previously been cited by NH as one of the reasons why impacts to Tiptree and Inworth specifically are predicted to be lower than would potentially be expected in the context of the wider scheme.

8.3.55. The existing bridge structure is narrow and traffic (particularly larger vehicles) is required to filter by direction in order to pass by, and consequently thee have been a number of instances of damage from vehicle strikes. It is not clear from the TA and ComMA as to whether the constraints formed by the bridge are represented in the strategic model; if this is not the case, there is potential for the model to be assigning a greater volume of traffic along the route than would use it in practice, due to the journey time in the model being lower than that of vehicles making the corresponding journey in reality.

8.3.56. Notwithstanding the modelling issues, it is considered from a practical perspective that the bridge should be widened to enable at least one car and one larger vehicle to pass concurrently, so that the potential increases in delay at the bridge associated with its current form are not magnified by the expected uplift in vehicle flows which will be associated specifically with the implementation of the proposed A12 scheme. It is additionally considered that the provision of a widened bridge structure would reduce the likelihood of drivers being discouraged from using the routes which it served and instead diverting towards junction 24, thereby increasing traffic flows through Tiptree and Inworth.

Maldon Road / Braxted Park Road junction

8.3.57. Another potential source of journey time underestimation in the strategic model is the delay experienced by drivers on the approach to the existing Maldon Road/Braxted Park Road junction at peak times. The council's ongoing monitoring of traffic speeds using Traffic Master data shows significant AM peak period delay is experienced by vehicles approaching he junction from the north-east. There is no space within the junction for vehicles turning right into Braxted Park Lane to wait without blocking straight ahead traffic and this increases journey time for all vehicles heading south-west on Maldon Road; including those wishing to gain access to the A12 at Rivenhall End.

8.3.58. The council has asked NH to provide further information on journey times from the A12 strategic traffic model, in order to assess whether delays at the Maldon Road/Braxted Park Road junction are reflected adequately in the model. If they are not, the impact of traffic on Inworth Road could be higher than forecast. This might necessitate capacity improvements at the junction as part of the A12 scheme, to prevent the impact on Inworth Road from becoming excessive.

Removal of junction 23

8.3.59. In the DfT's Road Investment Strategy 2: 2020–2025 announcement, it stated that the A12 scheme 'will need to take into account evolving proposals for the A120 Braintree to A12'.

8.3.60. The council is concerned that design changes made to the A12 scheme during its development might not have taken sufficient account of the evolving A120 scheme and, in so doing, might have added significant unnecessary cost to the A120 project or negatively affected its environmental impact.

8.3.61. The council has asked NH for evidence to confirm that the that the future delivery of the optimal A120 scheme will not be jeopardised by the design A12 scheme. However, no detailed evidence has been provided. As such, this issue remains a concern to the council.

Junction 24

8.3.62. The council has engaged with NH on the proposed arrangement for the new junction 24 for some time. NH may note that in response to the statutory consultation the council supported the location and siting of junction 24, and for the avoidance of doubt we remain supportive of an all-movement junction which addresses the anomalies with the current arrangements at junctions 24 and 24. We made clear however in the same response that insufficient information on traffic flows was available and questioned the ability of the local network to work efficiently with the new junction.

8.3.63. The plans as they stand will lead to an expected increase in traffic in the villages of Inworth, Messing and Tiptree, as evidenced in the TA. The council considers that further mitigation is required to address adverse impacts on these communities and help ensure that traffic uses the most appropriate routes to access and egress the junction.

8.3.64. The council has three main concerns about the proposals for Junction 24 in their current form; namely the design of the new Inworth Road roundabout, the need for measures to ensure the B1023 is able to safely accommodate the expected increase and traffic and measures required to reduce the potential for 'rat-running' on local roads.

Inworth Road roundabout

8.3.65. On the first point, the council considers that the current design of the new Inworth Road roundabout (which will become part of the local highway network) is unsatisfactory and may lead to operational issues for which ECC will be responsible. Specifically, the current design (as shown on drawing HE551497-JAC-HGN-5_S3_J24-SK-C-0001) includes certain relaxations from DMRB standards in terms of geometry and does not include provision of vertical or horizontal geometries for the four junction arms; when this design is assessed against the current 50mph speed limit on Inworth Road, we are concerned that there will be safety issues arising which it would then be left for ECC to have to mitigate.

8.3.66. As a minimum, we consider that the design should either be made fully consistent with DMRB requirements for a 50mph road, or the current speed limit should be reduced to 30mph on the approaches to the roundabout, and the proposed scheme should include the necessary measures to achieve this. While we recognise the physical constraints that exist in this location we have seen no evidence to suggest that NH have assessed a suitable range of options for the design of this roundabout, despite requests for NH to share details of the optioneering for this junction they have undertaken.

Measures to support increased traffic on the B1023 (Inworth Road)

8.3.67. On the second point, with specific regard to the widening of pinch points, we accept that the traffic modelling indicates an overall reduction in peak hour traffic using Hinds Bridge in 2026 and note that for these reasons NH does not believe that any interventions are required in connection with this bridge. We nonetheless remain of the view that this structure should be widened so that it can accommodate two large vehicles passing in opposite directions because the 2042 traffic data indicates that there will be a 2% increase in AM and 9% increase in PM peak traffic at this location.

8.3.68. As the busier peak hours are the times when incidents are most likely to occur, the increase in peak hour flows, in combination with the expected profile of traffic (including HGVs), means that delays associated with the constraints of the current structure are likely to increase and we believe this would potentially have a significant impact upon journey times and traffic routeing.

8.3.69. The council accepts that a knock-on effect of widening pinch points on the route may be that vehicle speeds increase, and for this reason measures for encouraging compliance with the proposed speed are expected to be required. We also believe further walking and

cycling improvements should be included in the proposals to offset the impacts of increased traffic on this route on these users.

Measures to reduce impacts on Messing and Tiptree

8.3.70. On the third point, the likelihood of increased traffic through local villages issue is understandably a significant concern for the local communities impacted. The issues already raised regarding uncertainty with the traffic modelling forecasts make this a particular concern. The council has undertaken work on a range of 'subtle' interventions which we believe could help to reduce the likelihood of traffic using inappropriate routes as a short cut / through route, ensure the B1023 is better able to accommodate increased traffic and mitigate the impacts of the junction on local communities.

8.3.71. We have produced a report on these interventions which has been shared with NH, and we are hopeful that NH will agree to further investigate and deliver some of these interventions. In summary these interventions could include:

- Village entry gateways for Messing village
- "Unsuitable for HGVs" signage on Kelvedon Road and Harborough Hall Road
- Narrowing of the entries to Oak Road (both the eastern and western ends), through tightening of entry radii and appropriate landscaping.
- A 20mph speed limit on Oak Road and associated side roads, with traffic calming measures, as appropriate
- Improved signage at either end of Oak Road to guide through-traffic to the B1022/B1023 junction
- Widening of pinch points between Perrywood Garden Centre and the B1022 to a minimum carriageway width of 6.1m in line with approach to other pinch point widening proposals
- Average speed cameras on the B1023 to the south of the new Inworth Road roundabout, to increase the likelihood of adherence to the proposed 30mph speed limit in both directions
- A fixed speed camera on the southbound approach to the new Inworth Road roundabout

WCH provision

8.3.72. The forecast increase in vehicular traffic on Inworth Road will likely make it even less appealing as a route for pedestrians, cyclists and horse-riders. NH has seemingly given limited consideration to improving facilities for these users on the road, albeit the council recognises that there are space constraints. As an example, insufficient detail has been

provided in the General Arrangement drawings regarding the design of the proposed footway/cycleway under A12 on Inworth Road and it is unclear how this will work.

8.3.73. The opportunity to provide a direct off-carriageway cycle route between Tiptree and Kelvedon in the future will be compromised by the fact that the current scheme makes no provision for such a route through the new junction 24

8.3.74. The council considers that protection of a route for a footway/cycleway should be provided, north-south from the southern extent of the red line boundary, passing through junction 24 under the A12, to the northern extent of the red line boundary. It is not clear currently what space provision will be made for this.

Ewell overbridge replacement

8.3.75. Although Ewell overbridge appears on the general arrangement plan for Ch. 26500 to 30700 (Drg. No. HE551497-JAC-LDC-SCHW-DR-C-0033) it has been omitted from the adjacent plan (Drg. No. HE551497-JAC-LDC-SCHW-DR-C-0034). The council requests that, for clarity, the DCO drawings are amended to confirm that this important WCH bridge is being constructed as part of the A12 scheme.

Junction 24 to junction 25

8.3.76. A new section of the A12 is proposed to be constructed between most of the length from junction 24 to junction 25.

De-trunked section between junction 24 and 25

8.3.77. Much like the section from Junction 22 to Rivenhall End, NH are proposing to hand the section of de-trunked A12 between Feering and Marks Tey to ECC as dual carriageway. This would form an additional 4.25 km of inappropriate dual carriageway over-provision.

8.3.78. In order to bring the proposals more into line with current national and local policy and strategy, the council has considered how the opportunity can be maximised particularly for active and sustainable modes of travel. For this section between Feering and Marks Tey, it is proposed by the council to retain one side of the dual carriageway as single carriageway and repurpose the other carriageway by providing high quality off-road provision for active modes and 'regreening'. This could be achieved by breaking up redundant sections of the existing carriageway and burying with earth/topsoil, thereby creating suitable growing conditions for different planting types to contribute towards carbon offset

8.3.79. In terms of junction provision, the council proposes simple T-junctions at New Lane, Wishing Well Farm and Easthorpe Road junctions, rather than roundabouts, which may provide some cost savings which in turn could go some way towards offsetting the costs of repurposing one of the carriageways.

8.3.80. The council agrees with revisions in access arrangements for Easthorpe Road and the provision of a new roundabout at New Lane (although this could be reduced in size). We also support the introduction of a consistent lengths of footway, however it is felt that this could go further in terms of provision of active modes.

Potts Green overbridge

8.3.81. The Potts Green overbridge ramps do not accord with best practice outlined in LTN 1/20. They should have fewer zig-zag foldbacks, if possible, and 5m minimum external radius turns, where ramp sections change direction.

8.3.82. In order to ensure that the design of the Potts Green overbridge is more suitable for the needs of cyclists, we consider that NH should:

- Reduce the number of foldbacks on the southern ramp, if possible
- Provide evidence for discounting ramp layouts with fewer foldbacks than the current proposal, in the form of option drawings and explanations.
- Ensure that all turns on both ramps have a minimum external radius of 5m

Junction 25

8.3.83. Considerable changes are proposed to the arrangement of junction 25, which provides an interchange with the A120 and to the local highway network. The A12 cuts through Marks Tey village, which is also fragmented by the A120, and care is needed to ensure the impacts of the SRN on this community are minimised as far as possible. Particular concerns raised by the community include the expansion of the A12 road closer to residential properties and that established landscaping and trees at the Old Rectory roundabout will be removed.

8.3.84. The new junction arrangement ties in with a section of the A12 which is to be de-trunked. The council's concerns on de-trunking have already been set out, but of note here is that the proposals as they stand would result in another large road running into Marks Tey. The council has several comments on the WCH provision in Marks Tey which are set out below.

A120 Coggeshall Road pedestrian and cycle crossing

8.3.85. The pedestrian/cycle crossing shown on the General Arrangement plans is a straight-across crossing. However, the traffic modelling outputs included in the TA are based on a

staggered crossing. NH has provided high level traffic modelling results for a straight-across crossing, but the detail is insufficient for the council to be confident that it would work satisfactorily. NH should provide traffic modelling to demonstrate that the impact of a straight-across cycle crossing would be acceptable (with separate staggered pedestrian facilities, if required).

Western junction – cycle crossing on Western Link

8.3.86. The proposed cycle crossing of the Western Link is staggered, which does not accord with LTN1/20 guidance. A straight-across cycle crossing should be provided, with separate staggered pedestrian facilities, if required.

8.3.87. NH should provide traffic modelling to demonstrate that the impact of a straight-across cycle crossing would be acceptable (with separate staggered pedestrian facilities, if required). The General Arrangement plans should be amended to include a straight-across cycle crossing and any other amendments required to ensure satisfactory performance for motorised vehicles.

A120 dumbbell link – pedestrian and cycle crossing

8.3.88. The General Arrangement plans show a staggered cycle crossing of the A120 dumbbell link, which does not accord with LTN1/20 guidance.

8.3.89. NH have modelled the impact of providing a straight-across crossing for both pedestrians and cyclists, but the high-level results provided are insufficient for the council to be confident that it would work satisfactorily. In addition, there is no guarantee that a straight-across crossing will be included at detailed design stage.

8.3.90. NH should provide more detail traffic modelling results to demonstrate that the impact of a straight-across cycle crossing would be acceptable (with separate staggered pedestrian facilities, if required). The General Arrangement plans should be amended to include a straight-across cycle crossing and any other amendments required to ensure satisfactory performance for motorised vehicles.

Marks Tey A12 Overbridge

8.3.91. The A12 overbridge at Marks Tey is one of two key ‘gateway’ overbridges on the A12 scheme (the other being at Paynes Lane), where future growth in pedestrian and cycle usage is particularly likely if it can be encouraged sufficiently. However, the DCO scheme ramps do not accord with best practice outlined in LTN 1/20, as they are not direct and do not allow cyclists to maintain momentum due to the tight radii turns.

8.3.92. The Council is keen to see the movement to the station given a high priority and a bridge that spans both the A12 and A120 could potentially provide this. NH has provided a written explanation as to why they do not consider an overbridge across both the A12 and A120 to be appropriate, however, no option drawings have been provided to enable the Council to concur with this conclusion. with a single overbridge does not appear to have been explored fully by NH. The Council has asked NH to provide drawings of the options considered, in order to be certain that a potentially beneficial option has not been missed.

8.3.93. In order to ensure that Paynes Lane overbridge provides an attractive, pleasurable experience, that will encourage future growth in active travel, the overbridge should be redesigned to:

- Reduce the number of ramp foldbacks to an absolute minimum - the aim should be to provide something similar to the Belfast example provided in LTN1/20 (which might include extending the bridge across the A120)
- Have 4m minimum actual turning radii for cyclists in both directions i.e. both on the outside and inside of every bend
- Be segregated, if possible, with an overall width of 5.5m on the bridge decks and approach ramps (2m footway, 3m cycle track, 0.5m clearance on one side), to ensure that they have adequate capacity for future growth in pedestrian and cycle usage

8.3.94. The council is also concerned that the appearance of the proposed Marks Tey overbridge is too utilitarian. The design of the structure does not currently result in an improved sense of place and fails to make the most of the opportunity to promote active travel. The council believes that the Design Principles document should be amended to include further detail on how structures will be designed to a high quality, and that this document should be certified by the DCO. The council has also requested to see evidence of a Design Council review of the bridge. However, this has not yet been provided.

9. Assessment of wider impacts

9.1. Air quality

9.1.1. The district authorities as opposed to ECC as the county council are the respective air quality authoties, so the council defers to the district authorities concerning the impacts of the scheme on air quality and any changes or mitigation that may be required.

9.1.2. Notwithstanding this, the council does consider that air quality is an important issues and that improving air quality requires a joined-up and collaborative approach. Partly in recognitition of the significant contribution that transport makes to poor air quality, the council is currently producing an Essex-wide air quality strategy and this will include proposals for more extensive air quality monitoring and the implementation of measures to improve air quality. One of the best ways of reducing vehicle-borne pollution is to encourage mode shift to public transport, walking and cycling, and it is important that the A12 widening project delivers in this respect.

9.1.3. The council also believes there is a need for air quality monitoring as part of the scheme, as set out in section 0, in recognition of the modelling uncertainty and the fact that forecast NO^2 concentrations are close to the the air quality objective.

9.2. Arboriculture

Policy Context

9.2.1. The scheme has been assessed in relation to para. 131 and para. 180 of the National Planning Policy Framework (2021), which recognise both the contribution of all trees to landscape character, mitigating for and adapting against climate change, and the role of veteran trees as irreplaceable habitat. The England Trees Action Plan (2021-2024) provides a commitment to protect trees outside of woodlands and to the retention and protection of ancient and veteran trees, and so the scheme has also been reviewed in light of this.

9.2.2. There are also a number of Local Plans and Supplementary Guidance Documents (relevant across the scheme as a whole).

9.2.3. Braintree District Council's Tree Strategy (2016) states that all development will be assessed in relation to British Standard 5837:2012 and that veteran trees 'need to be retained for the value they have for wildlife conservation and biodiversity of the District'. In addition, the Local Plan (2022) Policy LPP 63 outlines that development proposals must take available measures to ensure the protection and enhancement of the natural environment. Policy

LPP 64 states that 'proposals resulting in the loss of irreplaceable habitats such as ancient woodland or veteran trees will not normally be acceptable unless the need for, and the benefits of the development in that location clearly outweigh the loss'.

9.2.4. Chelmsford City Council's Local Plan (2020) Policy DM16 states that permission will be granted that do not result in unacceptable harm to veteran or ancient trees. It does accept that some loss may be unavoidable but that this will be reviewed on a case-by-case basis.

9.2.5. Colchester state that 'Existing trees of good quality, well sited and appropriate for their surroundings will greatly enhance any new development by providing an immediate appearance of maturity, in such situations existing trees should be retained.' They also state that important trees that will be retained may be subject to preservation if there is deemed to be a future threat of removal.

Local Issues/Impacts: Arboricultural Impact Assessment (AIA)

Confirmed loss

9.2.6. An AIA has been provided in support of the application and outlines some of the arboricultural impacts that will occur as a result of the scheme. The report outlines the definite loss of 284 trees/tree groups in total, consisting of seven category A trees, 90 category B, 185 category C and two that are category U. Five of the category A trees are considered to be potential veteran trees, however no detailed assessment has been done as to whether these are true veteran trees or candidate veteran trees. It is imperative that all the potential veteran trees on the site are suitably surveyed to confirm their status as either veteran, candidate veteran or ancient trees.

9.2.7. Although the same protection cannot be applied to candidate veteran trees, they are still hugely important as their condition will still provide habitats for mammals and invertebrates, but they are also the veteran trees of the future. The veteran assessment should be done prior to any determination so the actual impact of the proposals can be fully assessed. One of the five potential veteran trees is proposed for removal to accommodate a temporary haul road. This permanent loss of habitat is unacceptable for a temporary road and so the scheme proposals should be revised to accommodate this tree throughout the widening. Whether or not this tree is a veteran, loss of high-quality trees for a temporary route is unacceptable. If the tree is considered to be a veteran, the buffer zone will be much higher and therefore needs to be accommodated for in any design changes.

9.2.8. The impact of the loss of these trees particularly the category A and potential veteran trees in the local landscape is significant, both visually and environmentally. When considering that the England Trees Action Plan (2021-2024) aims to enhance tree stock, not knowing the actual impact of loss of irreplaceable habitat prior to consent has the potential to lead to the loss of more significant trees, impacting on the local environment. In addition, the loss of category B trees will still have significant local visual, environmental and ecological loss, given that the collective canopy cover/habitat these trees provide will be extensive.

Potential loss

9.2.9. In addition to the confirmed tree removals, there are an additional 96 trees that are considered to be at risk of removal. Of these trees/tree groups, ten are category A, 50 are category B, 34 are category C and two are category U. Without knowing whether or not these trees can be retained or whether they will need to be removed, the overall impact on the tree stock cannot be determined. The additional removals would take the total up to 380, which compared to the total trees on site at present (806), is almost half. Although it does appear that the highest category trees have generally been prioritised for retention, there are areas where high category (category A and B) trees might be required to be removed. Given the impact of these additional tree removals on an already significant scheme with large numbers of tree removals, it is not acceptable to suggest that trees might be 'at risk'. A final version of the AIA must be produced with definitive tree losses prior to any decision being made to acceptability of the proposals, especially when the potential additional losses double the number of significant trees to be removed.

Adequacy of response

9.2.10. Paragraph 131 of the NPPF acknowledges the contribution to the character and quality of environments, as well as their role in mitigating and adapting against climate change. In such a significant area of air pollution resulting from traffic, existing trees are very important, and whilst mitigation can be sought, the immediate reduction in canopy cover and carbon sequestration in an area such as the A12 will have detrimental impact. The same paragraph also outlines that existing trees are retained wherever possible. The significant number of trees proposed for removal to facilitate the scheme does not take this statement into account, especially where trees are being removed to facilitate temporary construction accesses. The long-term retention of trees should be prioritised, and confirmation given as to the actual number of trees required to be removed.

9.2.11. As well as this, the status of these trees must be considered. Further surveys to identify which trees on site constitute veteran/ancient/candidate veteran trees should be sought at the earliest opportunity, so conflict can be avoided where practicable. Paragraph 180c of the NPPF sets out that 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists. In this case, because it is not presently clear how many true veteran/ancient trees will be removed, no compensation strategy can be put into place. Likewise, there will need to be suitable management of those trees that are deemed to be veteran trees both in terms of tree protection and any necessary tree work. Part of the compensation requirements will be to identify trees that can be pruned for veteran characteristics, which needs to be done as part of the veteran tree assessment.

9.2.12. Due to the nature of this scheme, without the documents and clarity over the number and type of tree removals, no decision can be made in terms of arboricultural suitability of the proposals. Whilst it has to be accepted that there will be tree removals, certainty is required over the extent of these. For any future submission, it is deemed that a finalised AIA, a veteran tree survey and associated management plan and a compensation strategy specifically relating to the veteran tree removals will be required.

9.2.13. With regard to the Register of Environmental Actions and Commitments it does little to address the concerns raised as a result of the Environmental Statement.

9.2.14. LV6 outlines how an Arboricultural Method Statement and Tree Protection Plan will be prepared by the Principal Contractor pre-construction. At present, the AIA has not been finalised and although the AMS does not need to be prepared in advance of the permission, the AIA does need to be agreed prior to the development of the AMS. It is recommended that a previous action take into account finalising of the AIA to ensure that all impacts can be suitably mitigated for. The timing of this must precede LV4.

9.2.15. In addition, there does not seem to be any reference to veteran tree assessment or management. Whilst there is reference to mitigation (BI17), which acknowledges that veteran trees cannot fully be replaced, it does not give guidance on the strategy or give suitable efforts to try to replace the habitat that will be lost. In order to suitably manage that, a full veteran survey must be carried out. Once this has been done, there needs to be a suitable mitigation strategy in line with the NPPF (2021) to ensure that all loss of ancient and veteran trees is suitably mitigated for.

9.2.16. As with the finalised AIA, there must be an actual impact identified prior to determination to ensure that all trees that can be successfully retained will be included in the final design layout and therefore it must precede any work on site (including tree felling – LV4). There will be a need to veteranise suitable trees through pruning methods to offset some of the habitat loss, and suitable trees should be included in the veteran tree report that is recommended above.

9.3. Climate Change

Local Policy

9.3.1. The scheme has been assessed against the Local Plans of the relevant local authorities in Essex. The Essex Climate Action Commission (ECAC) and its emerging Report "Net Zero: Making Essex Carbon Neutral"[13] was published in July 2021, and the council's Climate Action Plan has been published (November 2022) and sets out the immediate actions being taken by the council in response to the ECAC report.

9.3.2. The applicant's response to the council's scoping comments in Table 15.1 indicates that the ECAC Net Zero: Making Essex Carbon Neutral Report (July 2021) [14]is addressed in the assessment as set out in Table 15.6.

9.3.3. However, in Table 15.6, the applicant only states what the report covers and does not set out a response to it or how it is addressed in the assessment. This is an omission, which the council requests is rectified.

Local impacts

9.3.4. The ECAC Net Zero: Making Essex Carbon Neutral Report (July 2021) sets out a plan for Essex to tackle climate change and the key steps needed for Essex to reach net zero by 2050.

9.3.5. Specifically, for transport, the document sets out a series of recommendations, including increasing active and sustainable travel provision within Essex; reducing reliance on the car; and creating new cycling, walking and bus routes from and to key destinations for residents and visitors, while supporting the shift to alternative fuels.

9.3.6. The impact of the proposed scheme on emissions within the county and potential impact on the target for Essex to be net zero by 2050 should be included in the assessment. The importance of reducing the impact of the proposed scheme to as close to 'net zero' as possible should be acknowledged.

[13] Net Zero: Making Essex Carbon Neutral
[14] Climate Action Plan

9.3.7. To reduce the impact of the proposed scheme, provision should be made for the reduction and offsetting of greenhouse gas emissions, in both construction and operational phases, to minimise the development's carbon footprint and mitigate the effects of climate change. Opportunities for the scheme to have help implement the recommendations set out in the ECAC Report (2021) should be taken too.

Adequacy of Response

Assessment against targets

9.3.8. The Environmental Statement Chapter 15 considers the impact of the proposed scheme on climate (for example the nature and magnitude of greenhouse gas (GHG) emissions); and the vulnerability of the proposed scheme to climate change (as per the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017).

9.3.9. To do this, the applicant has carried out an assessment in accordance with the Design Manual for Roads and Bridges (DMRB) LA 114 Climate Version 0.0.1 standard (Highways England, 2021a). Referred to as DMRB LA 114.

9.3.10. To assess operational emissions a 60 year appraisal period (from 2027 to 2086) has been used. Decommissioning has not been assessed, which is in line with the advice contained in DMRB LA 114. The scheme has been assessed in terms of potential vulnerability to current and potential future climate conditions, using the latest Climate Projections (UKCP18).

9.3.11. The applicant assesses the potential likely significant effect of the schemes' carbon emissions against the national level legally binding targets on climate as set out in the Climate Change Act 2008. The applicant has not carried out a similar assessment against locally set targets. For example, the target for the County to achieve net zero by 2050 as set out in the ECAC Report (July 2021) and re-stated in the council's Climate Action Plan (Nov 2022).

9.3.12. Broadly, the assessment methodology and approach set out in the Environmental Statement Chapter 15 is satisfactory, but the council is disappointed that the effect of the schemes' carbon emissions is not assessed against the local target set for the County.

9.3.13. The applicant states that there is no reasonable basis for assessing the significance of GHG emissions impact of the scheme at a local or regional level. However, the council believes that the target of achieving net zero by 2050 on a County level in Essex is an important local aim and a key component of the legally binding UK net zero target for 2050. This is supported by the data presented in the chapter, for example:

- Estimated CO_2 emissions within Essex in 2019 totalled 6,834 kilo-tonnes (kt), representing approximately 20.1% of total estimated CO_2 emissions within the East of England and 2.5% of total estimated CO_2 emissions within England Para (para 15.8.5)
- Road transport CO_2 emissions are estimated to comprise a significant proportion of the total CO_2 emissions within Essex (47.8%), the East of England (38.4%) and England (36.4%). A-roads, including the A12, of which the proposed scheme would form part, are estimated to contribute approximately 19.3% of the total CO2 emissions within Essex, 17.8% of the total CO_2 emissions within the East of England, and 14.6% of the total CO_2 emissions within England (Para 15.8.6)

9.3.14. Given, the significance of road transport emissions in Essex, it is important to understand the impact of the scheme on the county net zero target. The council therefore request that the impact of the scheme on the county target is assessed and reported.

9.3.15. Furthermore, given that the proposed scheme is located entirely within the area administered by the council (para 15.8.4) and the data used (BEIS 2021f) for determining the carbon emissions baseline is presented at both national and county level, then it would be straightforward for the applicant to carry out an assessment so that the impact of the scheme on the County target is fully understood and can inform the decision-making process.

Ambition for net zero

9.3.16. Throughout the Environmental Statement Chapter 15, the applicant has not acknowledged the importance of reducing the impact of the scheme to as close to net zero as possible. The applicant considers that as the net zero target is set for the UK as a whole then there is no requirement for the proposed scheme to have net zero GHG emissions. The ambition of the applicant is considered lacking and fails to appreciate that for the UK target to be met then every development that occurs in the country must be aiming to be as close to net zero as possible, and therefore radically reduce GHG emissions. The applicant states that GHG emissions will be reduced, but not by how much – there is no scale or level of ambition indicated from the outset.

9.3.17. The proposed scheme, which will be carbon heavy in its construction, needs to show a commitment and methodology to reduce and offset the carbon footprint of the development and aim for net zero. The applicant asserts that there is no requirement for this to be done, or indeed for the transport sector to be net zero by itself. Whilst this may be technically correct, the reality is that for the UK to achieve net zero in practice, all sectors need to play their part and reduce emissions to as close to zero as possible - the transport sector included.

Mitigation measures

9.3.18. The assessment of GHG emissions from the proposed scheme is as follows:

- The GHG emissions from the construction phase are estimated to total 428,626 tCO_2e (Para 15.11.2)
- The estimated operational phase GHG emissions over a 60-year appraisal period after the scheme opening (i.e. between 2027 and 2086, inclusive) are: 35,326,522 tCO_2e and this represents an increase of 1,572,851 tCO_2e compared to the 'Do-minimum' scenario. (Table 15.22)

9.3.19. The largest proportion of construction phase GHG emissions (55.5%) is estimated to be associated with the production of materials. The construction process stage, which includes the transport of materials to site, the transport and treatment waste, employee transport, and construction and installation processes, is estimated to contribute 35.0%. The GHG emissions associated with changes in land use and forestry during the construction phase are estimated to contribute 9.5%. (Para 15.11.3)

9.3.20. The operational phase GHG emissions are dominated by road user GHG emissions. Changes in forestry as a result of the proposed scheme are estimated to result in a small increase in carbon sequestration (i.e. a net benefit) during its operation. (Para 15.11.5).

9.3.21. Both the construction and operation GHG emissions estimates include the savings of GHG emissions delivered through the mitigation measures that are committed to in the proposed scheme. These are described as 'Embedded (Design) Mitigation Measures' and 'Standard Mitigation Measures'.

9.3.22. The **Embedded mitigation measures** that aim to reduce GHG emissions are listed in para 15.10.2. They mainly relate to scoping out works, and modifying works, to avoid the need for construction and demolition activity. As an example, existing pathways are to be retained, but there is limited comment on how these pathways, cycleways and horse-riding facilities are going to be truly enhanced to benefit the environment, for example through planting or integration of permeable surfaces.

9.3.23. Embedded mitigation measures have also been included to support active travel to encourage a modal shift away from the use of the private car. Such measures include improving existing infrastructure for walkers, cyclists and horse riders, and providing linkages for these users across major junctions and bridges over the road and to existing Public Rights of Way (PRoW).

9.3.24. It is considered that these measures are a minimum, in that they seek to facilitate the continued use of existing infrastructure for current users of active travel modes and to ensure these are not inhibited. There is no evidence presented in the Chapter to demonstrate that these measures are likely to stimulate a significant modal shift. The

council would urge the applicant to address this by incorporating more innovative and enabling active travel measures to encourage a significant modal shift.

9.3.25. Other embedded measures taken seek to reduce carbon losses from existing carbon stores (soil and vegetation) and improve carbon sequestration, for example through planting of new areas of woodland and vegetation.

9.3.26. It is noted that the distance that trees and shrubs will be planted in relation to the road is indicated but there is minimal comment on the species type and mix. This should be carefully considered, making sure that they are the right species in the right place, offering the greatest absorption of greenhouse gases, are drought tolerant, and from stock native to the area.

9.3.27. The applicant identifies a series of embedded mitigation measures that relate to the vulnerability of the proposed scheme to climate impacts. These measures include flood resilience, sustainable drainage, and landscape design measures. The measures are considered broadly appropriate.

9.3.28. **Standard mitigation measures** are listed in the Chapter, and these are included because they are legislative requirements or standard sector practices. The Applicant also highlights that the National Highways Net Zero Highways Plan requires all Tier 1 and Tier 2 suppliers to have certified carbon management systems by 2025. This is welcomed.

9.3.29. In terms of the standard mitigation measures, there are, however, several matters to highlight:

- Logistics Management Plan:

9.3.30. The Logistics Management Plan would set out measures with the aim of achieving 20% car share and 20% travel by public transport (with the use of mini-buses from local rail stations to the construction sites) for employee transport.

- Sourcing materials from local suppliers, where practical and cost-effective to do so.

9.3.31. National Highways should make a greater commitment to this, setting targets for local procurement and this should be integrated into the proposed Sustainable Procurement Plan which currently only commits to 'sustainably and responsibly sourced materials and products'.

- Site Waste Management Plan:

9.3.32. The Site Waste Management Plan is to become the responsibility of the Principal Contractor but there are no details about how this contractor will be identified and their experience in the management of waste and circular economy principles and what the expectations are. The inclusion of measurable targets would be advisable.

- Sustainable Procurement Plan:

9.3.33. Whilst the Applicant refers to the preparation of a Sustainable Procurement Plan (SPP) and also a Sustainable Waste Management Plan, it is noted that there are a number of limitations to this, particularly because reference is made to a number of 'principles'. Of particular concern is the 'value for money' principle which will likely trump all environmental considerations given its narrow focus. Greater emphasis should be placed on environmental considerations in the decision making process, including evaluating the 'services' the environment provides, and the cost to wider society of not taking environmental matters into account.

- Additional mitigation measures:

9.3.34. It is disappointing that no additional mitigation measures have been identified (para 15.10.8). Overall, the mitigation measures listed focus on the delivery of the scheme, with little consideration or commitment to the ongoing improvement in materials in road construction. For example, where possible, using recycled materials for maintenance, sourcing local materials, using local and considerate contractors and through the sharing of best practice or 'lessons learnt'.

Enhancement Measures

9.3.35. The Applicant has identified several opportunities for enhancement measures to be incorporated into the scheme to reduce GHG emissions. However, the Applicant states that these are not necessary to mitigate impacts, nor are able to be confirmed.

9.3.36. The measures listed as enhancements in Section 15.10.9 are the type of measures that the council would expect to be taken to demonstrate how to reduce and avoid GHG emissions on an infrastructure project of this scale. These enhancement measures relate to:

- Reducing or avoiding GHG emissions during construction stage by using electric or low carbon construction equipment, making use of telematics and start/stop technology, generating renewable energy on-site, using low energy solutions for onsite offices / site compound etc.
- Reducing or avoiding GHG emissions associated with the consumption of raw materials, including carbon intensive materials (e.g. concrete and cement). Setting a 30% reduction target for embodied carbon.
- Further reducing the magnitude of GHG emissions associated with the use of materials and waste disposal, through for example, undertaking pre-demolition assessments which make recommendations for materials re-use, recycling and other recovery or final disposal.

9.3.37. It is disappointing that the applicant says they cannot confirm the measures and say they are not necessary to mitigate emissions. The council disagrees, National Highways – as an 'arm' of Government – and a significant infrastructure provider, should be leading the

construction industry by example and striving to achieve and play their part in contributing to the national goal of achieving net zero by 2050. Therefore, the council would urge the applicant to commit to these measures and seek to implement them in full as this is not drawn out in Chapter 15 at this time.

9.3.38. Commitment should also be given to the opportunities for enhancement that have also been listed (15.10.10) in relation to vulnerability to changes in climate.

Significance of the effects – on receptors

9.3.39. The impact of the GHG emissions (from both construction and operation phases) from the proposed scheme has been assessed against the identified climate receptors. For assessing the impact of the scheme on climate, the receptors identified are the UK Carbon budgets. This accords with the DMRB LA 114 and NNNPS. The Scheme extends over several carbon budgets and the impacts have been reported against each.

9.3.40. There is no significance threshold set for carbon in terms of Environmental Assessments. The IEMA guidance explains that the key significance is whether the scheme emits GHGs and does it reduce GHG emissions in line with the trajectory to net zero 2050?

9.3.41. The applicant, in line with the NNNPS, explains that the adoption of a net zero target does not mean that consent cannot be granted for development that will increase carbon emissions; rather, that it is necessary to continue to evaluate whether (amongst other things) the increase in carbon emissions resulting from a proposed development would have a material impact on the ability of Government to meet its carbon reduction targets (para 15.5.16).

9.3.42. The Applicant states that it is very unlikely, however, that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets (para 15.9.1).

9.3.43. The applicant has evaluated the impact of the GHG emissions against the 4th, 5th and 6th UK carbon budgets. The results are presented in Table 15.23 as a net change in GHG emissions with proposed scheme within the relevant carbon budget, and are summarised as:

- 4th Carbon Budget: 458,835 (tCO_2e) (which equates to 0.024% of the carbon budget)
- 5th Carbon Budget: 147,364 (tCO_2e) (which equates to 0.009% of the carbon budget)
- 6th Carbon Budget: 140,622 (tCO_2e) (which equates to 0.015% of the carbon budget)

9.3.44. The applicant has made the judgement that although the proposed scheme is estimated to result in an increase in GHG emissions during both its construction and operation phases, the changes in GHG emissions is negligible in comparison with the relevant UK carbon

budgets. The applicant therefore concludes that the GHG emissions associated with the proposed scheme are considered unlikely to have a material impact on the ability of the UK Government to meet its carbon reduction targets and are therefore considered to be 'not significant', in line with DMRB LA 114 and the NNNPS. (Para 15.11.8)

9.3.45. Whilst the council understands how the judgement has been made, and that it accords with the relevant guidance, it is considered important to highlight the shortcomings of the assessment process in relation to achieving the UK net zero target. If every road project is considered in isolation then in practice it becomes more unlikely that the UK will meet its net zero target by 2050. It is the cumulative impact of such projects that needs to be assessed and a judgement made on the significance of the effects of all the projects together on the ability of the UK to meet the net zero target.

Monitoring

9.3.46. The regular reporting of GHG emissions from the scheme throughout its life cycle is necessary to support monitoring, reducing, mitigating, as well as offsetting GHG emissions. To achieve national and county climate targets, the need to decarbonise large infrastructure developments in Essex is significant.

9.3.47. The applicant proposes quarterly GHG emissions reporting which would be informed by actual materials, and fuel and energy consumption data and would facilitate reviewing the performance of the proposed scheme against the carbon estimates in the Environmental Statement, allowing the identification of further GHG emissions reduction opportunities.

9.3.48. The County Council is satisfied with this approach.

Adequacy of Response

9.3.49. The council welcomes the wider benefit that the proposed scheme brings to Essex but is equally concerned to see that material provisions are made in the development proposal to mitigate the GHG emissions generated from the construction and operation of the proposal and its associated development.

9.3.50. The council recognises that the assessment presented in the Environmental Statement Chapter 15 has been carried out in accordance with the DMBA LA 114 and NNNPS and that it has concluded that the effects are not significant in a national context. However, the council would highlight the limitations of the assessment system in that infrastructure projects of national importance are assessed on a piecemeal basis in terms of climate impact and are considered in isolation when evaluated against the carbon budgets set at a national level.

9.3.51. For an ambitious County like Essex, the council is disappointed that the applicant hasn't assessed the impact of the proposed scheme against local County level targets. It is important to be open and transparent in assessing progress towards climate targets, and that includes making assessments of schemes that might potentially show that climate targets are more difficult to reach. Such circumstances might trigger the need for greater action to be taken to try to minimise the climate impacts of a scheme and make it more acceptable, or at least be honest about the difficult decisions that must be made to achieve a balance between the costs and benefits of the scheme. As part of this, the council considers it is important to recognise and assess the climate impacts of the scheme on the local County level climate target from the outset.

9.3.52. The council is concerned about the lack of ambition and leadership demonstrated through the proposed scheme from the perspective of mitigating climate change. For example, the applicant has identified a series of 'enhancements measures' that would deliver greater mitigation of the climate impact of the development, but these have not been committed too, nor included in the assessment of the impact of the scheme on climate.

9.3.53. On balance, although the council supports the scheme and its wider benefits for Essex, the County Council encourages the applicant to: assess and report the climate impact of the scheme against the County level net zero target; reduce the climate impact as much as possible by committing to fully implement the identified enhancement measures, including the 30% reduction target for embodied carbon; and demonstrate leadership and innovation in this sector. Together this will help secure greater reductions in GHG emissions and help keep the County and UK within reach of net zero by 2050.

9.4. Flood Risk, Drainage and Surface Water Impact

9.4.1. The council as Lead Local Flood Authority (LLFA) is responsible for managing risk of flooding from Surface water, ground water and from ordinary watercourses. The LLFA is a statutory consultee on all major developments in regard to surface water drainage design. The council supports major planning applications to meet the increasing demand for housing and infrastructure, where we aim to protect and maintain the existing natural features with the provision of additional green and blue infrastructure, best practices guidance, and multifunctional project design to mitigate any increase in flood risk due to proposed development.

9.4.2. The proposed development has been assessed in relation to, national planning policies, local standards and guidance documents and industry best practice standards (NPPF 2021, Suds Design Guide 2020, Ciria SuDS Manual C753).

9.4.3. The proposed A12 widening works consists of greenfield and brownfield catchments which require appropriate flood mitigation and surface runoff management throughout the development site. The poor management of surface runoff from these sites has the potential to increase surface water flood risk.

9.4.4. The council as LLFA has engaged collaboratively with National Highway commissioned drainage consultants to scope the detail required to assess the proposed surface water drainage strategy and other supporting documents including Flood Risk Assessment, Ground Investigation report, water quality assessment, flood management during construction phase of the A12 widening scheme. Essex County Council as Lead Local Flood Authority support the proposed A12 widening Scheme.

Flood Risk

9.4.5. The Flood Risk Assessment (FRA) has been produced to support the A12 development. The FRA is developed in accordance with the technical guidance to the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021a) and demonstrates compliance with the requirements of the National Networks National Policy Statement (NNNPS) (Department for Transport, 2014).

9.4.6. The FRA has assessed flood risk from all sources including existing risk of flooding and any flood risk increased due to proposed scheme, further the document has addressed the impact of flood risk elsewhere and have proposed mitigation to this. The FRA has considered the risk of flooding for construction and operational phase of the proposed scheme as well.

9.4.7. The proposed scheme would cross seven Main Rivers and 36 Ordinary watercourses. Detailed hydraulic modelling has been undertaken for the seven Main Rivers identified to assess baseline flood risk and potential proposed scheme impacts. Each watercourse crossing location is assessed as existing or new crossings and proposed mitigations to manage risk from these locations. The results of the preliminary assessment have identified 5 potential watercourses ((7, 21, 21a, 23 and 26) which required detailed hydraulic modelling.

9.4.8. Ordinary watercourse baseline flood extent scenarios ranges from 5% (1 in 20) AEP event, 1% (1 in 100) AEP event, 1% AEP event plus 40% allowance for climate change event and reflects the baseline conditions for proposed widening works. With Scheme watercourse modelling results compared to baseline scenarios have shown the potential locations where flood risk has increased for watercourse 21, 21a, 23 and 26. The appropriate site-specific flood mitigations are proposed to deal with flood extent and depth and runoff discharge

from A12 widening scheme is proposed either by infiltration into aquifer or restricted discharge into sewer/watercourse.

9.4.9. With proposed mitigations the overall impact of flood risk from modelled and unmodeled watercourses will be low and will not increase flood risk elsewhere as a result of the proposed scheme.

9.4.10. The Ground investigation has identified that the sections of the proposed scheme are within areas that have potential for groundwater flooding at the ground surface. Mitigation in terms of required suds with lined storage feature is proposed.

9.4.11. Essex County Council as LLFA is satisfied with the level of information provided to support that the proposed scheme would not increase risk of flooding from Surface water, Ground water and from ordinary watercourses during the operational phase of the development. Onside flood risk at certain locations will not have significant issue as the scheme is designed to DMRB standards and design checks are done for 1 in 5-year return period inclusive climate change event.

Inworth Road Flood Risk

9.4.12. Inworth Road has been experiencing an existing flooding as per Environment Agency RoFSW maps. The RoFSW mapping indicates that the road could be at risk of flooding from Ordinary Watercourses in the range of 300–900mm depth in a 1% (1 in 100) AEP event. There is potential that the A12 widening works will increase the traffic flow along the Inworth road. Further as part of widening works very little hard surface area is increased along the Inworth road.

9.4.13. Flooding from additional impermeable area requires mitigations to keep carriageway free from flooding. The proposed widening works along Inworth road has proposed surface water drainage design to mitigate any increased surface water flood risk caused by the surface water runoff generated by additional paved area.

9.4.14. It is anticipated that proposed drainage design would only mitigate the impact of the additional paved areas as a result of the proposed scheme widening.

Surface water Drainage strategy proposal

9.4.15. National Highways has developed the Surface Water Drainage Strategy, in accordance with the requirements of the National Networks National Policy Statement (NNNPS) (Department for Transport, 2014). Surface water drainage system (SuDS) are developed in accordance with local standards (SuDS Design Guide) and national planning policies (NPPF) and industrial best practice guidance (CIRIA SuDS Manual C753).

9.4.16. The proposed Surface Water Drainage Strategy report (TR010060/APP/6.3) prepared by National Highways (Appendix 14.6 of ES Chapter) has widely used Sustainable Drainage System to manage runoff from the site as per allowable greenfield rates with some exceptions where the discharge rates are compensated by adjacent catchments. The Lead Local Flood Authority (LLFA) is satisfied with the SuDS measures proposed to manage the runoff quantities however, we have significant concerns with the provision of water quality measures to treat surface water runoff generated from the A12 drainage catchments.

9.4.17. Surface water drainage strategy in regard to A12 widening scheme consists of following measures to manage runoff volumes from the drainage catchments:

- Provision of attenuation pond and oversized pipes to limit discharge at allowable rates from the site.
- Number of vegetative swales, drainages ditches, filter drains and traditional drainage element to collect runoff from different sections of the carriageways and convey this to attenuation pond or discharge outfalls.
- Sustainable drainage System to manage runoff volumes and mitigate flood risk.
- Provision of flood storage areas where necessary to manage existing flow routes and localised ponding and direct them back into the drainage system to provide better management.

Climate change allowances

9.4.18. The proposed scheme has potential to increase the runoff rates and volumes from the developed areas due to climate change. The drainage design is supported using the increase rainfall intensities by accounting a climate change allowance of 20% and further design sensitivity check for a climate change allowance of 40% has also been undertaken to assess the extent of any potential surface water drainage flooding from the proposed scheme.

9.4.19. Lead local Flood Authority is satisfied with climate change allowance for proposed scheme design life.

Construction operation impacts

9.4.20. The proposed scheme has potential to cause surface water and ground water flood risk from areas susceptible for extensive overland flow routes, isolated ponding areas and areas with shallow ground water levels. The FRA section 7.1.3 (Construction Phase) have indicated the construction elements that have had potential to increase flood risk.

9.4.21. The Environmental Impact Assessment has outlined the essential mitigation to be included in Environmental management plan (EMP). The EMP would be developed and implemented by the Principal Contractor prior to the start of construction works. The EMP plan identifies environmental risks, their associated control measures, considering the corrective actions,

monitoring, auditing, and reporting of control measures. To prevent flood risk during construction phase proposed mitigations are:

- Provision of Temporary surface water drainage strategy
- Work will be carried out in phases and required flood mitigation areas would be constructed prior to start of work for this phase,
- Material stockpiles and storage areas are located more than 10m from adjacent watercourses, ponds, boreholes, site drainage, and not within Flood Zone 3 and overland flow paths.
- Effective management of pollutants (during fuelling refiling activities)
- Required permits would be obtained from Environment Agency for water discharge or dewatering of cuttings and borrow pits.
- Appropriate mitigation as signage would be completed as part of public risk assessment.

Water Quality Measures

9.4.22. The water quality impact assessment report (TR010060/APP/6.3) was undertaken using the methods describe in Design Manual for Roads and Bridges (DMRB), Highways England Water Risk Assessment Tool (HEWRAT), and Rivers and Lakes Metals-Bioavailability Assessment Tool (M-BAT) (WFD-UKTAG, 2014).

9.4.23. The proposed scheme is located within seven Main Rivers and 36 Ordinary watercourses along with minor watercourses and unnamed ditches. Runoff from motorways and road is heavily polluted with number of pollutants such as suspended solids, heavy metals, and hydrocarbons. When combined with rainfall, these contaminants can runoff into the highway drainage system which discharges to a watercourse. This discharge into river or watercourse is a major source of water pollution and have significant impacts on water quality as well as the aquatic habitat quality.

9.4.24. The results of water quality assessment report based on HEWRAT routine runoff assessments undertaken for surface water and ground water generated from the proposed drainage design, predicted that road runoff from the proposed schemes will not have significant effect on ground water quality and surface water environment.

9.4.25. However, the council as LLFA, is not satisfied with treatment measures included within the proposed A12 Widening scheme to treat runoff prior to its ultimate outfall. The LLFA has serious concerns with respect to discharging polluted runoff into water environment. The council believe the runoff from proposed scheme is not safe to discharge into water environment and will further deteriorate the Essex water features.

9.4.26. The council have noted that the runoff quality will further deteriorate the local water features with the view that the runoff treatment is considered to be lower than the level that is required on a residential site with similar or low pollution risk category. Under the

councils wider environmental objectives, we strongly believe that our local water environment would have significant impacts on water quality, if we allow the development to be carried out without mitigating the risk of water pollution using our recommended standards. We would look for further information and amendments before we would be in a position to support the DCO application for Water Quality.

9.4.27. The proposed scheme has Incorporated Sustainable Drainage System (SuDS) to ensure runoff from road should pass from the SuDS treatment trains consists of various sustainable drainage components, such as combination of filter drains, attenuation ponds, swales, and vegetated ditches, prior to discharge into watercourse or Main River. The council is not satisfied due to the fact that the proposed SuDS measures are not sufficient to treat pollutants and prevent them entering into water environment.

9.4.28. LLFA has concerned with the level of detail provided to assess the water quality measures, as the proposed scheme catchment plans are very high level, which offers great difficulty to assess the SuDS treatment train is sufficient for meeting SuDS water quality standards as stated in CIRIA SuDS Manual C753. Further number of catchments are receiving no treatment prior to discharge with some catchments fall under unsatisfactory runoff treatment provision.

Compliance with the Water Framework Directive

9.4.29. The Water Framework directive refers to achieve good qualitative and quantitative status of overall water bodies. Chapter 6.3 of ES report Appendix 14.2 Water Environment Regulations Compliance Assessment report is prepared to support the A12 DCO application following the legislation of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

9.4.30. The council noted that the proposed development is not fully addressing the environmental objectives (prevent deterioration of the status of surface water and ground water body) where the council has taken a positive approach to mitigate the significant impacts resulting from polluted runoff being discharge into our water bodies. The council is looking to discuss this with the applicant.

Water Environment and Baseline conditions

9.4.31. The council supports the approach taken to assess the water environment and baseline conditions using available resources for surface water, ground water and flood risk.

9.4.32. The council have no comments to made in relation to walk over surveys due to the fact that the council as LLFA did not carry out or participated in any walk over surveys for the

watercourses, instead we relied on the information presented to us as part of DCO stakeholder engagement.

The effectiveness of mitigation, compensation, and enhancement measures

9.4.33. The proposed A12 Widening Scheme has an effective mitigation in place in terms of flood risk and surface water drainage. Essex as LLFA support the proposed development for providing mitigations with regard to flood risk from surface water, ground water and from ordinary watercourses, and sustainable drainage strategy. However, the council as LLFA is not in support of proposed development with respect to water quality measures proposed for the scheme.

9.4.34. The risk of flooding from surface water (RoFSW) has indicated the proposed scheme is predominantly within low to medium risk but there are potential areas that falls under high surface water flood risk category for 1 in 30 AEP storm event. The main high risk flood locations are associated with areas where scheme crosses the ordinary watercourses and several external flow paths and isolated ponding areas. The appropriate site-specific flood mitigations are proposed to deal with localised flood risk.

9.4.35. Effective ordinary watercourse mitigation consists of provision of flood storage areas, channel flow diversion, flood mitigation bund, installation of weir structure (1.5m high) drainage ditches to capture overland flows, installation of new culverts or replaced with increase diameter culvers.

9.4.36. Hydraulic modelling was undertaken as part of the local SWMPs and pluvial and watercourse components were tested for different storm events as indicated in Flood Risk Assessment Report Appendix 14.5 of Environmental Statement chapter 6.3.

9.4.37. Surface water flood risk is managed by effective use of sustainable drainage principles as indicated in Surface Water Drainage Strategy Appendix 14.6 of the Environmental Statement [TR010060/APP/6.3]. The proposed drainage for the operation of the proposed scheme is designed to ensure no increase in flood risk in the 1% (1 in 100) AEP event plus a 20% allowance for climate change, as well as allowing the proposed scheme to remain safe and operational in flood events up to the 1% (1 in 100) plus climate change event.

9.4.38. The Surface Water Drainage Strategy is satisfactory from the proposed scheme. The runoff rates are limited to greenfield rates and allowable brownfield rates for all storm events including 100 years plus climate change event. SuDS components such as ponds, swales, and drainage ditches are proposed to manage runoff and enhance local landscape

9.4.39. The incorporation of Sustainable Drainage System across the A12 widening scheme has mitigated the localised impact of surface water flooding across the site.

9.4.40. Areas with shallow ground water risk are mitigated with measures included lined storage feature to attenuate runoff.

9.4.41. The impacts on flood risk during the construction phase are anticipated to be neutral.

9.5. Green Infrastructure

9.5.1. Essex County Council currently provides advice on green infrastructure schemes (GI) for major developments. The council have been consultees on GI since 2018. Although there are no statutory requirements for GI, the 25 Year Environment Plan and emerging Environment Bill will place significant importance on protecting and enhancing GI, accessibility and biodiversity net gain.

Policy Context:

Comments in relation to the Environment Statement (ES)

9.5.2. It is noted that the ES states they have incorporated green infrastructure mitigation within Chapter 8 Landscape and Visual and Chapter 9 Biodiversity. That the Design Principles document consider green infrastructure objectives to reduce significant effects on green infrastructure assets. GI is multifunctional (such as flood management, climate change mitigation and adaptation) at a range of scales that collectively deliver a range of environmental, social and economic benefits. It is important that the diversity of these functions and benefits is recognised as part of the landscape led design.

Scheme Impacts on GI

9.5.3. The ES states that the A12 crosses seven Main Rivers between junctions 19 and 25. One of these being the River Blackwater and mentions the Flood mitigation proposed for the Ashmans Farm Footbridge and another watercourse includes a ditch draining and/or buried pipe that will flows into the River Blackwater along the southern side of the A12. Flood modelling shows the proposed scheme would have negligible impact on flooding, and therefore no flood risk mitigation would be required.

9.5.4. However, the River Blackwater flows into the Blackwater Estuary, which are of international conservation importance. The A12 BNG Report states that further clarification is need on the design of the ditches, which has the potential for some of the ditches to not meet the BNG definition of a rivers and streams metric ditch, but also consideration for mitigation measure for water pollution during the construction phase and long-term road run-off is required. Chapter 9 does mentions that there will be seventy-one attenuation ponds to be provided throughout the scheme to enable road runoff to be treated prior to discharge into

receiving watercourses, but will this be located near this location? How will the surface water pollution discharged into the River Blackwater be mitigated as it is considered that details are missing at this time?

9.5.5. The A12 proposed Scheme for Design Section 3 is situated within the Essex Climate Action Commission's (ECAC) recommended Climate Focus Area (CFA), which is formed of the Blackwater and Colne River catchment areas, as shown in the map below. The objective of this recommendation is for the CFA to *"accelerate [climate] action and provide exemplars, for learning and innovation: adopting Sustainable Land stewardship practices: 100% by 2030 and Natural Green Infrastructure: 30% by 2030"* (ECAC, 2021). Among the objectives of the CFA are to achieve net zero carbon, biodiversity net gain, improve soil health and air quality, reduce flooding and urban heat island effect, and enhance amenity, liveability and wellbeing of Essex communities. It will achieve this by wholesale landscape change in rural areas and urban areas and it will look to developments and especially mineral restoration sites such as the Colman's Quarry Farm to contribute to these targets.

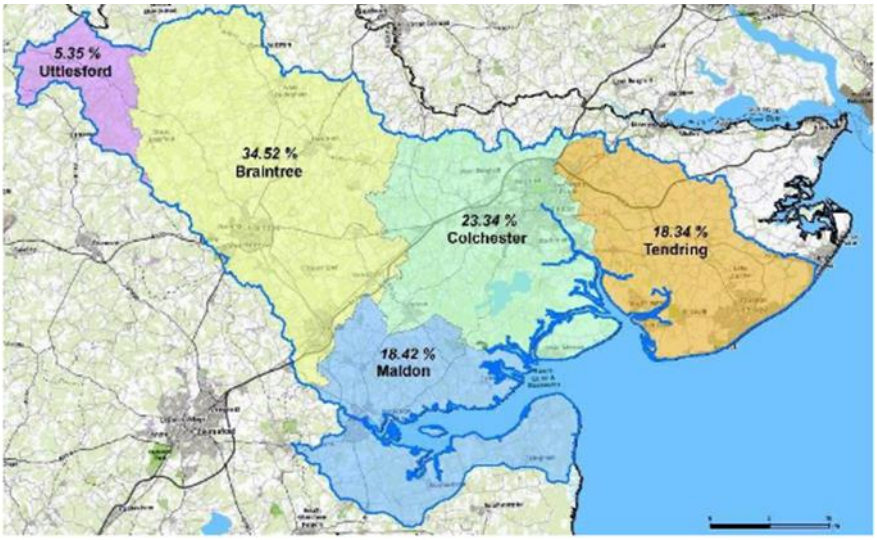

Figure 9.5: Map of ECACs Climate Focus Area

9.5.6. CFA require developments to consider the following requirements in in line with meeting the requirements outlined in NPPF:

- biodiversity net gain to enhance biodiversity and the natural environment by creating Natural Green Infrastructure contributing to the CFA 30% by 2030 target and the wider Local Nature Recovery Network/Strategy.
- flood and water management, for those properties at risk of flooding to include Integrated Water Management and Natural Flood Management techniques.

- New developments to improve urban greening of our towns, and villages through the provision of street trees for example. New developments are necessary in terms of increasing greenspace creation, naturalizing existing green spaces, greening the public realm, and implementing sustainable drainage systems (SuDS).

9.5.7. Part of the proposed offline A12 alignment at Junction 22 passes over Colemans Farm Quarry. A planning application had been submitted and concerns was raised regarding the changes to the reinstatement plans for biodiversity and green infrastructure enhancements to original land use of arable land because of majority of the site will be covered by the A12 proposals. Especially since the A12 BNG report (included as part of the BNG calculation) and ES Chapter 9 refers to the assumption that these habitats will be reinstated as they exist in the consented Coleman's Farm Quarry Restoration Plan and refers to detail design to mitigate direct loss of habitats at this flagship biodiversity site. If it is the latter of restoring to arable land, this will contribute little to Biodiversity Net gain and risk that after the A12 widening work no improvements will be delivered through either Highways and/or Landowner contributing to local nature recovery or people's health and wellbeing. Especially since it is near the River Blackwater (relates to above comments regarding the CFA). Clarification is needed on whether the A12 scheme will be taking on Coleman's Farm Quarry Restoration Plan.

9.5.8. These are the recommendations that were made as part of the Coleman's Farm Quarry Planning application regarding the changes to the restoration proposals:

- There is discussion with landowner, ECAC, the council and highways about the land after works are complete on A12 or phased delivery for land outside the A12 works and as works are completed for the land to be offered to contribute towards Local Nature Recovery, CFA and BNG credits/offsetting.
- Phased delivery of the original restoration plans for woodlands, hedgerow and tree planting, wetland habitat and grassland etc.
- Nature After Minerals a partnership programme, supported by Natural England, the Minerals Products Association, and the British Aggregates Association is consulted. They can provide advice and work to champion opportunities for nature through high quality habitat creation on former quarries. [redacted]
- If the restoration proposal is to return the site to arable land it will need to a better grade than before and demonstrate how it will deliver sustainable land stewardship with potential to link to Landscape recovery – a successor to the Countryside Stewardship scheme.

9.5.9. The ES provides a summary of the proposals for the de-trunked A12 sections between Junctions 22 and 23 and Junctions 24 and 25, but provides no mention of the green

infrastructure provision opportunities, whether this will be delivered as part of the scheme, or S106 funding or off-setting provision.

9.5.10. Exploring connectivity here is critical as this scheme needs not only to enhance nature through biodiversity net-gain and habitats but also needs to find the balance with access networks for active travel and recreational routes, through connecting existing and the creation of new routes. Therefore, the council's GI team recommends that these de-trunked routes include wildlife corridors and stepping-stones and, sustainable transport routes such as paths, cycle, and bridleways. The development should be designed to deliver not just Biodiversity Net Gain, but wider environmental net gains, exploring multifunctionality that forms a key component of nature recovery and the wider landscape scale GI network, connecting people to nature.

9.5.11. The council's GI team support a strategy that seeks to maximise opportunity for habitat retention. To ensure the integration of nature into development, the council's GI team recommends sustainable design is explored.

9.5.12. For replacement land, the ES states that the scheme will require several areas of open space for storage of materials and equipment etc. There is no further mention of any potential restoration plans for these areas once construction has finished.

9.5.13. The ES, in particular Chapters 8 and 9, include analysis of predicted landscape, visual, ecological/biodiversity impacts during the construction and operation of the development. The proposed mitigation measures which would be maintained and managed through the proposed Landscape and Ecological Management Plan (LEMP) is welcomed. It is noted that the LEMP will present how the landscape and ecological features would be protected during construction, and how landscape and ecological mitigation would be implemented and maintained. The council's GI Team suggest that the LEMP includes a maintenance plan and work schedule for a minimum of 15 years. Although through mandatory biodiversity net gain it will be expected for the habitat to be secured for at least 30 years via obligations/ conservation covenant.

9.5.14. Details should include who is responsible for GI assets (including any surface water drainage system) and the maintenance activities/frequencies.

9.5.15. We would also expect details on how the maintenance of GI assets and green spaces, whether through a management company service shall be funded and managed for the lifetime of the development to be included.

9.5.16. The above is required to ensure appropriate management and maintenance arrangements and funding mechanisms are put in place to maintain high-quality value and benefits of the GI assets

9.5.17. It is noted that the ES Chapter 8 and 9 and Appendix 9.14 refer to a Retained and Removed Vegetation Plans for the loss of and retention of existing trees and vegetation and to an Environment Management Plan. This maybe the same as a Construction Environmental Management Plan (CEMP), but ideally, strategic elements of the GI framework are brought forward in phase one of the development, to create a landscape structure or evidence is shown that substantive GI is secured as early as possible in initial phases of delivery to allow early establishment. Therefore, a CEMP will be required to set out how retained GI, such as trees, hedges and vegetation, as well as any nature designated sites (e.g. SSSi's etc.) will be protected during construction.

9.5.18. The ES Chapter 9 and Appendix 9.14 note that Biodiversity metric 3.0 was used to calculate the percentage net gain and that it will consider using the most recent and updated metric 3.1 when the proposed scheme design and construction information is refined, as well because of the LEMP development that takes target habitats and conditions into account. The Planning and Advisory Service advise that under mandatory BNG, there will be a requirement to use the latest version of the Biodiversity Metric. Prior to mandatory BNG, there is no requirement to use the Biodiversity Metric and projects can continue to use an alternative metric (unless the LPA has specified which metric to use). If the LPA does not specify the use of another metric, then we would recommend using the most recent version of the Biodiversity Metric.

9.5.19. The A12 BNG Report emphasises that the metric 3.0 forecast should be treated with caution due to the preliminary nature of the design, the limitations of the data, and the assumptions made to allow a quantitative forecast of biodiversity unit change. The council's GI team recommends using Biodiversity Metric 3.1 that the BNG Report is updated once the landscape/GI provision for both on-site and off-site is known and fixed.

9.5.20. A BNG Plan will need to be submitted to and approved in writing by the council. The Environment Act sets out that the biodiversity gain plan should cover:

- How adverse impacts on habitats have been minimised.
- The pre-development biodiversity value of the onsite habitat.
- The post-development biodiversity value of the onsite habitat.
- The biodiversity value of any offsite habitat provided in relation to the development.
- Any statutory biodiversity credits purchased; plus
- Any further requirements as set out in secondary legislation.

9.6. Biodiversity and Ecology

Local Issues

9.6.1. The council consider that the large scale of the scheme is likely to result in impacts to wildlife during the construction and operational phases. Without sufficient mitigation, there will be a permanent, even greater barrier to the movement of species from one side to the other, compared with the existing A12.

9.6.2. Notwithstanding the above, the area would benefit from the following habitat improvements, some of which is being provided by the Scheme:

- Improvements to watercourses and associated riparian habitats by restoring them to more natural lines and morphology;
- Creating, restoring and enhancing other linear habitats such as hedgerows;
- Retaining veteran trees and restoring and creating future veteran trees as well as habitat features for other related receptors such as terrestrial invertebrates.
- Creating a variety of locally relevant Priority habitats, including Acid Grassland. and Open Mosaic Habitat on Previously Developed Land. It should include use of low nutrient soils, which would have the benefit of requiring a low maintenance regime.
- Creation of new woodlands and management of existing woodlands;
- Measures within arable habitats to benefit farmland birds.

Adequacy of the information provided

9.6.3. Ecology matters for this NSIP are provided within Chapter 9, Volume 6 (TR010060/APP/6.1) and associated figures and appendices of the submitted Environmental Statement (ES) (Rev.1, August 2022).

9.6.4. The council has previously raised a number of concerns with respect to gaps in the information that are required to provide certainty of likely impacts. Without this additional information, there may currently be insufficient levels of mitigation, compensation and enhancements.

9.6.5. At this stage, the council do not consider that there is sufficient certainty that the Scheme would deliver effective and appropriate compensation and mitigation for potential ecological impacts for either the construction or operational phases of this Scheme. The council still has a number of concerns about impacts on protected species and it is unknown if the mitigation is deliverable or appropriate.

9.6.6. Furthermore, the council have requested that all impacts on protected and Priority species and habitats are considered for the scheme, not just significant impacts, which need to be considered separately from the ES. However, non-significant impacts have not been mitigated; this is required for the council as it needs to demonstrate it has met its s40 biodiversity duty under the NERC Act 2006.

9.6.7. There has only been one meeting between the Place Services Principal Ecologist and National Highways, which was in May 2022. We do not know whether all of our concerns raised during the course of the production of environmental documents and associated consultation period have been taken into account at this stage.

Species: Bats

9.6.8. As identified in the Environment Statement, at least ten species of bat are utilising the Scheme area for foraging, roosting and commuting, including the rarer Nathusius' Pipistrelle and Barbastelle bats, which are known to fly long distances.

9.6.9. At the aforementioned meeting a plan showing which static detectors recorded Barbastelle bats was requested to ensure that mitigation is embedded in all current locations used where the road will affect connectivity. This has not been provided. As the commuting and foraging movements of bats are not currently shown on a map it is difficult to understand their current utilisation of the landscape, although it's recognised that the Bat Survey highlights that, *"Key areas for commuting and foraging bats in the survey area included Prested Hall and along the River Blackwater and the River Ter, where high levels of bat activity were recorded, including for rarer species such as barbastelle and Nathusius' pipistrelle"* . However, the full extent of the severance of linear habitat features used by bats moving through the landscape remains unclear.

9.6.10. The council has previously raised concerns that adequate evidence is not yet proposed to demonstrate that the proposed bat crossing points will be sufficiently effective. This is particularly true of the hop-overs and over bridges which are "greened up". This is important as certain species of bat will not use culverts, such as Barbastelle bats. The council therefore still anticipate that additional information will be forthcoming to assess the likely impacts on these species before the Examination Hearings.

Species: Hazel Dormouse

9.6.11. At the time of writing this report the council are still awaiting receipt of the results of Hazel Dormouse surveys in the vicinity of the gas main diversion to provide certainty of likely effects from the Scheme.

Veteran Trees

9.6.12. The council wishes to express concerns at the level of uncertainty at this stage as to the true scale of impacts. Without a full tree assessment, it is difficult to identify the full extent of the potential impacts to veteran and potential veteran trees and ensure that an

adequate compensation strategy can be put in place. This should include a veteran tree survey and associated management plan and a compensation strategy specifically relating to the veteran tree removals prior to the Examination Hearings. Losses will require bespoke measures to compensate for the loss of veteran trees, which cannot be directly compensated as they an 'Irreplaceable habitat'. Measures should include targeted veteranisation pruning of suitable retained trees within the Order Limits. Habitat creation should also provide habitat features for other related receptors such as terrestrial invertebrates.

Priority Habitats

9.6.13. There are no proposals for provision of compensatory Open Mosaic Habitat on Previously Developed (OMH) Land Priority habitat. Paragraph 4.2.5 of the Biodiversity Net Gain report states that, "*For open mosaic habitats on previously developed land, the 4.74ha identified in the baseline is largely lost permanently and the are no proposals for creation of this habitat."*

9.6.14. There is insufficient justification in the reports as to why this important Priority habitat within Essex will not be compensated.

9.6.15. The council draws NH's attention to the Lower Thames Crossing DCO which includes agricultural land within the Order limits specifically for creation of OMH. We also draw your attention to the previous dualling of the A120 between the M11 and Braintree, which provides large areas of verge supporting a wide range of biodiversity using low nutrient soils, which also has had the benefit of requiring a low maintenance regime. A further effective road scheme is the A130 in southeast Essex comprising unimproved grassland with scrub, which benefits from an effective management regime.

Coleman's Farm Quarry

9.6.16. With respect to Coleman's Farm Quarry, we refer to the response by Minerals and Waste within this Section. The provision of habitats for restoration of this Quarry is based upon it being a 'Flagship Scheme' as set out in the Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (SPG) (Essex County Council, June 2016), which support Policy S12 of the Essex Minerals Local Plan 2014. This SPG highlights the particular habitats in Essex which would particularly benefit from low-level Quarry restoration. The habitats considered by the SPG to be the most appropriate for minerals after use in Essex are Lowland Heathland, Lowland Dry Acid Grassland, Lowland Meadows, Open Mosaic Habitat on Previously Developed Land and Reedbeds.

9.6.17. Colemans Farm Quarry, situated between the A12 and the River Blackwater, was one of five sites identified by the MLP that represented those preferred sites considered to offer the greatest opportunity to deliver beneficial biodiversity after-use.

9.6.18. Any alteration to the permitted scheme should ensure that it provides for a restoration scheme with comparable Priority habitats of at least similar size and context in the local area, near to the River Blackwater, and be consistent with the Essex Minerals Local Plan and the above mentioned SPG. It should not be directly or indirectly impacted by the new road itself and should provide at least an equivalent level of compensation and enhancement to that already permitted.

9.6.19. The ES states that, *"The design of habitats to mitigate direct loss of habitats at the flagship biodiversity site at Colemans Farm Quarry is shown on Figure 2.1 Environmental Masterplan [TR010060/APP/6.2] and will be further developed at detailed design".* However, the Environmental Masterplan (sheet 10 of 21) does not include the wider Quarry restoration and so does not sufficiently demonstrate how the A12 landscaping will ultimately dovetail with the Quarry's restoration scheme, and we therefore seek further information. In addition, the realignment of Burghey Brook Ordinary Watercourse would include a sharp bend south of the A12 and new roundabout, to the northwest of Coleman's Quarry. This should be altered to reinstate it closer to its existing line. Furthermore, the watercourse could be enhanced for biodiversity in the long term by improvements to its morphology.

Adequacy of Response

9.6.20. The new A12 proposals have the potential to create a sizable adverse impact upon the local habitats and species due to the nature of this large and linear development. We do not consider that sufficient information has yet been provided by the Scheme to ensure that all impacts can be adequately mitigated and compensated. We consider that a wider range of habitats might provide long term biodiversity benefits.

9.6.21. Insufficient consideration has been given to the veteran (irreplaceable habitat) and potential trees that may be affected by the proposals.

9.6.22. It is also unclear how the Scheme would ensure adequate Priority habitat provision relating to the restoration of Colemans Farm Quarry to meet the requirements of Policy S12 of the Essex Minerals Local Plan 2014 and the Mineral Site Restoration for Biodiversity Supplementary Planning Guidance .

9.7. Historic Environment and Buildings

Historic Environment

Local Issues

9.7.1. The Essex Historic Environment Record (HER) identifies a number of non-designated heritage assets lying within the Order Limits. Within the area between Witham and Kelvedon there are extensive deposits recorded from cropmark evidence indicating a multi-period landscape, with the known features, some of which are Scheduled Monuments, comprising burials of Neolithic and Saxon date.

9.7.2. The route of the existing A12 follows a Roman precursor for much of its length east of Chelmsford (Roman Caesaromagus). Although it is likely that evidence of the Roman road would have been removed by construction of the existing A12, it is possible that it could be preserved in places. The Roman Road would have influenced the development of settlements and activity along its length.

9.7.3. Over 18 new archaeology sites have been identified through the archaeological evaluation process in addition to sites recorded on the Essex HER. The sites discovered reveal evidence of settlement, industry, burial and agricultural practises over a long period of time across the landscape and contribute to the understanding of the area. Of significance is the potential for the earliest prehistoric period, the Palaeolithic.

9.7.4. The East of England is recognized as an internationally important area for the study of the Palaeolithic. The proposed scheme passes through a part of Essex where geological conditions are considered suitable for the preservation of in situ remains and palaeoenvironmental evidence from this period including Hoxnian lake deposits recorded at Marks Tey and at Rivenhall. These deposits have been positively identified through evaluation as lying within the Order limits, any sites of in situ Palaeolithic remains would be considered very rare and if discovered would be of national or possibly international significance.

9.7.5. Construction of the proposed scheme would result in adverse impacts on archaeological remains across a substantial area. Place Services Historic Environment Officers have been working with the applicants through Jacobs and their archaeological contractors to try and ensure that an appropriate assessment of the archaeological impact of the proposed scheme was undertaken to support the application and an appropriate mitigation strategy proposed.

Adequacy of Response

9.7.6. The impact to known and unknown archaeological, Palaeolithic and palaeoenvironmental remains has been considered within the Environmental Statement Volume 6.1 Chapter 7 Cultural Heritage. This is supported by six technical appendices A7.2 to A7.8. The Archaeological Desk-Based Assessment (Appendix A7.2), a Palaeolithic Desk-Based Assessment (A7.3), Aerial Investigation and Mapping (AIM) Report (A7.4), Geophysical Survey (A7. 5 and A.6), a trial trench evaluation report (A7.7) and a Palaeolithic and Palaeoenvironmental Evaluation Report (A7.8).

9.7.7. The archaeological desk-based assessment, AIM and geophysical surveys have provided a good understanding of the archaeological potential within the Order Limits.

9.7.8. The Palaeolithic Desk Based Assessment (6.1 Environmental Statement Appendix 7.3 Palaeolithic DBA) covered only part of the Order Limits, those areas of the route not covered have not been assessed for Palaeolithic potential and they should be properly characterised in a further stage of works.

9.7.9. Archaeological evaluation for the later periods by trial trenching was conducted throughout the Order Limits to test the interpretation of heritage assets identified from desk-based sources, as well as those identified by the geophysical survey and AIM, and also to identify archaeological remains which may not have been identified through non-intrusive methods. Works were undertaken in collaboration and to the satisfaction of the Historic Environment Officers. The trial trenching was successful in identifying new sites as well as providing additional data on previously recorded sites and has contributed to the understanding of the archaeological potential of the area within the order limits.

9.7.10. The scope of the non-intrusive evaluation works undertaken has been extensive and covered the majority of the areas within the order limits. Areas that have not been evaluated through intrusive methods have been included in the mitigation proposals for further work.

9.7.11. There are areas within the scheme that were not included in the Palaeolithic and palaeoenvironmental field evaluation including areas of known high potential and significance. The Palaeolithic and palaeoenvironmental evaluation has not provided full coverage of the order limits and the works carried out have been based on initial design schemes where impact to deeply buried geoarchaeological deposits were predicted.

9.7.12. The Palaeolithic and palaeoenvironmental fieldwork carried out so far has facilitated the refinement of geological modelling in targeted areas which is the first step required to aid in the identification of deposits with high Palaeolithic and paleoenvironmental potential. Further evaluation will be required across the scheme to achieve this with any confidence,

most importantly in areas where no purposive investigation has yet taken place. It is suggested that the work where the potential for significant Palaeolithic and palaeoenvironmental deposits needs to be established in the first instance is concentrated in areas where impact from the scheme is likely to be high.

9.7.13. The submitted trial trench evaluation report (6.1 Environmental Statement Appendix 7.7) is a draft version that required considerable edits. Comments have been provided to the archaeological consultant and a revised version of the report has been submitted for comment. To ensure that an accurate agreed mitigation strategy is defined a revised updated report should be submitted as part of the DCO application as soon as possible and definitely prior to determination.

9.7.14. The submitted Archaeological Mitigation Strategy (6.1 Environmental Statement: Appendix 7.10 Archaeological Mitigation strategy) is fairly comprehensive and will provide a guide to the archaeological contractors eventually producing the detailed Written Schemes of Investigations for each of the sites. It would be beneficial to provide a separate overarching Written Scheme of Investigation (WSI) within the DCO submission so that the approach to the more detailed archaeological work can be assessed. The archaeological mitigation strategy is agreed in part, however revisions will be required and resubmitted in advance of a decision being made. The archaeological mitigation strategy for Palaeolithic and palaeoenvironmental remains is not yet agreed.

9.7.15. The mitigation strategy proposed for the 4 areas of high Palaeolithic potential that have been identified to date includes further evaluation to aid more detailed mapping of deposits of high Palaeolithic potential, however the extent and timetable for this is not clear and there is no consideration for the potential for preservation in situ should nationally significant deposits or sites be discovered which will be impacted upon by the scheme. Further evaluation should be completed prior to the detailed design phase to provide flexibility for scheme design change and therefore provide the opportunity for preservation in situ should nationally important sites of Palaeolithic archaeology be identified.

Conclusion

9.7.16. There are a number of archaeological remains, in and close to the Order Limits, which would be adversely affected by the construction of the Proposed Development. It is considered that the main impact from A12 widening will occur during the advanced works and construction phase and the archaeology focus has been on these.

9.7.17. The assessment concludes that the Proposed Scheme is predicted to have a moderate residual adverse effect on archaeology. The council agree that there will be moderate adverse residual effects from the Proposed Development on many of the archaeological remains that were revealed as part of the archaeological evaluation, however the significance of potential Palaeolithic sites has not yet been established through the fieldwork undertaken and any identified Palaeolithic sites would be considered of high significance. It is accepted that the identification and investigation of Palaeolithic sites is difficult on a scheme of this size and further consideration of the potential for identification and, if required, preservation will need to be considered within the mitigation strategy.

9.7.18. The Council agrees that direct impact on the remainder of the archaeology that has been fully assessed can be mitigated through a programme of archaeological works that will be secured through a programme of an agreed WSI's and will continue to work with the applicant's archaeological consultant and Historic England to further develop and reach an agreement on the detail within the overarching Outline WSI

9.7.19. Discussions on mitigation requirements have been taking place with the archaeological consultant and a draft WSI has been provided to us for comment. Once agreed this should also be submitted as part of the DCO process.

9.7.20. Further work is still required to understand the impact of the scheme on Palaeolithic and paleoenvironmental remains of possible national significance and the identification of sites proposed for mitigation will need to be re-considered and revised in line with the specialists' recommendations within 6.1 Environmental Statement Appendix 7.8. It is anticipated that further areas will be required to be considered for mitigation based on current understanding of known impacts from the scheme.

9.7.21. It is considered there would be scope to demonstrate a commitment to delivering enhanced public understanding/benefit and legacy as part of the mitigation considering the significant size of the scheme and the interest in the heritage of the area. The details of outreach should be included within the overarching WSI.

9.7.22. The role of the Local Authority curators in the monitoring process needs to be clearly and consistently defined within the various documents where this is discussed but especially in Appendix 7.10 Archaeological Mitigation Strategy and in the REAC Section 6.5 appendix A Register of Environmental Actions and Commitments.

9.7.23. Within a date of one year from completion of fieldwork, a post excavation assessment must be completed, and provision made for analysis, archive deposition, publication and dissemination of results secured in accordance with a scheme-wide Updated Project Design and timetable. Full details of the scope and extent of the required work are contained in the

Archaeological Mitigation Strategy in Appendix 7.10 of the Environmental Statement [TR010060/APP/6.3].

Historic Buildings

9.7.24. No designated built heritage assets will be directly affected by the development. The settings of a number of designated heritage assets would be subject to indirect effects from the scheme, from both construction and operational phases.

9.7.25. The Heritage Impact Assessment Summary Tables provide information on the levels of impact, its duration and mitigation measures. Where impacts have been identified to designated and non-designated heritage assets, overall, the vast majority of the assessment of these levels of impact seems appropriate. The Gazetteer of Heritage Assets and the Heritage Impact Assessment Summary tables are comprehensive, with the former providing a sufficient description of the asset (in the Gazetteer it would be helpful, where applicable, to include a street address and post code for assets such as listed and unlisted buildings, to enable their locations to be easily found on mapping).

9.7.26. The main impacts from the HGV activity and piling generated by the construction phase of the development have been identified in the ES. Details of the standard mitigation measures to reduce noise and vibration during construction are provided in Section 12.10 of Chapter 12: Noise and Vibration [TR010060/APP/6.1]. Noise and vibration from construction activities would be controlled by employing Best Practicable Means (BPM). Monitoring during construction is proposed to be carried out to ensure ongoing compliance. The monitoring is to include physical measurements and observational checks is also suggested (ES, Appendix K: Noise and Vibration Management Plan).

9.7.27. The targeted monitoring of impacts from the construction phase on built heritage assets, including vibration from diverted traffic in Conservation Areas and the vibration affecting historic buildings would be beneficial and should be considered. This may ensure continued effective mitigation from such impacts and the continued consultation with homeowners and residents during construction would allow any unforeseen problems to be addressed. The council notes standard guidance on the evaluation of building vibration with respect to annoyance and comfort is referenced (6.3 ES appendix 12.1), yet the sensitivity of historic buildings is not specifically considered. Historic timber-framed buildings may be particularly susceptible to damage from vibration, with effects ranging from structural damage to minor cracks on internal and external finishes. Where standard mitigation measures are necessary to mitigate environmental impacts, such as noise, dust and vibration, targeted monitoring of historic buildings to ensure the effectiveness of mitigation

measures would be beneficial, as well as ongoing communications with homeowners and stakeholders (such as parish councils).

9.7.28. Table 5.1 of the Archaeological Management Plan sets out the Sites requiring archaeological mitigation. Regarding built heritage assets, the photographic recording, removal, storage and reinstatement in a new location of two distance marker posts on the Chelmer and Blackwater Navigation (Assets 47 and 48) is proposed. The relocation of these two non-designated heritage assets is to be as close as possible to their original setting. The Impact Assessment states that the residual impact on these two low value assets, resulting from their relocation is considered to be slight. Yet their relocation, even to a position close by, will diminish their historical integrity to a degree. A moderate level of residual impact would seem a more fitting assessment in this instance.

9.7.29. The photographic recording of a section of a water feeder ditch for the Chelmer and Blackwater Canal (Asset 43), is proposed to preserve a record of the affected part of the asset before its loss. This approach is appropriate.

9.7.30. Level 2 historic landscape recording is proposed prior to woks affecting the Boreham House, Landscape Park, to ensure a record is made of the asset and its setting before construction. This is acceptable.

9.7.31. The Historic England Level 2 recording of the affected elements of six historic landscape types (HLT 7, 11, 12, 13 and 14) is proposed to ensure a record of their condition is made before construction. This approach is also appropriate.

9.7.32. With regard to the assessment methodology, the 300m study area for all heritage assets and the wider study area of 1km for impacts on the setting of designated heritage assets is appropriate. The latter is intended to assess potential impacts on scheduled monuments, listed buildings (all grades), registered battlefields, registered parks and gardens, and conservation areas. This approach is fitting.

9.7.33. However, the DBA places Conservation Areas in the same ‘medium value’ category as non-designated heritage assets. However Conservation Areas, like Listed buildings are designated assets and are protected under Part II of the Planning (Listed Building and Conservation Areas) Act 1990 (Section 72). In addition, the policies of the NPPF that are applicable to designated heritage assets include Conservation Areas. There is only one policy (203) which is intended for non-designated heritage assets. It would be fitting and in line with planning policies and guidance to consider a Conservation Area as a ‘High Value’ asset and the council recommends a revision to reflect this. The review of the magnitude of potential impacts on Conservation Areas may be required as a result, particularly Kelvedon Conservation Area, the southwestern end of which is adjacent to the site boundary.

9.8. Landscape and Visual Impacts

9.8.1. The following landscape and visual observations have been made following a desktop study of the Landscape and Visual Chapter (8) of the Environmental Statement undertaken by A12 Project Team & National Highways. A detailed review of this assessment and other relevant supporting information has been undertaken to establish whether the methodology, baseline review and assessment findings are deemed appropriate to inform appropriate decision making.

9.8.2. The Landscape and Visual Impact Assessment (LVIA) follows the principles set out in the third edition of "Guidelines for Landscape and Visual Impact Assessment" (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013) and follows the methodology presented in the Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects, Revision 2 (Highways England, 2020b). The assessment of landscape and visual effects was based on a combination of sensitivity and magnitude of change using the assessment matrix included in IAN 135/10 Landscape and Visual Effects Assessment.

9.8.3. In regard to national policy, the National Planning Policy Framework (NPPF) was published by the Ministry of Housing, Communities & Local Government (MHCLG) and last updated in July 2021. The NPPF includes for the conservation and enhancement of the natural environment by protecting and enhancing “valued landscapes” and sites of biodiversity or geological value / soils.

9.8.4. In particular, Paragraph 130 states that *‘Planning policies and decisions should ensure that developments… are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities)”.*

9.8.5. Furthermore, Paragraph 174 states that *“Planning policies and decisions should contribute to and enhance the natural and local environment by: (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland”.*

Landscape Character

9.8.6. Natural England have produced a framework of 159 countrywide landscape profiles for England, resulting in the ‘National Character Areas’ (NCAs). Countryside Character Volume 6: East of England identifies the site as mostly lying within NCA 86 ‘South Suffolk and North

Essex Claylands' with a section at the north eastern extent (Marks Tey) falling within NCA 111 'Northern Thames Basin'.

9.8.7. Profiles 86 and 111 include several 'Statements of Environmental Opportunity' (SEOs) and 'Landscape opportunities' relevant to the DCO. This includes "extending and linking woodland sites, through the expansion and enhancement of semi-natural linear features such as hedgebanks, streams, sunken hedged lanes, grass verges and farm woodlands, enhancing biodiversity and landscape character" and "restoring the connectivity of key habitats".

9.8.8. At a local scale, the landscape within Chelmsford, Braintree and Maldon districts has been assessed within the Braintree, Brentwood, Chelmsford, Maldon and Uttlesford Landscape Character Assessment (Chris Blandford Associates, 2006). At the north-eastern extent of the study area, around Marks Tey, the local landscape is assessed within the Colchester Borough Landscape Character Assessment (Chris Blandford Associates, 2005).

9.8.9. All agreed LCAs associated with the study area have been assessed as part of LVIA. It's accepted that the NCAs and regional LCAs have not been separately assessed and instead have been considered as part of the assessment of the local LCAs. We also welcome the addition of site appraisal findings in the LCA assessment.

9.8.10. The assessment concludes that the Proposed Scheme is predicted to have a moderate residual adverse effect (Year 15 of operation) on local landscape character areas. The council generally agrees with this judgement because although the proposed mitigation measures (appropriate woodland planting, individual trees along the realigned roads, tall screen planting and shrubs) will reduce the residual effects to some extent. The introduction of additional highway structures will undoubtedly cause a permanent change that affects land use, field patterns and overall character.

Visual Amenity

9.8.11. Visual effects are a result of the sensitivity of visual receptors (people who will experience changes to existing views) to the proposed development and the magnitude of those changes. The appraisal has identified visual receptors within the Study Area that are likely to have visibility of the Proposed Development. These include [but are not limited to]; PRoW users, Cycle routes, residential properties, users of public open space and road users.

9.8.12. The site visits and photography used to inform the assessment were undertaken in summer and winter months to show visibility of the site both in terms of worst-case scenario (deciduous trees have no leaf cover) and best-case scenario (leaf cover), which is welcomed.

9.8.13. It's been judged that there will be residual significant visual effects in year 15 for visual receptors at 11 of the 36 representative viewpoints assessed, which is agreed. In these locations, the presence of major new structures or restored borrow pits would remain a prominent feature of the view, or significantly change the character of the view, despite established mitigation planting.

9.8.14. Notable impacts include [but are not limited to] users of the national cycle route (Viewpoint 11. Representative view north-east from Little Braxted Lane/National Cycle Route 16.) At Year 15, mitigation planting, including intermittent trees and shrubs and woodland planting will have established along the realigned Little Braxted Lane and along the offline bypass between J22 and J23. However, the presence of major infrastructure and lighting at J22 would remain a noticeable feature of the view, in winter and in summer, and given the proposed scheme will be a new permanent feature in the view, the significance of effect for users of national cycle route is deemed to be large adverse.

9.8.15. Similarly, users of the PROW and resident within private properties in Potts Green (Viewpoint 22 PRoW 144_19 near Doggets Hammer Farm (grade II listed)) will experience a large adverse effect (significant) at Year 15 despite mitigation planting. This is due to the proximity to the highway, which given the views rural context, would remain noticeable, in winter and in summer.

Adequacy of Response and Conclusion

9.8.16. Chapter 8 Table 8.16 (Application Document Ref: TR010060/APP/6.1) provides a summary of significant residual landscape effects and significant residual visual effects along with a summary of the description of effect during operation in year 15, mitigation measures and mitigation mechanism. The overall long-term magnitude and residual significance of effect of the proposed scheme on local landscape character and visual amenity is considered to be moderate adverse and, therefore, significant. We agree with these findings and the concluding significance of effect(s) for all landscape and visual receptors. Where are judgements may differ, these are not deemed significant.

9.8.17. We note that many of the identified visual receptors that experience residual adverse effects (Year 15 - significant) have been judged as large adverse impacts. These are predominately users of the PRoWs and residents within private properties, which are highly sensitive receptors and therefore are of material consideration.

9.8.18. Furthermore, though we welcome the landscape mitigation measures presented within Section 8.10 of Chapter 8 and illustrated on the Environmental Masterplan on Figure 2.1 (Reference: TR010060/APP/6.2). We note that potentially 380 trees will be removed,

including potential veteran trees. To date, no veteran tree survey has been undertaken to constitute which trees are veteran and/or ancient or candidate veteran trees.

9.9. Minerals and Waste

Summary

9.9.1. The Mineral and Waste Planning Authority (MWPA) notes that the proposed scheme will, without prior extraction, result in the sterilisation of land safeguarded due to it containing deposits of sand and gravel, and brick clay. It is further noted that no prior extraction of aggregate is proposed, including through borrow pits, and that all of the aggregate that will be used in developing the scheme will therefore be required to be imported. It is however welcomed that the potential of importing certain bulk construction materials by rail, using the rail head terminals located at either end of the proposed scheme in Chelmsford and Marks Tey, where it is environmentally and economically feasible to do, so will be investigated. However, such an assessment has yet to be undertaken.

9.9.2. In summary, the MWPA considers that a more positive, sustainable approach to the use of finite, unexcavated minerals could potentially have been realised if more consideration had been given to the sustainable use of minerals within the Order Limits of the scheme earlier in the development of the scheme. This relates to both the potential to prior extract mineral across all or part of the site so as not to sterilise finite resources as well as the potential for a more sustainable use of borrow pits, both of which would also act to reduce the import of minerals to the site. It is noted that the Colemans Farm Quarry has reconfigured its previously permitted scheme of works to avoid the sterilisation of mineral as a result of the proposed A12 route and therefore it is considered that more opportunities for prior extraction could have been realised within the Order Limits. That said, the MWPA accepts that it has no information to demonstrate that prior extraction opportunities would definitely exist within the Order Limits, and further accepts that further exploration of the potential for prior extraction of mineral now seems to be not practical as the potential benefit of doing so is not outweighed in the planning balance by the significant delays that would now result to the strategic benefits that the proposed development would bring.

9.9.3. It is noted that the Minerals Resource Assessment (MRA) sets out a number of arguments against the practicality and environmental feasibility of prior extraction. The MWPA does not find all of these arguments to be relevant, and the reasoning is set out below. To clarify, whilst the MWPA considers some of the reasoning against prior extraction to not be material or relevant, the MWPA accepts the wider conclusion that prior extraction is not practical and therefore does not raise an objection on this basis.

9.9.4. The MWPA accepts the findings of the Minerals Infrastructure Assessment (MIA).

9.9.5. The MWPA accepts the findings of the Waste Infrastructure Assessment (WIA).

Safeguarding Mineral Resources

9.9.6. The Executive Summary of the Mineral Resource Assessment (MRA) notes that the Greater Essex Local Aggregate Assessment 2021 (reflecting the position at the end of 2020) reported permitted sand and gravel reserves to be 33.59 Mt, which based on the 10-year sales gives a landbank of 10.3 years and exceeds the seven-year landbank requirement required by the NPPF (paragraph 213, f). It is further noted that as of 31st December 2021, there were four pending planning permissions across Greater Essex which if approved would add a further 9.5Mt of sand and gravel further increasing the landbank. The MRA concludes by stating that it is not considered that the proposed scheme would significantly affect mineral/aggregate reserves, due to there being sufficient supply.

9.9.7. On these matters, the MWPA notes that the sand and gravel landbank is required to be calculated based on the plan apportionment set out in Policy S6 of the Essex Minerals Local Plan 2014. At 4.31mtpa, this gives a landbank of 7.79 years which, whilst above the NPPF requirement, is not as significantly so as the MRA sets out. The MWPA further notes that this single scheme would sterilise approximately a third of the total amount of resource currently consented for extraction in the County.

9.9.8. On a similar theme, Paragraph 2.2.3 of the MRA sets out a percentage of the total Mineral Safeguarded Area (MSA) for both sand and gravel (0.5%), and brick clay (3.4%), within Greater Essex that would be sterilised by the proposed development. However, these calculations appear to be based on the full extent of the resource and make no allowance for MSA land that would not be feasible to extract as it is, for example, within an urban area, or where extraction would be problematic as the site is designated for another reason of value or amenity.

9.9.9. That aside, it is important to note that matters of mineral abundance, either that permitted for extraction or otherwise, are not relevant when considering whether, in the planning balance, it is appropriate to sterilise mineral resources. As set out in NPPF Paragraph 210d, the appropriate test is whether it is 'practical and environmentally feasible' to prior extract minerals ahead of non-mineral development taking place. The MWPA however wishes to raise this matter simply to point out that the calculations are somewhat misleading with regards to the total amount of resource that is genuinely available. Additionally, the MRA itself notes with respect to land within a MSA pertaining to this application that 'The variation of the mineral and overburden thicknesses impacts upon the working ratio which,

in certain places could make mineral extraction potentially uneconomically workable.' Applying this principle to MSA land in general would further act to reduce the total amount of MSA land genuinely available for mineral extraction as is suggested exists through the MRA.

9.9.10. The MRA further notes that the scheme is to be supported by four borrow pits. It is further stated that these will be used to source general fill materials. Paragraph 2.4.2 of the MRA notes that there are a number of sustainability benefits of using borrow pits. However, whilst the description of Borrow Pits "I" and "J" state that if encountered, Glaciofluvial and River Terrace Deposits would be used as a Class 1 or 6 general or selected granular fill.

9.9.11. The MRA notes at Paragraph 2.4.7 that the largest quantity of materials to be used in construction of the proposed scheme would likely be earthworks materials, aggregates for road foundation materials, asphalt aggregates and drainage/duct aggregates. It is assumed within the MRA at this stage that all these materials, except for the site won material from earthworks/ borrow pits, would be imported into the site as they are unlikely to be available in the borrow pits. It is not certain from the MRA why aggregates cannot be raised on site for use in a scheme of this scale from the selected borrow pits, or why borrow pits haven't been specifically selected to enable that use. Despite the fact that the scheme is expected to sterilise over 10 million tonnes of sand and gravel (MRA, Executive Summary), the total aggregate requirement for the scheme is to be imported into the site.

9.9.12. As previously stated, the tests for the appropriateness of prior extraction ahead of non-mineral development taking place is whether it is practical and environmentally feasible. With regards to the environmental feasibility of prior extraction, the Executive Summary includes a section on this matter, stating that *'If prior extraction were to be carried out, it would be necessary to employ a large compliment of plant and equipment to excavate the mineral resource, which would result in adverse environmental impacts in terms of increased noise, dust emissions, visual impact and potential impact to groundwater'*. It is further stated that *'Prior extraction of these minerals would also require significant heavy goods vehicle (HGV) movements to transport resource off-site, and to import a large volume of inert waste to infill the voids arising from extraction*". This is accepted in principle, but any prior extraction needs to be considered in the context of the construction of the proposed scheme, which will be associated with its own significant plant and HGV movements.

9.9.13. Section 7 of the MWRA is entitled 'Constraints Impacting Upon the Practicality of Mineral Extraction'. This acts to list those constraints, largely environmental, applying to the development of the A12 itself but does not attempt to set out whether those constraints

impact the practicality of prior extraction specifically. Presumably the impacts on these listed constraints are considered to be mitigatable to acceptable levels with respect to the delivery of the A12 proposals due to the submission of the planning application. It is uncertain whether that mitigation would address any impact on the highlighted constraints with respect to prior extraction, or more importantly fail to do so. The MWPA however notes that there would be little merit in further developing this section due to the conclusion set out below with regards to the practicality of extraction.

9.9.14. Section 8 sets out a financial appraisal of the potential for prior extraction of the sand and gravel and addresses other matters that would fall within the test of whether prior extraction was 'practical'. Section 8 takes as an assumption that any prior extracted mineral would need to be taken off-site at a nearby quarry for processing ahead of any potential sale. Whilst it is not demonstrated that mineral couldn't be processed at the development site, the MWPA acknowledges that this is not currently considered as part of the scheme and factoring in such a consideration would require the applied for scheme to be revisited, delaying the project as a whole. At this stage, this is accepted as not being practical.

9.9.15. It is also accepted that for any of the identified quarry sites to take the volumes of mineral that would arise from the development site, there would likely be operational issues that would require addressing through new or amended planning permissions. That is assuming that these operational issues could be accommodated in principle in any event when considering the mineral operations in their wider context as, for example, would be the case on the working timescales of Bulls Lodge Quarry as a result of taking additional material and the resultant impact on the delivery of Chelmsford Garden Community.

9.9.16. On these points, the MWPA would note that the current safeguarding policy approach has been in place since 2014 and it has raised mineral safeguarding issues in relation to this scheme since 2019. As such, these issues could have been explored in more detail from at least that latter date, including seeking potential operator interest in working at the project site or taking some or all of any prior extracted mineral to an existing quarry within a viable distance. Where the MRA states that *'This would inevitably lead to delays in the construction programme and delivery of the proposed scheme.'* and the conclusion that 'there is little scope for delays to the programme', this is at least due in part to the issue not being addressed until late in the design of the scheme.

9.9.17. Statements in relation to the 16 proximal mineral sites such as '*In all likelihood, none of the sites have the capacity to take such a volume of material*' and '*Given the remaining reserves at Bulls Lodge Quarry, Colemans Quarry and Colchester Quarry, none of the operators are likely to be interested in taking any mineral resources from the proposed scheme*.' are

considered to be largely unsubstantiated. As set out in the MRA, the potential sterilisation of reserves at the permitted Colemans Farm has been addressed by the rephasing of the site to enable the mineral which would have been beneath the A12 to be extracted and restored prior to the DCO scheme being delivered. There could have been further opportunities to reduce the sterilisation of minerals.

9.9.18. With respect to the statement made at Paragraph 10.1.2 of the MRA, namely that *'To extract all 10.121Mt of sand and gravel in approximately 4 years would be a substantial undertaking, requiring an enormous fleet of plant and machinery which would greatly exceed the operation of a normal quarry which inevitably could result in adverse environmental impacts etc.'*, it is noted that the practicability of prior extraction could have been explored in advance of the delivery of non-mineral development such that this timeframe would not have been applicable. There is also no need to deliver a full programme of prior extraction across the entirety of the site if this can be demonstrated to not be 'practical', and the MRA does not consider any part-extraction of the resource.

9.9.19. Further with respect to the timetable, Paragraph 8.3.28 of the MRA states that with respect to restoration of the mineral void that would result from prior extraction *'Allowing for compaction of the inert material, it is possible that approximately 10.63Mt of inert material would be required. Based on the availability of inert material, hypothetically, if the proposed scheme were able to source all available inert material, the infilling and compaction programme could take at least c. 3 - 4 years.'* This is not disputed although again, the earlier that prior extraction is considered, the more practical the activity becomes. This issue with respect to overall timescales is again impacted by the assumption that the entirety of the resource requires prior extraction, or there can be no prior extraction at all. There may have been parts of the route more suitable, where mineral exists closest to the surface and could have been extracted and the land restored to a timetable more befitting the wider project aspirations, with said mineral being consumed on-site.

9.9.20. The financial appraisal within Section 8 takes as its starting position the fact that the mineral would need to be exported off-site without processing, which is stated as significantly impacting on economic viability. As previously stated in this response, it is noted that prior extraction with on-site processing has not been considered as part of the scheme and such a scenario would require the whole scheme to be revisited, delaying the project as a whole, and this is not considered to be practical at this stage. The MWPA notes that a number of other assumptions have been made within the financial appraisal and that it has not been shared or tested with potential operators. As a matter of principle, the MWPA questions whether commercial prior extraction opportunities across such a

significant area are entirely absent, particularly as there is no requirement to extract the entire resource across the entirety of the site. The MWPA however accepts that it has no evidence to refute the figures presented. This is relevant in the context of NPPF Paragraph 212 which provides another starting point for mineral sterilisation, stating that 'Local planning authorities should not normally permit other development proposals in Mineral Safeguarding Areas if it might constrain potential future use for mineral working. Notably, the requirement for affected mineral is to only have the 'potential' for future use for it to be required to be considered under this paragraph.

9.9.21. The examining authority will therefore have to be satisfied that the justification for the proposed route of the A12 outweighs any mineral resource safeguarding considerations.

9.9.22. Returning to the financial appraisal itself, whilst no significant weight is placed on the specifics of the calculations, the MWPA supports the principle that it would not be a practical approach to take on a significant financial loss as a result of prior extraction in the context of the delivery of a strategic infrastructure scheme.

9.9.23. In summary of the above points, the MWPA notes that timetable implications are not an explicit test of whether prior extraction is appropriate but would factor into whether the activity was 'practical'. Given that the MWPA is required to assess this application at the current point in time, it is accepted that prior extraction would impact on the delivery of the proposed scheme by 2027 on current estimates. Any further work to develop the quantified financial appraisal is not considered to be justified as the MWPA acknowledges that there would be a significant impact on the project timetable with regards to the need to reconsider the practicality of part or full prior extraction across the site, including in the context of on-site processing as well as further exploration of the potential for existing quarries to take the mineral. There would be further delay due to the need to follow planning processes for granting permission for extraction and restoration followed by the activity of extraction and restoration itself. The MWPA would accept a conclusion that the implications on the timetable for prior extraction to be further considered across the entirety of the Order Limits do not outweigh the strategic benefits of the scheme. The MWPA would however note that the proposal will sterilise significant amounts of finite sand and gravel resources, and the NPPF Paragraph 212 requirement to make best use of minerals to secure their long-term conservation may have been better realised if this issue was assessed in more detail at earlier stages in the planning application process. That said, the MWPA accepts that it has no information to demonstrate that prior extraction opportunities would definitely exist within the Order Limits.

9.9.24. With respect to brick clay specifically, the MRA states at Paragraph 10.2.5 that 'The MLP requires the maintenance of at least a 25 year landbank at both the Bulmer Brickfield and Marks Tey sites. When the MLP was adopted in July 2014, there were sufficient permitted reserves at both operations to achieve the 25-year landbank. Therefore, prior extraction of brick clay is not necessary.'

9.9.25. The MWPA notes that this is not the correct application of the NPPF test in relation to sterilisation. The 25 year requirement relates to a requirement made of the MWPA to ensure that there is, in perpetuity, 25 years of brick clay supply permitted to be extracted. Whether there are 25 years' worth of resource permitted at any point in time is irrelevant to the NPPF test of whether it is acceptable to sterilise mineral. As stated previously, abundance is not a material consideration when assessing the practicality of prior extraction. Even if that wasn't the case, it would be more appropriate to calculate permitted reserves at the point of submission of the DCO rather than a decade prior.

Safeguarding Mineral Infrastructure

9.9.26. The MWPA notes that its initial screening exercise was based on an 'Area of Search' rather than the subsequently refined Order Limits and that this acts to reduce the area of land covered by the DCO. This has resulted in a number of mineral infrastructure sites where safeguarding concerns were originally raised now falling outside of the scoping area.

9.9.27. Having considered the extent of the refined Order Limits, the MWPA accepts the overarching conclusion that, apart from Colemans Farm Quarry, it is considered unlikely that the proposed scheme would give rise to any loss of access to consented reserves, operational capacity or any other constraint to the operation of the remaining facilities. Any potential impact at facilities other than Colemans Farm Quarry are considered mitigatable through appropriate transport management plans.

9.9.28. With respect to Colemans Farm Quarry, it is noted that the planning application for the extension and re-phasing of the mineral extraction operations and restoration of the land along the alignment of the proposed scheme has since been resolved to be approved by the council (pending completion of a S106 legal agreement). As such, any potential impact is considered to have been addressed in assessing that application and will be mitigated through the planning permission and conditions attached to it.

Safeguarding Waste Infrastructure

9.9.29. The MWPA agrees with the conclusions made in the Waste Infrastructure Assessment, namely that it is considered unlikely that the safeguarded waste management infrastructure sites proximate to the scheme would be impacted by the proposed scheme or vice versa (through noise, dust, odour, visual or light) to the extent that it would

prejudice the efficient operation of these sites in line with their extant planning permissions. Indirect impacts are more commonly associated with more sensitive land uses such as residential developments that could limit the operation of these sites. Any impact is likely to be with regards to traffic during the construction phase, which could likely be mitigated through a transport management plan.

Conclusion

9.9.30. The MWPA has considered the arguments put forward in the MRA justifying the sterilisation of all mineral within the Order Limits. The MWPA concludes that given the extent of the application site, there could be the potential for prior extraction opportunities to exist which the MRA has not fully explored, which creates an issue with regards to conformity with NPPF Paragraph 212. However, no objection is raised in relation to this point. The MWPA accepts that it has no information to demonstrate that prior extraction opportunities would definitely exist within the Order Limits and the MWPA further accepts that the implications on the project timetable now (of carrying out a full assessment of the practicality of prior extraction across the entirety or part of the site, both in terms of whether processing can occur on site, as well as the timeframe for granting permission for mineral development and the carrying out of the activity itself) would be significant and possibly detrimental to the strategic benefits bought by the scheme. The MWPA recognises that the scheme will enable future housing development at scale, relieve traffic congestion on the existing A12 corridor and provide a strategic link for Essex and the wider east and southeast of England. Such delays as articulated above are not considered practical in the wider context of the benefits that the proposed development would bring. On that basis, the MWPA accepts that further exploration of the prior extraction of mineral is not practical.

9.9.31. The MWPA would however note that a more positive, sustainable approach could have been realised if more consideration had been given to the sustainable use of minerals within the Order Limits of the scheme earlier in the development of the scheme. This relates to both the potential to prior extract mineral across all or part of the site so as not to sterilise finite resources as well as the potential for a more sustainable use of borrow pits, both of which would also act to reduce the import of minerals to the site. It is however welcomed that the potential of importing certain bulk construction materials by rail, using the rail head terminals located at either end of the proposed scheme in Chelmsford and Marks Tey, where it is environmentally and economically feasible to do so will be investigated. However, such an assessment has yet to be undertaken.

9.9.32. Having considered the scheme on the basis of refined Order Limits, the MWPA accepts the overarching conclusion of the Minerals Infrastructure Impact Assessment that apart from Colemans Farm Quarry, it is considered unlikely that the proposed scheme would give rise to any loss of access to consented reserves, operational capacity or any other constraint to the operation of the remaining facilities. Following the resolution to grant a recent planning application, any potential impact on the workings of Colemans Farm Quarry are considered to be sufficiently addressed.

9.9.33. The MWPA agrees with the conclusions made in the Waste Infrastructure Assessment, namely that it is considered unlikely that the safeguarded waste management infrastructure sites proximate to the scheme would be impacted by the proposed scheme or vice versa.

Material Assets and Waste

9.9.34. Paragraph 11.1.4 of the ES recognises that '*Constructing the proposed scheme would require the use of large quantities of material assets and hence may result in potential impacts on the environment through the depletion of non-renewable natural resources, and sterilisation of mineral safeguarding sites. Conversely, constructing the proposed scheme would also result in large quantities of surplus materials and waste, leading to potential impacts on the available landfill void capacity.'*

9.9.35. With reference to Paragraph 11.1.7, it is accepted that measures have been put in place to minimise any impact on permitted mineral infrastructure, in particular Colemans Farm Quarry. However, in relation to the statement that *'Where reasonably practicable, the proposed scheme has reduced the unnecessary sterilisation of mineral resources'*, the MWPA would question this statement and considers that there may have been the potential to sterilise less mineral if the issue of prior extraction was more proactively addressed during the conceptualisation of this project. The MWPA does however accept that to revisit this issue at this point in the planning process would be disproportionate in relation to the strategic benefits the project would deliver. As such, the MWPA does not formally object on this basis.

9.9.36. Paragraph 11.5.9 states that *'There is limited information available at this stage regarding the precise material requirements and waste quantities associated with constructing the proposed scheme.*' Whilst the Environmental Statement (ES) states that these limitations are typical of an EIA, this limited information could impact on the MWPAs ability to determine any local impact of the scheme on the availability of consented material and the capacity of its waste facilities to accommodate waste arising from this project. Where

information is presented within the ES and assessed further below in this response, all assessments are made with the caveat that they are not based on the precise requirements of the scheme.

9.9.37. Paragraphs 11.5.12 and 11.5.13 state that whilst a degree of sub-regional discussion of likely significant effects has been included in the ES in response to the councils statutory consultation feedback for this aspect, this does not form the central basis of the assessment of likely significant effects for this aspect in accordance with DMRB LA 110. Such impacts are said to be scoped to the East of England region as the primary receptor for this aspect. Whilst the MWPA accepts the methodology set out in DMRB LA 110, it is nonetheless argued that the primary receptor is likely to be the county of Essex due to the economics of transporting minerals and waste. Such scoping also makes it problematic for the MWPA to determine specifically local impacts. The MWPA does however note that the methodology includes a consideration of a balance of the proximity principle and value for money principle. Paragraph 11.7.7 states that these distances would suggest that the proposed scheme is likely to have access to material suppliers and waste management facilities in the East of England (Greater Essex, Hertfordshire, Cambridgeshire and Suffolk), Greater London and the South East of England (Kent). With this recognised, it is however questioned why 'the East of England' is the scoped impact area when the mineral and waste markets fall partly within the East of England' but also part of other regions.

9.9.38. On a similar theme, Paragraph 11.6.11 states that *'At this stage, specific opportunities for materials recycling, recovery, disposal or specification for the use of particular materials have not been prescribed because the design is at a preliminary stage.'* Paragraph 11.6.12 states that '*Specific suppliers of construction materials and products have not been identified at this preliminary design stage'* and that *'Similarly, the waste that is likely to be generated by the proposed scheme has not been allocated to individual waste management facilities'* The MPWA accepts the statement at Paragraph 11.7.11 that *'Procurement rules mean that it is not possible to prescribe specific material suppliers and waste management facilities to be used during construction of the proposed scheme, and these rules prevent setting a precedent that would potentially tie the Principal Contractor to exclusive arrangements with specific material suppliers and waste management facilities.'*

9.9.39. Paragraph 11.8.48 onwards presents an assessment of the waste treatment, recycling and recovery baseline within the East of England and Greater Essex. It identifies 973 permitted transfer, treatment, metal recovery, incineration and use of waste sites located in the East of England region, and 329 waste management facilities (including waste transfer facilities) located in the Greater Essex sub-region. A table is also presented of combined throughputs

which acknowledges that capacity information, which would put the throughput in context, is not available. However, paragraph 11.8.53 subsequently concludes that '*This data indicates that there are likely to be sufficient opportunities for C&D waste arisings to be transferred, treated, recycled or recovered as appropriate within the second study area.'* The MWPA challenges this conclusion to the extent that it is not known whether opportunities exist to deal with waste arising from this project. This is because the headroom between capacity and throughput ie the potential for the various waste facilities to accommodate greater inputs, is unknown. It is also noted that not all facilities set out above would be available to the project, as recognised through Paragraph 11.7.7 of the ES, although it is also noted that the waste arisings have the potential to access facilities in other regions. That aside, it is accepted that there are numerous facilities with the potential to take waste of the type that will arise from this project. It is further accepted on the basis of the waste arisings data set out later in the ES that the waste likely to arise from the development of this scheme is not significant in the context of the total amount of waste managed within the County.

9.9.40. Paragraph 11.8.63 comments on landfill site and landfill allocations in Essex and Southend-on-Sea, noting that these strategic sites have been allocated to meet the identified shortfalls in landfill capacity over the plan period (2017 to 2032) in order to deliver the objective of net self-sufficiency in the plan area. Without having tested the evidence, this statement is not accepted to the extent that the allocations are considered to fully meet any future capacity gap that may arise over the Plan period.

9.9.41. Paragraph 11.8.80 states that available landfill capacity has been projected to 2027 through the use of the Microsoft Excel Forecast Function, and the results are presented in Table 11.18. Following an assessment of these figures, the MWPA presumes that due to two new landfill sites (Stanway Quarry Landfill and Dollymans Farm Landfill) gaining permission in 2019 and 2020, and thus adding 3.5mt of capacity so close to the projection base-date, the results of this forecast have been skewed. The table shows inert landfill capacity in Greater Essex increasing annually from 9.7mt in 2020 to 12.25mt in 2027. Even putting aside the fact that an annual increase in capacity clearly goes against the historical trend of capacity rising and falling, the 2027 capacity of 12.25mt would be nearly four times the amount of capacity available in 2019. The MWPA does not support this assessment. Forecasted landfill capacity should be based on a trend analysis of historic rates of capacity reduction, off-set by the assumed provision of additional capacity provided through undelivered site allocations in extant Waste Local Plans. The council's own, initial and unpublished forecasts suggest that even if all allocations within the extant Waste Local Plan were to come

forward, there could be a deficit of inert landfill capacity circa 2030. Without any new allocations, inert capacity could turn into a deficit by 2026. Whilst the council would not place any significant weight on these forecasts, they are presented here solely to suggest that the capacity forecasts presented in the Environmental Statement are not considered to be realistic. The MWPA has not sought to forecast landfill capacity at the regional level of the East of England, nor that area scoped in through Paragraph 11.7.7 of the ES. Therefore the MWPA does not agree that the data presents an accurate position of existing and forecast inert landfill capacity in Essex.

9.9.42. That said, the MWPA acknowledges Paragraph 11.8.86 which states that at least 90% (by weight) of non-hazardous C&D waste *'should'* be subjected to material recovery or diverted from landfill, and that 70% be weight *'shall'* be diverted from landfill as per National Highways requirements. The MWPA further acknowledges commitments throughout the ES to to re-use, recycle or recover waste on or off-site in order to divert material away from landfill. The MWPA welcomes the statements made at Paragraph 11.10.165 which includes those in relation to the production of a Sustainable Procurement Plan, implementing Design for Resource Efficiency Principles and maintaining a Site Waste Management Plan.

9.9.43. Table 11.21 sets out estimated C&D waste generation, recovery and disposal rates over the construction period of the project between 2024 – 2027. It identifies a number of waste recovery rates that have been benchmarked against the UK Statistics on Waste (Defra, 2022) and industry good practice landfill diversion rates from other infrastructure projects. Applying these, Paragraph 11.11.33 states that it is estimated that 40,059t (10,015tpa) and 32,044t (8,011tpa) of inert and non-hazardous waste could require disposal at inert and non-hazardous landfills respectively within the study area between 2024 and 2027. Paragraph 11.11.34 then states that this would be equivalent to a less than 1% reduction in inert and non-hazardous waste landfill capacity void space in both the East of England region and Greater Essex sub-region according to the amount of average annual inert and non-hazardous landfill capacity projected to be available.

9.9.44. The MWPA accepts the strong track record of CDE waste diversion rates within the UK, and accepts that consequently the resulting waste arisings requiring landfall would be relatively small compared to the total amount of waste material generated through delivery of the scheme. The MWPA cannot however accept the subsequent conclusion that the waste arisings would be the equivalent of a less than 1% reduction in inert and non-hazardous waste landfill capacity void space in both the East of England and the Greater Essex sub-region. This is because the results presented in Table 11.18 are not considered to be a realistic forecast and, at the regional level, are based on the 'East of England' region when

Paragraph 11.7.7 of the Environmental Statement notes that the proposed scheme is likely to have access to material suppliers and waste management facilities in the Greater Essex, Hertfordshire, Cambridgeshire and Suffolk), Greater London and the South East of England (Kent). In the absence of a more realistic capacity forecasting scenario, the MWPA cannot conclude that the project will not have a significant impact on the County's remaining waste management capacity as it relates to landfill. However, given the relatively small residual waste arisings projected, given as 0.7% and 0.4% respectively of the total annual inert and non-hazardous disposal rate (for all waste types), or 2.3% and 0.9% respectively for just C&D waste disposal in Greater Essex in 2020, the MWPA accepts that these arisings in isolation do not deviate from 'business as usual' and as such are not considered to be significant and therefore accepts that they are not material to the decision making process.

9.9.45. Paragraph 11.11.52 states that *'the 349,022tpa of total C&D waste estimated to be diverted from landfill would be equivalent to 4% and 11% respectively of the total C&D waste whose fate was recorded by the Environment Agency (2022a) as treatment, recovery, incineration, long term storage or other fates in the East of England region' (8.2Mt)* and Greater Essex sub-region (3.3Mt) in 2020. Although the appropriateness of scoping to the East of England region is questioned given the statements at Paragraph 11.7.7, the MWPA does not consider that the project will have a significant impact on the County's waste management capacity as it relates to non-final stage waste management. As such, the impact on non-final stage waste management capacity is not material to the decision-making process.

9.9.46. With regard to mineral consumption, Table 11.20 sets out that the project is assumed to consume 579,004t of construction material containing primary sand and gravel over the construction period 2024-2027. Even assuming this construction material is comprised entirely of sand and gravel, the total volume is approximately 15% of the annual rate of provision made in the currently Essex Minerals Local Plan, and when split evenly across the years of construction, amounts to 4% of the latest annual sales recorded in 2021. On that basis, the project is not expected to have a significant impact on the County's permitted reserves of sand and gravel, even when assuming all mineral was to be derived from Essex. As such, the impact on permitted reserves of sand and gravel is not material to the decision-making process.

9.9.47. The project is also forecasted to consume 1,407,486t of primary crushed rock, or 351,872tpa. Essex has no deposits of this mineral and therefore there will be no impact on the mineral resources of Essex itself. This material will be required to be imported by road or rail. The MWPA accepts that this represents a small proportion of the combines sales of this mineral in those regions where Essex traditionally sources this mineral from. The

Greater Essex Local Aggregate Assessment, reporting on the 2019 Aggregate Minerals survey, states that Greater Essex consumed 1,58mt of crushed rock in 2019. The annual take of the project would therefore be 22% of the total crushed rock consumption in Greater Essex in 2019. This is not considered to be an insignificant amount but the issue is one of import capacity rather than resource availability. There is a paucity of data when it comes to import capacity available through which to import this material. Further, it is outside of the MWPA's administrative responsibility to develop the capacity to import aggregates beyond safeguarding existing capacity and operating a suitably facilitatory policy framework within which applications to develop new capacity can come forward. As such, the MWPA has no comment to make on any local impact in relation to the crushed rock requirements for this project.

9.9.48. Paragraph 11.11.36 states that 'there is currently no hazardous waste landfill capacity within the East of England region nor is there likely to be any by the time the proposed scheme begins construction.' The MWPA accepts this as a likely assumption. Given the absence of such facilities in Essex, the MWPA makes no further comment in relation to hazardous waste arisings.

Conclusion

9.9.49. Following an assessment of the impact of delivering the project on the permitted mineral reserves and waste management capacity of the administrative area of Essex, the MWPA is satisfied with the conclusion made in ESS Chapter 11: Material Assets and Waste that assessed impacts result in not-significant effects, that is effects that are not material in the decision-making process.

9.10. Socio-Economics & Jobs and Skills

Local issues

9.10.1. Essex is home to some of the world's leading companies with concentrations of high-skill, high-wage jobs as well as two leading universities and cutting-edge skills providers. Economic growth is the engine that will drive and enable so many of the council's wider ambitions – from levelling up to net zero – as set out in Everyone's Essex.

9.10.2. Availability of officer time and resourcing has influenced the methodology for considering local socio-economic impacts. This section therefore focusses primarily on the impact on the six most populated settlements along the route (Chelmsford/Boreham/Hatfield Peverel/Kelvedon/Marks Tey/Witham). References to potential impacts on places further afield have been included where relevant (Colchester, Braintree, Tiptree, Harwich). Given

this wider geographic focus, the council's commentary generally focuses on the most likely and greatest impacts in absolute terms. These limitations may mean that some relatively significant but localised impacts may not be highlighted by the council, but we expect that District or Parish Councils will be better placed to identify and assess these.

Jobs and skills during construction phase

9.10.3. There is likely to be a positive economic impact during construction as a result of the project, with the creation of job opportunities and potential to increase skills to the residents of the local area, through the Employment and Skills Plan. The Environmental Statement estimates that the scheme could deliver 10,000 construction jobs over its lifetime.

9.10.4. The proposed development is a major project which could result in increased demand for construction skills and equipment at a time when other major projects may also commence with similar timeframes and result in shortages. The Construction Growth in Essex 2020-2040 report produced by MACE on behalf of the council suggested that major projects across the county will add 15,000 local labour demand at peak and that labour shortages are expected to peak in 2031.

9.10.5. The applicant should cooperate and work with relevant partners and use the Employment and Skills Plan to reduce the likelihood and severity of skills and construction worker shortages, as other projects may come forward within similar timeframes. Mitigation is likely to require investment in further education, apprentices and training within the local area to deliver the required workforce for the construction phase, in order to reduce the risk of disruption to this projects and other projects coming forward. The applicant should consider the potential opportunities resulting from looking at how this project will run alongside other projects and the potential employment opportunities that this could offer, including the potential for skills training programmes, shared apprenticeships and traineeships. Approaching this within the wider context of various concurring schemes will ensure that social value is maximised. The Employment and Skills Plan should include a commitment to ensure local economic benefit through job creation, training schemes and use of local contractors where possible.

9.10.6. The proposed development is a major project which could provide an opportunity to incorporate green methods of construction and tools. This would provide an opportunity to develop skills and employment opportunities in green methods of construction and civil engineering. The applicant should use the Employment and Skills Plan to look at how they

can maximise these opportunities and maximise the Social Value impact of the project locally.

9.10.7. We would expect the applicant to fully engage with local supply chains for labour, material and equipment. This not only adds to local economic benefit but also reduced greenhouse gas and pollutants deriving from extended travel.

Access for residents and businesses during construction phase

9.10.8. The project has the potential to have a significant impact on the large numbers of local residents that use the A12 to commute to their place of work and to local businesses that rely on their employees using the A12 to travel to their place of work. Census data shows that the main mode of transport used by residents in each of the local areas along this section of the A12, is through driving a car or van to their place of work.

9.10.9. For example, approximately 36% of Chelmsford local authority area's workforce lives outside the area with significant levels of commuting across North Essex, with over 13,000 people commuting from Braintree, Colchester and Maldon each day to work in Chelmsford (inward and outward commuting flows for Chelmsford are shown in the table below). A significant number of these residents will use the A12 to commute to their place of work and they, along with their employers, will be significantly impacted by the delays caused as a result of the project during the construction phase.

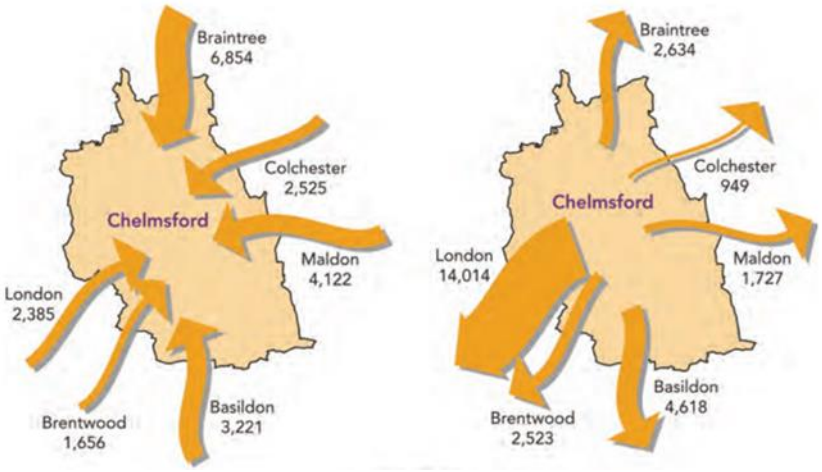

Figure 9-10: ONS Census 2011

9.10.10. Maldon and Braintree district residents also rely heavily on commuting to other areas of the county for employment and education and a number will use the section of the A12 and the roads that lead to the same that will be impacted through this project to do that.

9.10.11. In terms of consumer access to businesses, we note that Chelmsford is the key retail, business and service centre for Essex. Witham is a principal town centre, and Kelvedon and Hatfield Peverel are Key Service Villages providing various community facilities.

9.10.12. Local hauliers provide an example of businesses that are likely to be negatively impacted by the significant roadworks during construction, resulting in delays and/or longer journeys – with knock-on impacts on the cost of doing business, some of which may be passed onto customers through higher pricing, or lead to reduced competitiveness. We note that almost a third of jobs in Witham are in logistics and manufacturing.

9.10.13. There will also be potential negative impacts on those who do not use this section of the A12. For example, during construction there is a likelihood of disruption to bus services due to traffic management and construction activities (ES para 13.16.5). Also, the proposed replacement of the Bury Lane Bridge and the Station Road Bridge would potentially temporarily sever access to Hatfield Peverel railway station for residents in Hatfield Peverel south of the A12 with a new car park proposed for the duration of the works (ES para 13.16.6).

9.10.14. The applicant should therefore seek to minimise the disruption caused during the construction phase and allow access to be maintained as far as possible to mitigate the impact that the work will inevitably have on local residents and businesses.

Access for residents and businesses upon completion of the project

9.10.15. Upon completion of the project, potential positive impacts of the project include benefits for residents, businesses, could improve access for people to employment opportunities throughout the county.

9.10.16. The scheme is anticipated to result in reduced journey times of 9 minutes (Northbound in the evening peak) and almost 7 minutes (southbound in morning peak). The proposed scheme will save motorists as much as 1hr 20mins in a working week if they travel daily between Junctions 19 and 25. With reduced journey times on this stretch of the A12 (the scheme is expected to provide significant journey time savings worth £238.8m), this could make commuting for local residents more accessible and mean they have access to greater employment and education opportunities, which could increase skills levels and reduce unemployment in these areas. As commuting costs fall due to the journey time savings, some people who would otherwise be priced out of the labour market due to high commuting costs would now be able to seek employment (£6.3m benefits).

9.10.17. Similarly, businesses in the local areas could also benefit from greater accessibility for people to commute in to work within their businesses. For example, businesses in

Chelmsford may benefit from improved access to workers residing east of the city. We note that Hatfield Peverel and Kelvedon incorporate a high proportion of economically inactive residents (40%). Braintree and Colchester have neighbourhoods ranked in the 30% most deprived in the Country.

9.10.18. However, this could mean that local residents face greater competition for employment in local businesses and/or that local businesses could see a reduction in available labour as local residents may be more likely to commute out of the local area to seek employment in other areas of the county. We note that several neighbourhoods in Chelmsford are amongst the most deprived 20% and 30% in the Country

9.10.19. In terms of consumers accessing businesses, we note that around one-third of the workforce in Tiptree is in the retail and leisure sector. Tiptree and Maldon have neighbourhoods ranked in the 30% most deprived in the Country.

9.10.20. In terms of businesses receiving / delivering goods and services, we note that significant economic growth is expected at Freeport East.

Unlocking / accelerating new employment opportunities

9.10.21. The greater connectivity provided by the scheme could increase demand and values for employment sites close to the route, making development activity more viable. For example, the scheme could help unlock or accelerate two undeveloped employment land sites at Chelmsford Garden Community, where circa 15 Hectares or employment land have been allocated to the north-east of Chelmsford, and Witham Eastways, where 7 Hectares of employment land is awaiting development.

9.10.22. A number of existing sites along the route also have the potential to benefit from improved access, which may lead to higher employment or productivity in Chelmsford, Braintree and Colchester.

Adequacy of DCO

9.10.23. The structure and methodology of the Environmental Statement (ES) is generally accepted and consideration of impact on a community-by-community basis is appropriate. The economic case for the project is well made and it is generally accepted that the scheme will achieve socio economic benefits post construction. Essex County Council wish to minimise short term negative impacts during the construction phase of development.

9.10.24. The ES correctly identifies potentially affected settlements on the route. In considering impacts; the focus in perhaps skewed to individual businesses and sites; rather than recognising the socio-economic role of the settlements and their centres. The centres have a retail and cultural role as the focus of their respective communities as well as

accommodating community/employment facilities. The impact of reduced access and/or delayed journeys on these centres during construction works is an important consideration.

9.10.25. The ES Study Area of order limits plus 500 metres is limiting in considering wider impacts. Cressing Temple Barns are an important tourist attraction accessed from the south via A12/Witham. Braxted Park (via Rivenhall End) and Tiptree including its jam factory (via Kelvedon) are also key destinations in the locality.

9.10.26. The ES correctly identifies significant employment sites on the edges of Chelmsford and Witham (between Chelmsford and the A12 and between Witham and the A12). It references the Chelmsford Garden Community, but does not appear to account for the entirety of its planned housing and employment space in considering cumulative impact.

9.10.27. Impacts of bridge closures at Hatfield Peverel appear to have been given careful consideration in terms of mitigation by way of phased closure.

9.10.28. The cumulative impact of significant construction/infrastructure projects in the County requires consideration. This includes 12 NSIPs (including major highways works at the M25/A12 junction), four new Garden Communities and two Freeports in Essex. Consideration should include the timing/phasing of the projects and inter-project impacts – including the transportation of construction materials and availability of labour. This should be considered as part of the 'future baseline' scenario.

9.10.29. The new Junction 25 should be future proofed to ensure it enables future improvement of the A120.

9.10.30. The ES notes that the scheme is committed to advertising job opportunities to local residents and to set targets to commit to apprenticeship and work placements in addition to working with local schools (ES paras 13.18.32 and 13.18.33). The ES refers to an Employment and Skills Plan/Strategy and the need to monitor employment and skills at paragraph 13.19. 1 and 13.19.2. However, although application material touches on the potential for local employment and apprenticeships, there is currently no reference to an employment and skills plan.

9.10.31. An Employment and Skills Plan should be prepared prior to the commencement of construction. This should set out measures that the applicant will implement in order to advertise and promote employment opportunities associated with the proposed development locally. Further the applicant should also make a skills and education financial contribution to assist and encourage local people to access apprenticeships and training. This is justified in the Essex Developers' Guide to Planning Contributions document and should be secured by way of a DCO requirement. It should help maximise positive gains for the local economy, including upskilling the construction workforce, including within

education settings to support emerging modern green methods of construction, jobs and skills retention within Essex. The council has produced a 'Skills and Employment Principles for Major Project and Developments' document, which outlines the council's expectations of what a Local Employment and Skills Plan should cover – this is included in the Appendix 3

Opportunities/Legacy

9.10.32. The following should be secured as part of the proposals or as requirements of the Consent Order:

- To ensure that the project incorporates in its design and construction 'future proof' measures to reflect emerging technologies in road transport such as the full provision of electric car charging, hydrogen refuelling, driverless car systems/auto pilots etc.
- Work with local further education providers to invest in and support the development of training programmes in green and modern methods of construction and roadworks.
- Delivering a new construction and roadworks skills training facility within the county to support construction, roadworks for both Highways England and other major projects across the county.
- Sponsor or invest in a training facility for heavy vehicle operation relating to construction and roadworks, to increase skills across the county which will be required to meet the demands of this project and of the major projects planned across Essex.
- Contractual targets to create local jobs. Apprenticeship target shaped to reflect local economic strategy. A financial contribution to enable local authorities to target those furthest from employment.

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10. Next steps

10.1.1. As set out within this report ECC has significant interests in this NSIP. While the council supports the principle of the scheme, we strongly believe that there is a justifiable and proven need for material changes to be made to some aspects of the scheme. We hope that the issues this report has identified and the changes we believe are required will be duly investigated through the examination.

10.1.2. A commitment is needed from NH that these changes will be made now, as opposed to some unspecified time in the future, and in most cases we believe these changes should be secured through the DCO. Should NH opt not to make these changes, we would respectfully ask the Examining Authority to take a considered view and make a recommendation on them in the report which will follow the examination.

10.1.3. The council will continue to work proactively with NH to maximise the benefits of the scheme, and looks forward to continuing to play a full and active part in the examination.

Essex County Council

This information is issued by:
Essex County Council

Contact us:
Mark Woodger
[redacted]@essex.gov.uk
Principal Planning Officer
Sustainable Growth

Essex County Council
County Hall, Chelmsford
Essex, CM1 1QH

[redacted]

The information contained in this document can be translated, and/or made available in alternative formats, on request.

Essex County Council

Appendix 1 – Letter from Essex County Council to National Highways dated 7 February 2023

Essex County Council

Philip Davie
Project Director, A12 Widening Project
National Highways
Woodlands
Manton Lane
Bedford
MK41 7LW

Essex County Council
County Hall
Market Road
Chelmsford
Essex
CM1 1QH

Sent by email

Date: 7th February 2023

A12 CHELMSFORD TO A120 WIDENING SCHEME – FURTHER UPDATE ON ESSEX COUNTY COUNCIL'S POSITION ON THE PROJECT

Dear Phil,

Thank you for your letter dated 1st December 2022 which responded to the letter I sent on 31st October 2022 setting out Essex County Council's position on the A12 widening project. As discussed I thought it would be helpful to respond in writing. In some cases we would like to request further information and/or clarification and these requests are detailed below.

Junction 19

We note your position on the study of future changes that may be required to Junction 19 to accommodate expected future growth in the vicinity of this junction, namely that this be discussed with the National Highways (NH) Spatial Planning team. While we believe there is good reason for your team to be involved in this work, we have contacted the Spatial Planning team as you suggested and hope we can make some progress on this issue.

Boreham and the B1137, including Junctions 20a and 20b

Your letter helpfully summarises ECC's position on the proposed speed limit changes on the B1137, which is essentially that the nature of the road (being long and straight, with few frontages on the stretch between Boreham and Hatfield Peverel) is such that we believe there may be issues with drivers not complying with the lower speed limits. You also provided forecast traffic flows in the weekday peak hours and note that forecast traffic is well within the capacity of the road.

We do not disagree that, based on the forecasts, traffic will be well within the link capacity of the road. The increase in traffic in the morning peak will however be material and perceptible. I would add that my understanding is that the modelling

assumes, in simple terms, that traffic will observe the speed limits; if a significant proportion of traffic does not, it follows that the journey times will be quicker and traffic flows will be higher than those forecast.

You note that 'Boreham has an existing speed limit of 40mph, which is considered high for a large village with many journeys on foot alongside and crossing the road over such a long section of Main Road'. We concur that a 40mph though a village the size of Boreham is high, and hasten to add we have looked at various times in the past at reducing the speed limit to 30mph but have concluded that compliance would be an issue. Your letter refers to average speed data which has informed your position that no engineering measures are required to support a reduction in the speed limit; we have not seen this data and to enable us to consider this and inform our representations to the examination I would be grateful if you could send this before 13th February if at all possible.

Notwithstanding that we will consider our position once we have reviewed the aforementioned data, our position and that which we intend to make at the examination remains that a package of measures including an average speed camera system is required to discourage strategic traffic from routeing through Boreham to access Junction 19. This view is shared by Boreham Parish Council, Boreham Conservation Society, Chelmsford City Council, the County Council member for this division (Cllr John Spence CBE) and Kemi Badenoch MP. We have identified a range of measures that we think could be suitable and should be explored further, and these are set out in the attached report.

With regards to the stretch of the B1137 between Boreham and Hatfield Peverel, you note that measured speeds over this section show average speeds below the posted speed limit but acknowledge that detail of the existing speed profile in this section is limited. Again, we would appreciate if you could share the average speed data that has informed your position. We note your point about changes to the vehicle fleet having a positive impact on road safety, and while we certainly hope this will be the case this is not in National Highways' control, and it could take many years before this makes a material impact.

Given the above, we would very much welcome further discussion on this matter with your team and would be happy to meet as you suggested.

Junction 21

We note your position on ECC and NH undertaking a joint study to identify a preferred route for a Maldon Link Road, and while we are disappointed this is the case we appreciate your sharing of the CAD models for the options that have been considered and the SATURN results. I don't think the SATURN results have yet been uploaded to the shared Teams site and would be grateful if you could arrange for this to be undertaken as soon as possible. We would also like to take you up on your offer of a meeting to go through this information.

Since the letter you have helpfully confirmed at our SOCG meeting on 18th November 2022 that as well as amending the design you will accede to our request to pave the widened embankments as part of the new Junction 21 to help facilitate the future

delivery of a Maldon Link Road as a separate, subsequent project. We welcome this change and will raise this at examination so that we can ensure it is delivered through the DCO. We suggest a drawing is produced showing the new design including the paved embankments and that this drawing is referenced within the DCO as the basis for the final design, but we welcome your thoughts on this.

De-trunking

As you know NH's current proposals on de-trunking are not acceptable to ECC. While we are pleased that you have confirmed NH is committed to reaching a suitable solution to de-trunking, progress on this has been slow and we remain of the view that significant changes to NH's current proposals are needed. That said, it was helpful to hear in greater detail NH's current thinking on de-trunking at the meeting we had on 16th January (rearranged from the 16th December as originally planned) and the suggestion that NH acknowledge that handing the de-trunked sections of the A12 to ECC in their current form is not acceptable and that the majority of the de-trunked stretches will be rebuilt or as a minimum subject to significant works before handover.

One point that NH have made several times is that reaching a suitable solution on de-trunking will be a long process, and we appreciate that these stretches will remain trunked for several years. ECC see this as a core part of the widening scheme, and in our view it is essential that agreement is reached prior to the end of examination and secured via the DCO or a suitable alternative legally-binding mechanism.

At the date of writing we have still not received an asset inventory for the de-trunked sections, as we have been requesting since at least March 2022, nor in fact any substantive information on asset condition or planned forward maintenance. While I understand that this information takes time to compile, as indeed it will take us some time to review, not having this information makes it difficult for us to take a fully informed view of the assets that ECC will inherit as part of the scheme and may mean we will not have time to fully discuss the representations we may make to the examination on this with you in advance.

As you know ECC has for several months been giving consideration to what we believe is a better alternative to the current proposals for de-trunking, and we shared with you an overview of this work at our meeting on 16th January. We are grateful for the attention you gave this, and I attach a copy of the slides we shared at the meeting. A technical report, which details the work undertaken, will follow in the near future. We would welcome your comments on the report and a further discussion on how we can best progress this.

Junction 24

In my letter of 31st October I set out our three main concerns about the proposals for Junction 24 in their current form; namely the design of the new Inworth Road roundabout, the need for measures to ensure the B1023 is able to safely accommodate the expected increase and traffic and measures required to reduce the potential for rat-running on local roads.

On the first point, we are grateful for the drawing you have provided us showing the geometry of the proposed roundabout as we requested. This is being reviewed currently and we will revert with any comments.

On the second point, with specific regard to the widening of pinch points, we accept that the modelling indicates an overall reduction in peak hour traffic using Hinds Bridge in 2026 and note that for these reasons the A12 project team does not believe that any interventions are required in connection with this bridge. We nonetheless remain of the view that this structure should be widened so that it can accommodate two large vehicles passing in opposite directions because the 2042 traffic data indicates that there will be a 2% increase in AM and 9% increase in PM peak traffic at this location.

As the busier peak hours are the times when incidents are most likely to occur, the increase in peak hour flows, in combination with the expected profile of traffic (including HGVs), means that delays associated with the constraints of the current structure are likely to increase and we believe this would potentially have a significant impact upon journey times and traffic routing. I note also your reasoning for only widening the section of the B1023 through Inworth village, but would say in response that increasing traffic on the B1023 increases the potential for delay and road traffic collisions at other pinch points on this route which are outside of the village.

On the third point, as you know this issue is a significant concern for the local communities impacted. You note that we have been doing some work on “subtle” interventions, which ECC believe could help to reduce the likelihood of rat-running, ensure the B1023 is better able to accommodate increased traffic and mitigate the impacts of the junction on local communities. Attached is a report which sets out the measures we think could be suitable and should be examined further, and we welcome further discussion on this.

Walking, cycling and horse-riding

Whilst we acknowledge that the A12 scheme includes a significant amount of new WCH infrastructure, we are still concerned that accordance with the DfT’s national guidance on cycle design (LTN 1/20) has not been demonstrated at numerous key locations along the length of the scheme; in particular at junctions and proposed pedestrian and cyclist crossing structures. As yet we have not received the additional traffic modelling requested in our updated version of the WCH matrix, or indeed a response to the many design related issues raised within the matrix.

With regard to the specific issue of turning radii on the approaches to WCH bridges, LTN1/20 makes is clear that the core design principle of directness should be aimed for when designing overbridges, in order to allow cyclists to maintain momentum. ECC maintains that:

- zig-zag ramps are inherently indirect and should only be used when other alternatives have been shown to be inappropriate.
- A 4m actual vehicle turning radius is the minimum that NH should be providing on the approaches to cycling overbridges, in order to enable cyclists to maintain momentum.

- 5m minimum external radii should only be considered appropriate where a very low flow of cyclists is likely. On key routes, where higher cycling flows are anticipated, the aim should be to provide something similar to the Belfast example provided in LTN1/20, with the design only diluted from this if absolutely necessary.

Although we are grateful for the ongoing Technical Working Group discussions, ECC has no guarantee that the WCH proposals shown in the DCO plans will be amended to better accord with LTN1/20 and this, therefore, remains a significant concern that we will duly raise at the examination.

Monitoring and mitigation

In response to our request to monitor the operational impacts of the scheme at certain locations, you advised that NH undertakes post-opening project evaluations for road schemes and helpfully provided an example for the A556 Knutsford to Bowdon improvement scheme. We understand that post-opening evaluations are undertaken, as I indicated in my last letter, but what we are asking for here is something more targeted, to address specific concerns about impacts at key locations, together with a commitment to address any adverse impacts revealed by the monitoring. The post-opening evaluations completed by NH do not provide any such commitment.

At the current point in time we are awaiting a response to various queries we have raised regarding the traffic modelling that has been completed to inform the scheme's environmental and transport assessments. It is important that we get this information as soon as possible so that both we and the Examining Authority can be satisfied that the models are sufficiently accurate, and the environmental assessments are, therefore, robust. We are concerned that the model may be underrepresenting existing congestion at some locations, amongst other issues, and this could be skewing the forecasts. If this is the case, the actual impacts of the scheme on the performance of some parts of the local network may be larger than expected and this adds weight to our request for the actual impacts to be monitored and the data made available to ECC and other parties.

We note also that a number of stakeholders have raised concerns that forecast traffic flows on some local roads have changed in some cases significantly between the statutory consultation (June 2021), the 2021 supplementary consultation (November 2021) and the DCO application (August 2022), with little explanation provided for the changes. While we understand and accept that the flows have changed as the traffic model has been updated and refined, some stakeholders understandably have concerns about the considerable reductions in traffic flows and by extension the accuracy of the forecasts. Agreeing to a monitoring programme may help to reassure some stakeholders on this point.

We believe the monitoring programme should include the monitoring of traffic and air quality, for a minimum of one year pre-opening and three years post-opening, at the following locations:

Location	Suggested nature of monitoring
B1137 Main Road, Boreham	Traffic monitoring (all modes)
The Street / Maldon Road (Duke of Wellington) junction, Hatfield Peverel	Traffic monitoring (all modes) and air quality (NO^2) monitoring
Little Braxted Road, Little Braxted	Traffic monitoring (vehicles)
Braxted Road / Braxted Park Road	Traffic monitoring (vehicles)
B1023 Inworth Road, Inworth	Traffic monitoring (vehicles)
Kelvedon Road, Messing	Traffic monitoring (vehicles)
B1023 Church Road, Tiptree	Traffic monitoring (vehicles)

We would be happy to set out in more detail our thinking on the monitoring programme, including specific monitoring locations, type of monitoring equipment, the means of making data available and an indication of costs. We would also welcome further discussion on this and the approach for dealing with any unforeseen adverse impacts that the monitoring may reveal.

Construction impacts

Minimising the construction impacts of the scheme particularly on the local road network remains an important issue for ECC, not least in the context of significant concern locally about the considerable impacts the current works between Junctions 25 and 26 are having, and we likewise look forward to ongoing engagement on this. We have reviewed the proposed traffic management forums set out in Table 3.1 of the Outline Construction Traffic Management Plan and would like to discuss in more detail the purpose of these forums, their terms of reference and when they will be set up to satisfy ourselves that they will be effective.

Other points

We note that you said in our SOCG meeting on 16th January that you are working on responses to the list of modelling queries we sent in September, and we require sight of these responses as soon as possible.

Concluding remarks

Thank you for taking the time to consider these comments and the requests included herein. We look forward to continued discussion as we focus our attention on finalising the first draft of the Statement of Common Ground and Local Impact Report.

Yours sincerely,

Billy Parr
Head of Network Development, Essex County Council

Essex County Council

Appendix 2 – Essex County Council's A12 De-trunking Meeting slides 16 January 2023

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

A12 Detrunking

ECC Proposed Amendments to A12 DCO Scheme

16 January 2023

RINGWAY JACOBS
integrated expertise

Essex County Council

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

ECC position on National Highway's current proposals

Future traffic flows do not warrant dual carriageways – significant over-provision (peak period V/Cs of between 0.13 and 0.22)

High probability of vehicles exceeding the speed limit

Arrangement represents a significant ongoing maintenance burden for ECC

Not consistent with ECC's place making agenda

Missed opportunity to improve facilities for active users and to increase green infrastructure in support of the Government and ECC's ambitions for net zero, biodiversity and flood control

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

Improvement Opportunities
Southern section:
Witham to Rivenhall End

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

Improvement Opportunities – Southern Section

- Removal of traffic provides an opportunity to establish a more pleasant space
- New area linking the northern and southern sides of the road with an opportunity to improve community cohesion
- Fully compliant cycle provision in line with the DfT's latest guidance (LTN1/20)
- New green infrastructure
- 3.4km* commuter/leisure/fitness route (between Witham and Kelvedon) – approx. 10 minutes by bike or 40 minutes walking

* Of which 1.25km is the detrunked section of the A12

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Essex Highways

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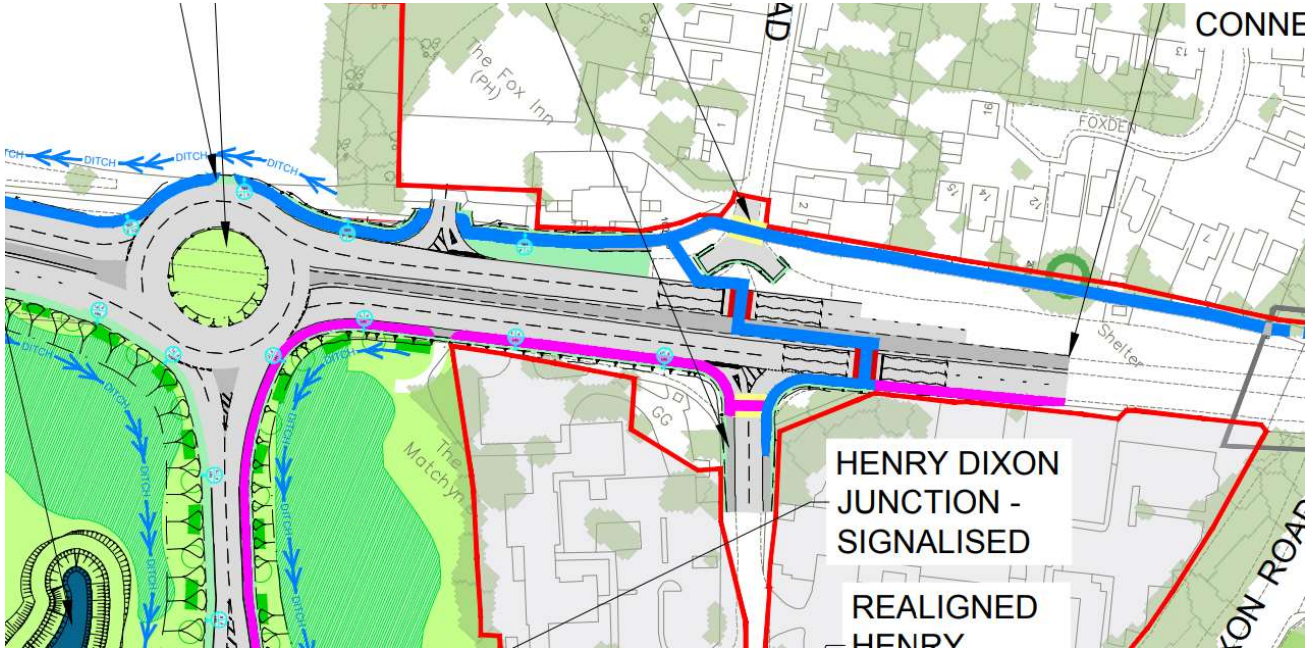
Significant area that can be enhanced

- NH proposals are to retain expanse of tarmac
- Opportunity to instead provide local amenity and community space
- Up to 30 meters of width available to develop with a single retained carriageway arrangement
- Opportunity to provide high quality connections onto onward facilities



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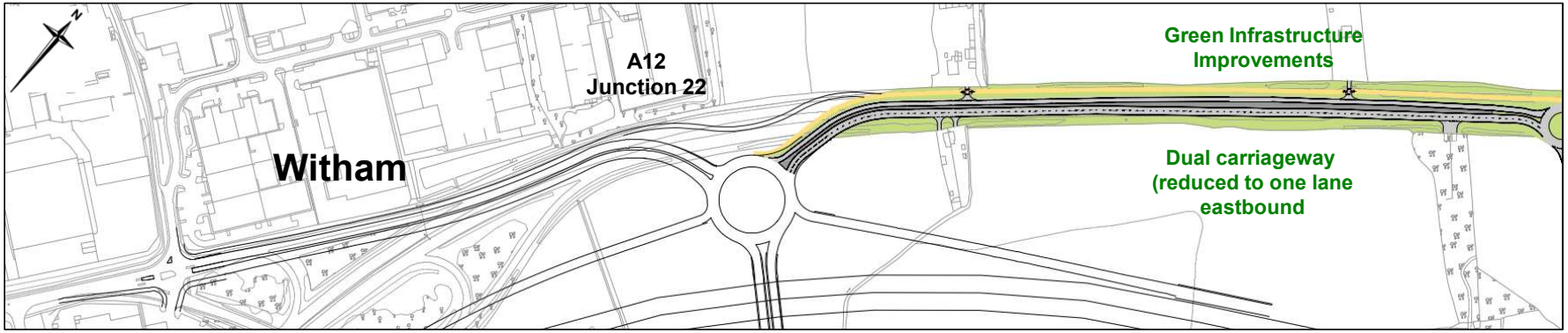
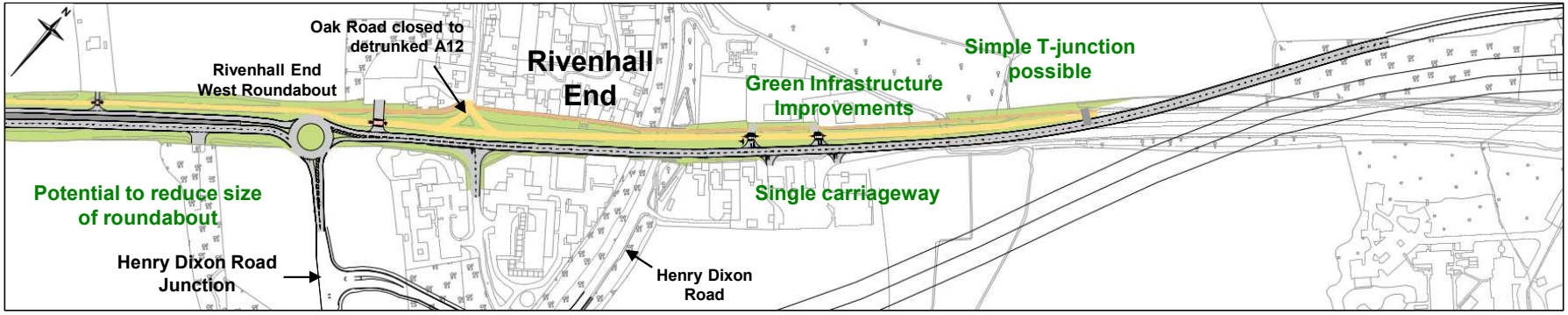
Essex Highways

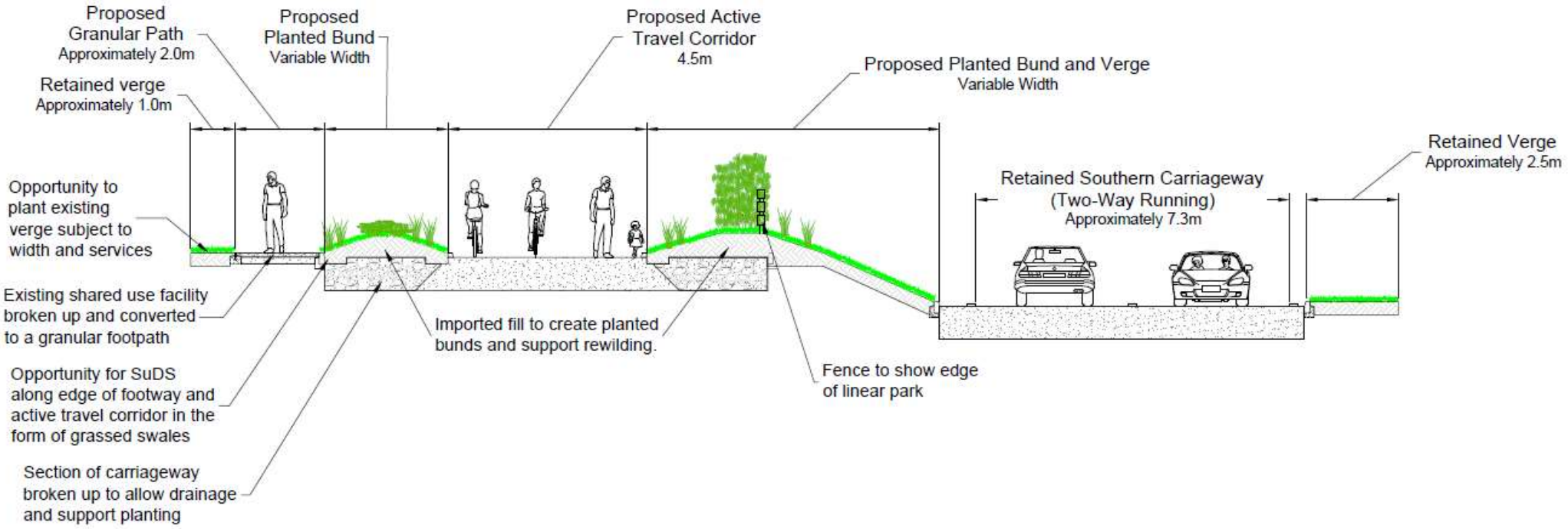
Potential for Improvements to National Highways DCO Scheme – Southern Section:

Witham to Kelvedon



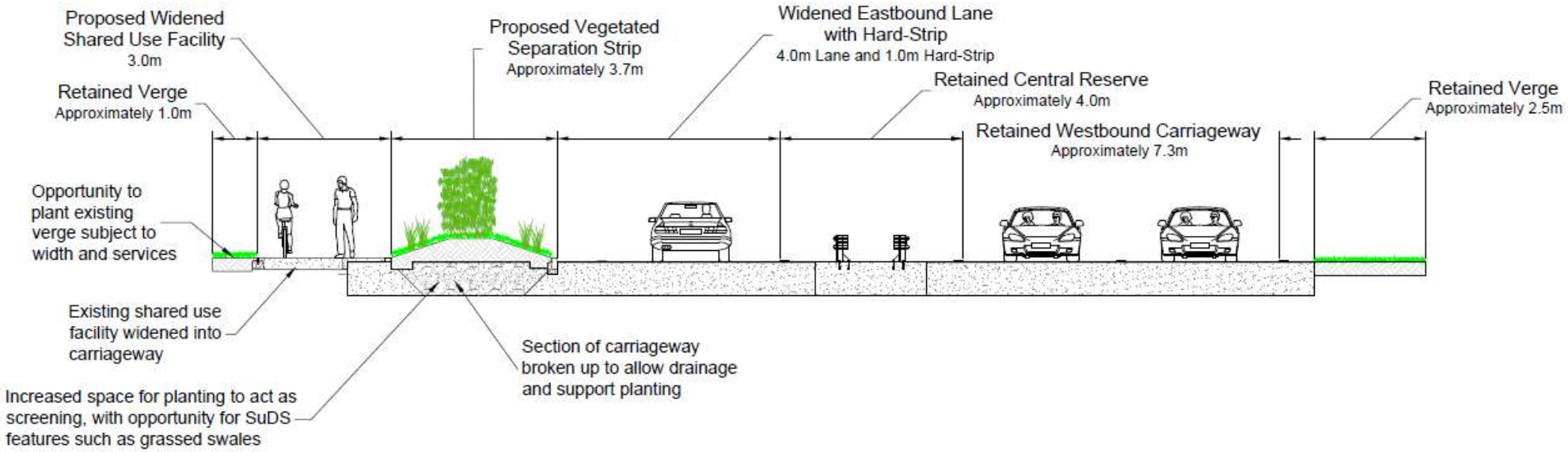


Rivenhall End: Illustrative Cross Section



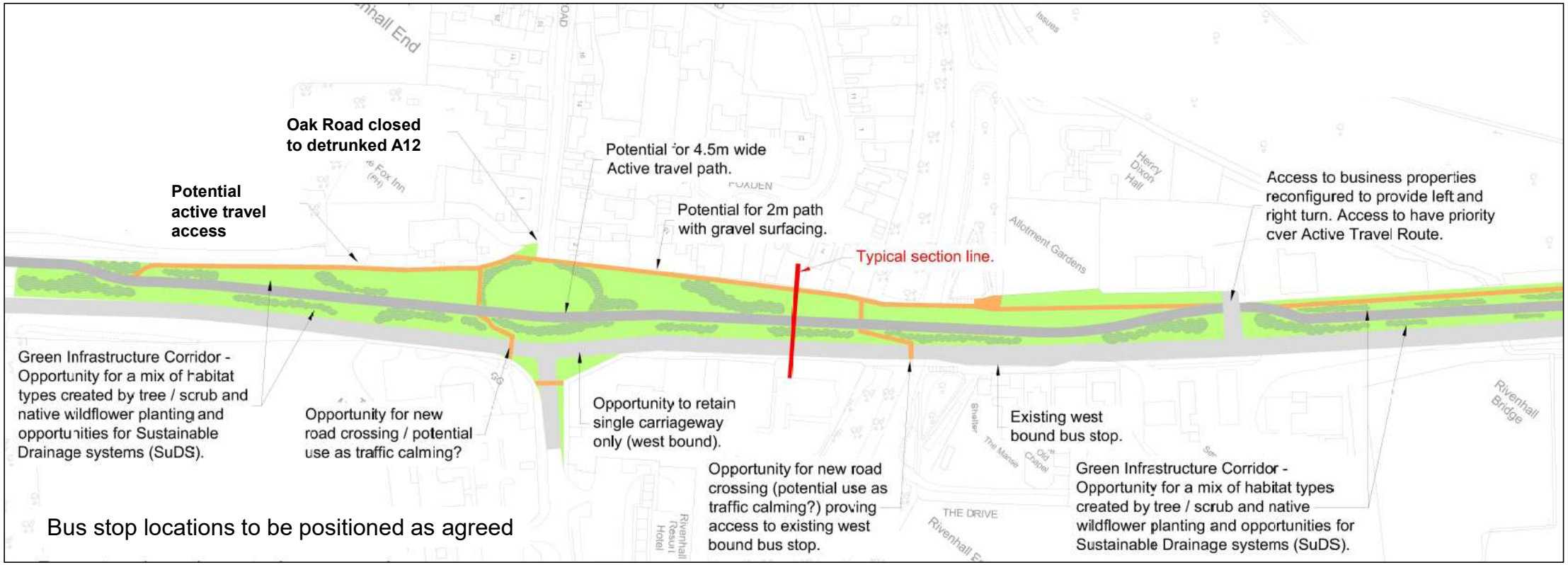
Wide Active Travel Corridor

Witham to Rivenhall End - Illustrative Cross Section



- Two lanes retained in **westbound** direction, as traffic flows are predicted to queue on approach to Junction 22 roundabout in the future.
- Only one lane needed in **eastbound** direction, as the introduction of the Rivenhall End West Roundabout would lead to very little queuing

Rivenhall End: Potential Landscaping Ideas for Active Travel Corridor



Illustrative Concept

Rivenhall End: Potential Further Concept as Community Park

Illustrative Concept

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

Improvement Opportunities
Northern section:
Feering to Marks Tey

Essex Highways

SAFER GREENER HEALTHIER
Transforming travel in Essex

Improvement Opportunities – Northern Section

- 4.25km commuter/leisure/fitness route between Feering and Marks Tey - approx. 10-15 minutes by bike or 1 hour walking
- Significantly increased green infrastructure
- Appropriately sized junctions (with inherent cost savings)
- New equestrian facility
- Improved cycle provision in line with the Department for Transport's latest guidance (LTN1/20)

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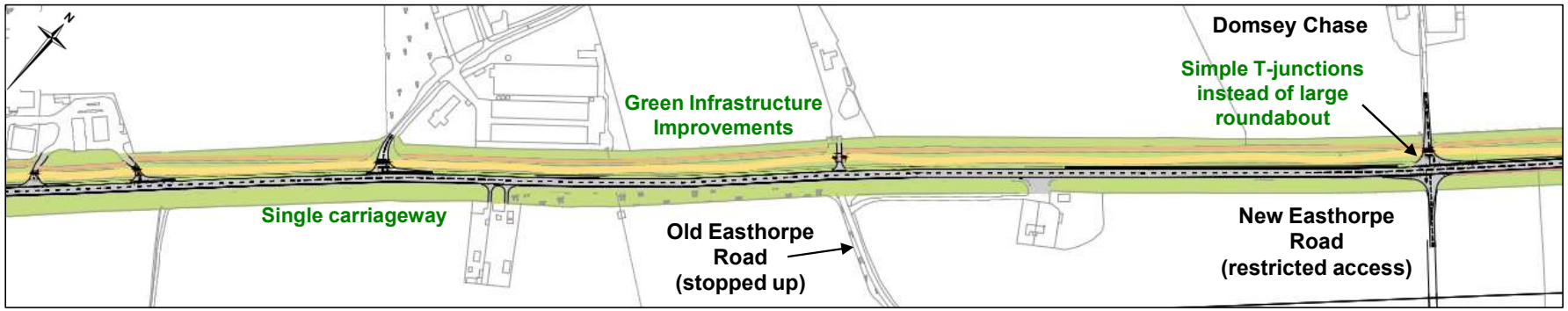
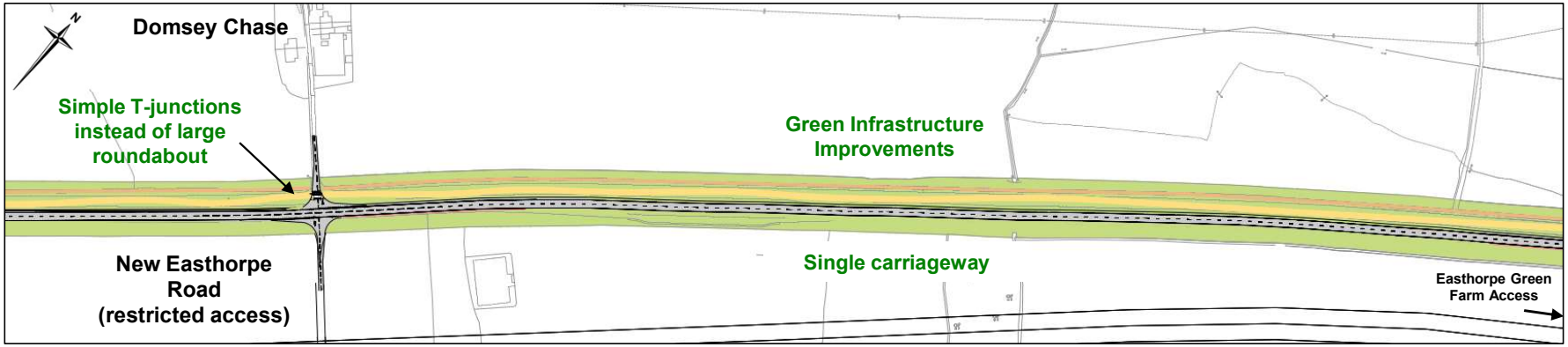
Essex Highways

Potential for Improvements to National Highways DCO Scheme – Northern Section:

New Lane to Easthorpe Green Farm Access

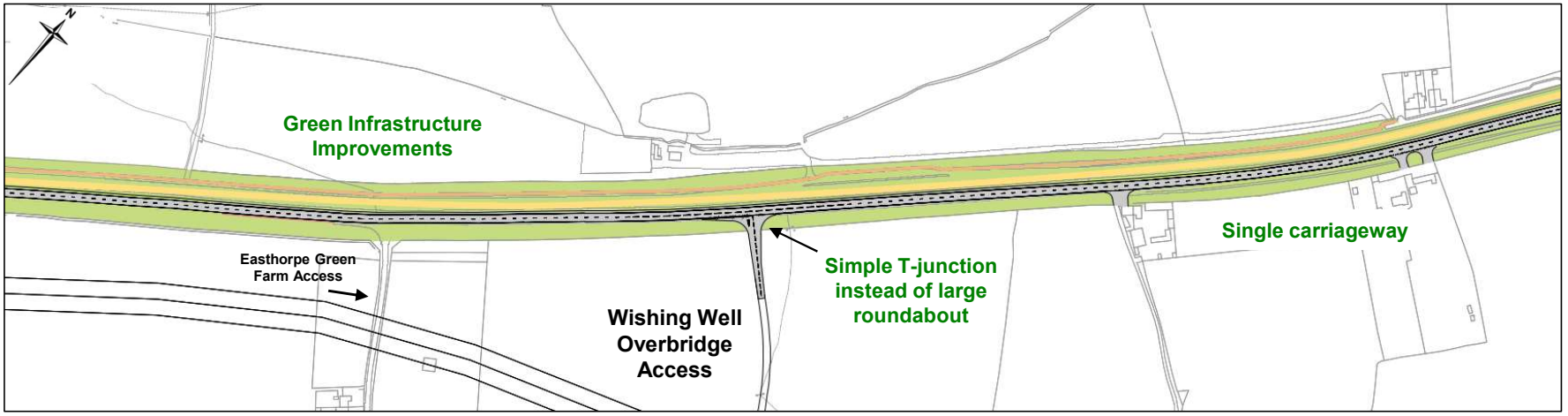


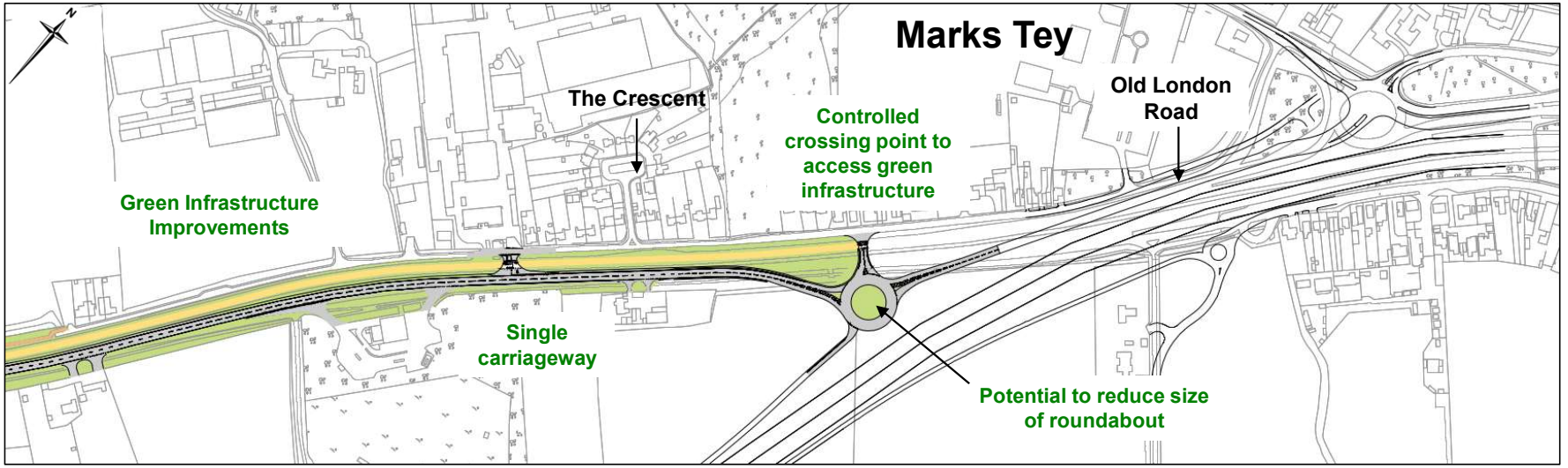


Essex Highways

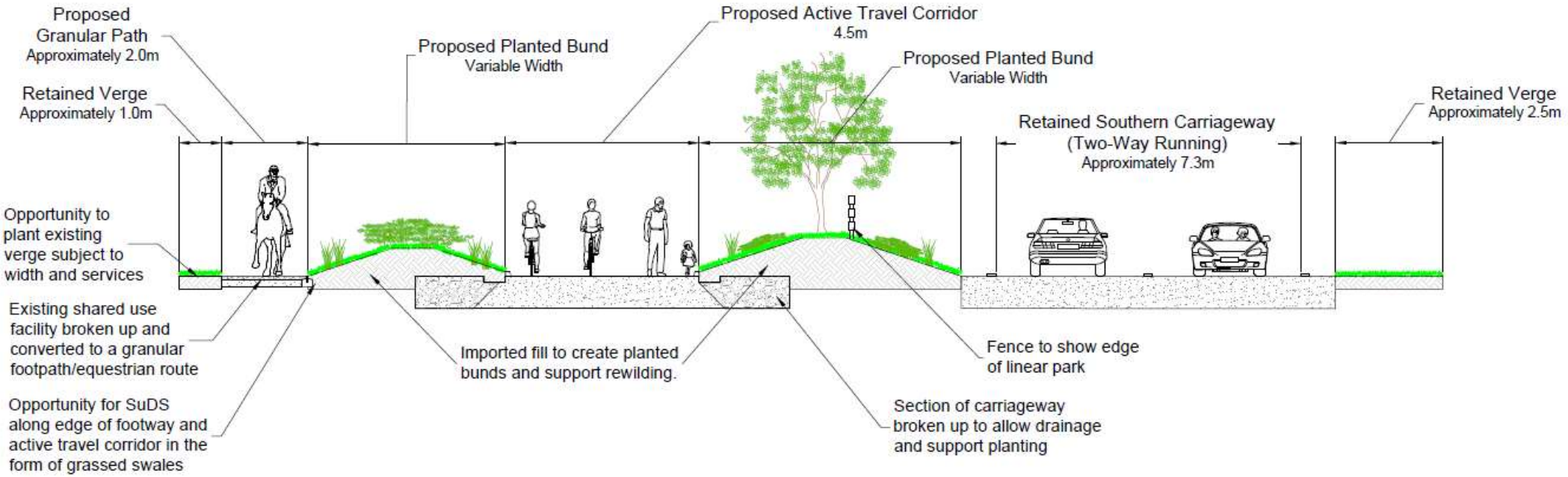
Potential for Improvements to National Highways DCO Scheme – Northern Section:

Easthorpe Green Farm Access to Marks Tey





Feering to Marks Tey: Illustrative Cross Sections



Preferred Option: Wide Active Travel Corridor

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Green Infrastructure Opportunities:

- Proposed Green Infrastructure landscaping for the northern section covers an area c.50,000m^2
- Typical landscape types could include:
  - mown grass;
  - wildflower grass;
  - native shrubs;
  - native woodland;
  - individual specimen trees;
  - along with opportunities for Sustainable Urban Drainage (SuDS)
- This could potentially offer a large Biodiversity Net Gain (BNG)

Essex Highways

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Transforming travel in Essex

- The landscaping strategy could predominantly focus on developing native habitat types with minimal long term maintenance requirements
- Specific growing conditions (soil types, depths etc) could be created for individual planting types such as shallow, low fertility soils for native wildflower grass areas

Examples of a mix of habitats on highways regreening schemes:

- Retained verge trees;
- Mown grass verges;
- Wildflower;
- Shrub and woodland planting.

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Other Benefits of Improvements:

- Benefits to local accesses by enabling right-in/out, simplifying vehicle journeys within the area.
- Provide physical and visual buffer between retained carriageway and active travel corridor.
- Maintenance could be kept low, using low fertile soils and native wildflower seeding.
- Green Infrastructure areas could offset impacts of other schemes which is being explored with the Country Parks Management team
- In line with ECC's Safer, Greener, Healthier principles

RINGWAY JACOBS
integrated expertise

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Questions & Discussion

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Any Other Business

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Appendix 3 – Essex County Council Skills and Employment Principles for Major Projects and Developments

ECC Skills and Employment Principles for Major Projects and Developments

Skills Strategy and Growth Team

Introduction

ECC would like to see the county's major projects and developments make a significant contribution to support our Essex skills and employment landscape. This document is a summary of our vision and ambition.

The Skills and Employability Team aims to develop a strong and flexible skills system that addresses issues related to low productivity, business development and economic inclusion and we encourage early engagement from the Major Project sponsor or developer to outline how they intend to align their work to support our priorities. Our priorities are identified in our Essex Skills Plan, our Sector Development Strategy, as well as in Everyone's Essex, our strategy for Levelling Up the County.

Scale of economic opportunity

National Strategic Infrastructure Projects and other large-scale developments have the potential to generate lasting regional economic growth and prosperity. Our focus is to drive strong strategic leadership and partnerships which promote the development of a highly-skilled local workforce and sustainable employment. A responsive and flexible local skills system will help mitigate dependencies on single large local employers which can, potentially, drive out other opportunities or make communities vulnerable to economic shocks.

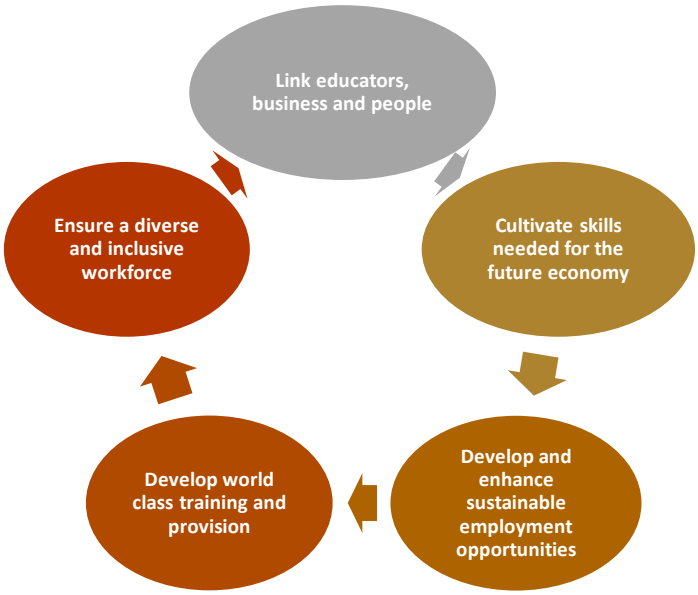
Economic clustering and skills

Our strategic aim is to ensure that major projects work to bring about skills clusters that support the matching of workers to in-demand career opportunities, and companies to communities where the skills they need exist or are being trained for.

We therefore expect major projects to:

- cultivate and foster partnerships to develop a flexible and responsive skills system that aids regional and sub-regional business development, and which develops industry clusters and skills engines.
- develop highly-skilled sub-regional talent eco-systems with transferable skills and competence, responsive to current and future jobs which:
    - builds capacity and conditions to enable shared prosperity
    - enables innovation, knowledge-driven and digital skills that increase productivity, and thereby aiding wealth, output and opportunity
- mitigate adverse employment effects that may arise from a large-scale influx of non-home-based workers which evidence suggests increases salaries and job competition, thereby leading to higher churn and displacement effects. This crowding out effect raises the cost for all local people, including those not directly employed by the large employers, by increasing demand for property and local services.
- create the conditions for effective skills devolution by developing and taking forward an integrated whole-system approach to employability and skills.

Skills and Employment principles for major projects



To meet our principles, the sponsor / developer will be expected to:

1. **Link educators, business and people** to develop a shared understanding of skills and drive local prosperity
   Working in partnership with ECC, SELEP, SEB, employer/business reps and training providers:
   - Drive strong leadership to enable local anchor institutions/strategic infrastructure projects to invest in and deliver local outreach and engagement to support sub-regional, latent talent pools; enabling future employment and agglomeration spin-out
   - Ensure local educational provision aligns with sub-regional employment needs
   - Develop and take forward integrated approaches to employability and skills with other agencies.
   - Foster educational partnerships to upskill and train highly-skilled workers

2. **Cultivate skills needed for the future economy supporting productivity, future prosperity and the fourth industrial revolution**
   Working in partnership with ECC, SELEP, SEB, JCP, training providers and others:
   - Invest in lifelong learning, to adapt to changing employment landscapes
   - Develop and unlock skills needed for future jobs
   - Prioritise knowledge-driven skillsets and higher-level jobs

3. **Develop and enhance sustainable high-value employment opportunities**
   Working in partnership with ECC, SELEP, SEB, JCP, training providers and others:
   - Support access to a highly skilled pool of local labour
   - Drive knowledge economy jobs

- Increase the percentage of residents with skills at Level 3 and above
- Further utilise the apprenticeship levy and opportunities for skills devolution to support industry and develop highly-skilled sub-regional talent eco-systems
- Maximise local labour opportunities from regional developments, with career sustainability and lifelong learning at its foundation

4. **Develop world class training and provision**

   Working in partnership with ECC, SELEP, district(s) and training providers:
   - Invest in and support the local educational landscape
   - Develop a culture of education and industry knowledge share and pool of associate lecturers, teachers\tutors and assessors
   - Invest in new models of skills facilities and equipment which are aligned to employer skills need to support 'skills for the future' and a knowledge-based economy
   - Invest in and develop new vocational pathways such as apprenticeships, T-Levels and new models of Work Based Learning

5. **Ensure a diverse and inclusive workforce**

   Working in partnership with ECC, SELEP, SEB, district(s) and training providers:
   - Offer targeted opportunities for the hard to reach and those furthest away from the job market to access sustainable employment
   - Address workforce gender imbalances and promote a culture of fairness, inclusion and respect for all, through vigorous outreach, local engagement and pro-active measures to break down negative perceptions
   - Create localised initiatives addressing the skills needs of specific subregions of Essex, such as addressing: in work poverty, low skills levels, long term unemployment or high levels of individuals Not in Education, Employment or Training (NEET)
   - Invest in and work with specific cohorts of residents that are furthest away from the jobs market to promote employability and skills development

HoT for Skills and Employment Plans

We encourage and expect all projects and developments to use a Skills and Employment Plan to set out their strategy for supporting and delivering any S106 and non-S106 skills and employment obligations. We encourage developers to use best practice guidance and templates provided by CITB which, as a minimum refer to commitments, clear plans and targets as below:

1. Working within the existing skills and employment partnership(s) as advised by ECC and maximising the number of local skills and job opportunities on offer
2. Recruiting through Jobcentre Plus and other local employment vehicles
3. Advertising jobs via the Essex Opportunities portal or any other portal as advised by ECC
4. Setting targets and monitoring systems for-
    a. New jobs created
    b. Work trials and interview guarantees
    c. Pre-employment training
    d. Apprenticeships and traineeships
    e. Vocational training (NVQ)
    f. Work experience (14-16 years, 16-19 years and 19+ years) and engagement with T Levels
    g. School, college and university site visits and career events
    h. Construction Skills Certification Scheme (CSCS) cards
    i. Supervisor training
    j. Leadership and management training
    k. Support with transport, childcare and work equipment
    l. In-house training schemes