Essex County Council

Lower Thames Crossing

Local Impact Report

CONTENTS

1. BACKGROUND

The Lower Thames Crossing (LTC) scheme as proposed represents a huge step change for how vehicles can cross the Thames, giving an alternative to the current Dartford Crossing and providing a direct link between Junction 29 on the M25 and the M2 in Kent with two lanes being proposed southbound and three northbound. The connection will be made by tunnel under the river close to the village on East Tilbury in Thurrock, a Unitary Council.

Some of the route will be formed in Essex where the M25 intersects with the A127 at Junction 29, and the impacts this proposal will have on the free flow of vehicles and trade across the River is hugely significant and considered, for the most part, to be beneficial, and is supported in principle by Essex County Council (ECC).

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

Since the DCO scheme was first put forward for the Lower Thames Crossing (LTC) NSIP 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.

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 within our administrative boundary.

In our role as local Highway Authority, ECC 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 streetlights. We recognise the vital role that the highways network plays in the lives of the residents, as well as the travelling public, local business and the movement of goods, services and product within Essex and the wider region. 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.

ECC recognises the benefits of the LTC 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 network, including the current Dartford Crossing.

The council supports the principle of the scheme as is proposed by LTC, and has said so many times in engagement, and is keen to see it delivered to ensure that the expected benefits can be realised. However, such a development should not come forward at unacceptable environmental cost.

The as proposed development would alleviate the long-standing transport problems at the Dartford Crossing, which constrain the economy, the free flow of people, goods and services through Essex.

Current levels of traffic demand for crossing the River Thames east of London outstrips the available supply, with growth and development in the connected communities exasperating the situation and making it progressively worse over time. Due to the age of the existing crossing, and despite incremental improvements have been made to maximise the capacity of the available road, there are little practical options to what can now be delivered in this location to make the Dartford Crossing more efficient. Despite these challenges, road users have little choice but to continue to use the Dartford Crossing because of the lack of alternative routes. LTC, if consented, would provide a practical

alternative for people and goods to crossing the Thames in this location east of London and overcome current high levels of congestion at peak times which affects the M25 and linked highways network on both sides of the Thames.

Reduced congestion and delays and improved journey time reliability and cross river connectivity would aid the growth potential for the local economies on both sides of the River Thames, including those in Essex, by helping to form a single market with enhanced labour market, competition and efficiencies to drive up productivity. The benefits would extend across the London region by creating a greater synergy and across the country where the economy relies on road connectivity for international trade via the ports.

The council does consider, however, that although the development should come forward at pace, its impact should not be such that detrimental impacts could result in significant adverse impact on the highway network, nor on the amenity of residents, the environment, business premises and growth in Greater Essex and the wider region.

Whilst many of the issues as they relate to Essex have been discussed with NH and allowed ECC to agree what is a full and comprehensive Statement of Common Ground (SoCG) it is considered 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).

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, to safeguarding land which is allocated for employment growth, and to provide a full and co-ordinated non-motorised user (NMU) network.

More generally, the council's approach to this and other NSIPs is guided by our NSIP Policy which was approved in December 2022 and is available here[1]. 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 with a lasting legacy provided by NSIP proposals. This includes securing appropriate mitigation where required and impact monitoring.

Scope and Structure of this Local Impact Report

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'.

This LIR relates to the impacts of the proposed development as it affects the administrative area of ECC only. Separate LIRs are expected from the host district authorities along the LTC route.

The LIR covers topics where ECC has a statutory function or holds particular expertise as the Highways Authority, Minerals and Waste Planning Authority, the Lead Local Flood Authority (LLFA), Socio Economics, with Health and Wellbeing coming from the statutory providers. ECC will also be highlighting impacts on a scheme wide basis on a number of topics (archaeology, heritage, ecology etc).

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

The LIR has sought not to duplicate material covered in the Statement of Common Ground SoCG, itself a document which is still under positive and constructive discussion with the applicants however this LIR will align and complement the issues raised in the SoCG.

Planning Performance Agreement

ECC welcomes discussion with the ExA and the applicants on a Planning Performance Agreement (PPA). NH and ECC have agreed a PPA in respect of the council's engagement with the LTC project over and above our statutory responsibilities as set out in the Planning Act 2008, and this has included payment of an agreed sum for the duration the project during engagement on this DCO which has been extensive. avail

The PPA has recently been extended to include engagement post DCO submission, but does not cover attendance at the DCO Hearings, nor support for legal representation at the same. This has had some impact in covering staff time and resources but nevertheless leave ECC underfunded. Here we would add that ECC are currently engaged on nine other NSIPs currently, including the A12 to A120 NSIP also promoted by NH, and as such our resources usually able for engagement on third-party infrastructure projects are significantly stretched.

2. PROJECT OVERVIEW AND DESCRIPTION OF DEVELOPMENT

The Project would provide a connection between the A2 and M2 in Kent and the M25 south of junction 29, crossing under the River Thames through a tunnel.

The new road, shown as the as proposed A122 in the submission documents, would be approximately 23km long, 4.25km of which would be in tunnel under the River Thames. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, which is a matter for ECC where it sits within its County boundary, linking to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel portals would be located to the east of the village of Chalk on the south of the River Thames and to the west of the village East Tilbury on the north side before travelling north through Thurrock to meet the border with Essex and Brentwood at the far north of the scheme, whilst also extending in part within the London Borough of Havering.

The Dartford Crossing experiences high levels of traffic, with typical daily traffic flows of @ 157,000 vehicles in 2019 (Highways England, 2019a) over the intended capacity. Traffic flows fluctuate relatively little during the year and there is little variation in flow between weekdays, although weekends experience slightly lower flows, even with remote charging being introduced to enable free flowing charging technology. Such traffic flows result in congestion and poor reliability, making the Dartford Crossing an unreliable section of the SRN with the northbound approach to the crossing between the M25 junction 2 and the tunnels being the worst performing 1% of the whole SRN in terms of reliability as stated by the applicant National Highways.

In Essex a new junction is proposed with the M25 between junctions 29 and 30, with improvements to both the A127/M25 junction and a commitment to replace the existing access to the Brentwood Enterprise Park (BEP) to the immediate southeast of this junction. BEP is shown in the Adopted Brentwood Local Plan as a site for employment and economic growth, hence it is considered vitally important that the access to this site is both safeguarded and improved by LTC.

The A122 would be classified as an 'all-purpose trunk road' with green signs. For safety reasons, walkers, cyclists, horse riders and slow-moving vehicles would be prohibited from using it. The Project would include adjustment to a number of local roads. There would also be changes to a number of Public Rights of Way, used by walkers, cyclists and horse riders (WCH). Construction of the Project would also require the installation and diversion of a number of utilities, including gas pipelines, overhead electricity powerlines and underground electricity cables, as well as water supplies and telecommunications assets and associated infrastructure.

The Project states that it would provide over 80% additional road capacity across the River Thames east of London and reduce traffic flows on the Dartford Crossing by 19% in 2030 (opening year). ECC has no reason to suggest that this in an inaccurate statement.

The as stated project benefits can be summarised as:

- approximately 14.5 miles (23km) of new road, with a maximum speed limit of 70mph, connecting to the existing road network from the A2/M2 to the M25;
- two tunnels, one southbound and one northbound;
- improvements to the M25, A2 and A13, where the Project would connect to the road network;
- new structures and changes to existing ones (including bridges, buildings, tunnel entrances, viaducts and utilities) along the length of the new road;

- a free-flow charging system, where drivers do not need to stop but pay remotely, similar to that at the Dartford Crossing; and
- the diversion of electricity transmission overhead lines (including a 2.4km diversion of an overhead electricity transmission line near the A13), and the diversion of high pressure gas mains.

Other stated scheme benefits include reduced congestion and journey times, safety benefits, increasing journey time reliability, and to greatly improve business and HGV transportation across the Thames to enable goods and people to travel more effectively throughout Essex.

In addition, the scheme proposes biodiversity and green infrastructure improvements, economic benefits from local jobs, upskilling, and positive use of the local supply chains.

ECC supports the reasons why LTC is necessary, as it would relieve the congested Dartford Crossing and approach roads, and in doing so improve their performance by providing free-flowing north-south capacity, enabling the free flow of people and goods to cross the Thames.

It is noted that the applicant provides a list of alternatives should LTC not be promoted in accordance with NPSNN paragraph 3.3 which provides broad overarching context in relation to scheme development and states that*: 'Applicants should also provide evidence that they have considered reasonable opportunities to deliver environmental and social benefits as part of schemes'*. ECC concludes that none of the options for alternative provision would provide the benefits as are expected from LTC.

Furthermore, the route as proposed by this DCO has been the subject of extensive consultation, which commenced in 2013, and route optioneering. ECC sees no issue with the applicant's claim that alternatives are not cost effective, necessary in terms of the benefits they would attain over benefits, nor environmentally acceptable.

That is not to say that the route choice itself is not impactful, however ECC will concentrate on the impacts of LTC which are applicable to the administrative area of Essex only for the most part.

3. POLICY CONTEXT

The Government recognises that infrastructure plays a key role in supporting the country and its economy. It connects people and jobs, raises productivity of business and creates opportunities, while individual schemes tackle specific issues such as traffic congestion. This is reflected in a range of Government economic, planning and infrastructure policies including the National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) which is the primary basis for making decisions on DCO applications for major road schemes in England.

Accordingly, Section 2 of the NPSNN sets out the need for development of the national networks, the Government's policy and strategic vison and objectives. Specifically, paragraph 2.2 states that *'there is a critical need to improve the national networks to address road congestion and crowding on the railways to support safe, expeditious and resilient networks that better support social and economic activity; and to provide a transport network that is capable of stimulating and supporting economic growth'*.

Paragraph 2.4 recognises that the need to improve the national network is expected to intensify, stating that*, 'pressure on our networks is expected to increase even further as the long-term drivers for demand to travel – GDP and population – are forecast to increase substantially over coming years'*.

This is supported by paragraph 2.22 of the NPSNN which states that *'without improving the road network, including its performance, it will be difficult to support further economic development, and this will impede economic growth and reduce people's quality of life"*.

It is acknowledged though (paragraph 2.24) that *'the Government's policy on development of the Strategic Road Network is not that of predicting traffic growth and then providing for that growth regardless. Individual schemes will be brought forward to tackle specific issues, including those of safety, rather than to meet unconstrained traffic growth".*

Paragraph 2.27 of the NPSNN goes on to state that '*in some cases to meet the [needs of traffic], it will not be sufficient to simply expand capacity on the existing network. In those circumstances new road alignments and corresponding links, including alignments which cross a river or estuary, may be needed to support increased capacity and connectivity*'.

The Government's Levelling Up the United Kingdom White Paper (Department for Levelling Up, Housing and Communities, 2022) recognises transport infrastructure as an important form of physical capital, reducing 'distances' between people and improving market access for people, firms and workers. Transport infrastructure is identified as one of the Government's core missions in levelling up to drive improvements in productivity, pay, jobs and living standards. Within this the Project is identified as a strategic road investment which will boost productivity, pay, jobs and living standards which will ultimately level up different areas of the country. The Project is anticipated to act as a major road improvement for the East and South East of England, and also for London as the Project will nearly double the capacity across the Thames east of London.

The Second National Infrastructure Assessment Baseline Report (National Infrastructure Commission, 2021a) sets out the current state of the UK's economic infrastructure and identifies key challenges for the coming decades. Section 4.1 of the report states that in terms of levelling up *'improvements in the transport sector can have the greatest impact*', supporting economic productivity and quality of life by addressing constraints to growth and contributing to economic transformation in particular places. The report specifically states that *'transport connections can increase the density of high productivity*

clusters of people and businesses in cities, facilitate trade between cities, make places more attractive to live and work in, and encourage investment in places'. The second national infrastructure assessment will seek to understand these interconnected factors in relation to the long term needs in different regions of the country. The Level 3 Wider Economic Impacts Report (Appendix D of the Combined Modelling and Appraisal) makes clear how the Project creates the potential for substantial economic benefits which is based on facilitation between Kent, Thurrock and Essex.

The National Infrastructure Strategy (HM Treasury, 2020) sets out the Government's plan for a renaissance to build the infrastructure that the country needs and to redress long-standing inequalities, particularly in transport, between different parts of the UK. The Project is identified as a key part of the Government's investment in strategic roads to connect the regions and nations of the UK.

The Build Back Better policy paper (HM Treasury, 2021a) sets out how the Government seeks to guide the UK economy to recover from the effects of the COVID-19 pandemic in a timely and sustainable manner. The Government seeks to do this by building on three core pillars of growth across infrastructure skills and innovation. On infrastructure, the policy paper confirms that it is pressing ahead with the implementation of the National Infrastructure Strategy (HM Treasury, 2020). The Project is explicitly cited in that document. In particular, it is noted that the Government seeks to invest in *"infrastructure to transform delivery and support private investment*" and this includes the Lower Thames Crossing.

The Growth Plan 2022 (HM Treasury, 2022) highlights the Government's commitment to infrastructure development by recognising that the speedy delivery of infrastructure plays a key role in growth. It states that *'the Government is committed to accelerating the delivery of priority major infrastructure projects across the country, as a vital means of driving the UK's economic growth, increasing long-term energy security and delivering Net Zero"*.

The Net Zero Strategy (HM Government, 2021b) sets out the Government's plans for the economy-wide (including transport) transition to net zero. More specifically, the Decarbonising Transport plan (Department for Transport, 2021) sets out the Government's commitments and actions needed to decarbonise the transport system in this country. The Net Zero Highways programme (National Highways, 2021) sets out National Highways' commitments to achieve net zero across its own carbon emissions and road users' emissions in the country, and notes that the Project is to be used as a key project to test low carbon innovation and approaches. The Project was also designated in February 2022 as a 'pathfinder' project that will explore carbon neutral construction which seeks to make the development the greenest road ever built in the UK.

LTC sits within a wider package of works for the SRN in the south-east of England. The Government's Road Investment Strategy 2: 2020–2025, also known as RIS2, (Department for Transport, 2020a) acknowledges that the demands on the nation's roads continue to evolve and change and that investment is needed to update the network accordingly. The Project is identified as a part of this investment, as a project that will be started or completed in the RIS2 period and will *'have a national impact, allowing freight traffic to the continent to bypass Dartford, and have an uncongested route to Dover*'.

The Dartford Crossing is the only significant road crossing of the River Thames east of London. The crossing consists of two bored tunnels for northbound traffic and a bridge for southbound traffic. Designed for 135,000 vehicles per day, it carries 150,000 vehicles on a typical average day, although it regularly carries over 180,000 vehicles on the busiest days of the year (Highways England, 2019a).

For **Essex** the Essex Transport Strategy (Essex County Council, 2011) identifies that the current lack of capacity at the Dartford Crossing is an area of key concern. The strategy continues that it is *'essential that this issue is addressed, not only to support economic growth and regeneration within the Thames Gateway area, but also for long-term efficiency of this vitally important national route'*. It notes that a failure to provide additional river crossing capacity would likely inhibit the long-term competitiveness of the Thames Gateway.

The Development Plan

When deciding applications, s104(2)(d) of the PA2008 requires the Secretary of State for Transport (SoST) to have regard to any other matters considered both important and relevant. The NPSNN requires consideration to be given to policies and information in the development plan 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.

As the Order Limits spans a number of separate Authority/Unitary areas, namely Brentwood, London Borough of Havering, Thurrock, Gravesham and Kent.

Each of the affected Authorities is expected to be submitting its own Local Impact Report. The Policies as may be relevant to the remaining host Authorities are not repeated here.

For Essex the following policy documents provide local policy on key topics of relevance to this development:

Essex Minerals Local Plan July 2014 Essex and Southend-on-Sea Waste Local Plan 2017

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.

Local Highway Authority Policies – Development Management Policies

February 2011

Local Highway Development Management policies have been the subject of a full public consultation exercise, together with a Sustainability Appraisal and Strategic Environmental Assessment. They have been approved by ECC cabinet members for Highways and Transportation and for Communities and Planning and as such have been formally adopted as ECC Supplementary Guidance.

Further Local policies documents considered within the Order limits to manage flood risk and surface runoff are:

The Sustainable Drainage Systems Design Guide for Essex, 2020

The Design Guide provides information to developers involved in the design and development of SUDS in Essex. It promotes an integrated approach to SUDS and landscape design.

Essex Preliminary Flood Risk Assessment (PFRA) 2011, Amended 2018

The Essex PFRA provides a high-level overview of flood risk from surface water, groundwater and ordinary watercourses across the Lead Local Flood Authority (LLFA) study area.

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

The Essex Climate Action Commission has set out recommendations for Essex County Council on tackling the climate change crisis 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.

The Developer's Guide to Infrastructure Contributions, Revised 2020

Essex County Council has produced a developer's guide to infrastructure contributions which details the scope and range of contributions towards infrastructure which ECC may seek from developers and landowners in order to mitigate the impact and make development acceptable in planning terms.

Essex Sector Development Strategy

The strategy has identified five economic sectors with significant growth potential that could be realised in Essex. They cover construction and retrofit, clean energy, advanced manufacturing and engineering, Digi-tech and life sciences.

Green Skills Infrastructure Review for Essex County Council, March 2022

A review of green skills and related infrastructure has been undertaken to identify skills gaps and business needs, the capacity of existing providers and growth plans and to identify how existing or improved skills infrastructure can support the Essex Climate Change Commission's ambition to mitigate the effects of climate change.

4. UNDERSTANDING THE SCHEME'S EFFECTS ON ESSEX

As part of our engagement with LTC on the project, the council has reviewed information provided by NH 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.

It is reiterated that ECC supports the DCO proposal due to the benefits it will provide, but this does not mean that the development should take place at negative cost to the environment nor to amenity.

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 several issues which we consider remain outstanding at this time. The list that follows shows where we consider the local impacts of the scheme on Essex to be, they include:

1. **Lane provision southbound from M25 junction 29:** ECC has consistently opposed the reduction from 3 to 2 lanes from junction 29. ECC understands the logic that has been provided but believes this is a short-sighted move that will cause problems in the future. ECC recommends passive provision for future widening as a minimum.

2. **A13 access to/from west of LTC junction:** ECC is opposed the lack of direct connection between the A13 and the LTC and between the LTC and the A13 westbound. However, noting this matter is within the Thurrock boundaries and is therefore not going to make any further representations within the DCO process.

3. **Connectivity from Orsett Cock to LTC:** ECC opposes the lack of connection from Orsett Cock. However, noting this matter is within the Thurrock boundaries and is therefore not going to make representation through the DCO process.

4. **Variable charging as reactive mitigation:** ECC believe that NH should retain some control of the user charging regime, such that the charges can be adjusted if needed (e.g. between different vehicle types and emission classes, time of day, weekdays and weekends etc), with appropriate controls in place, as a means of influencing usage.

5. **Cross-river cycling provision:** ECC asked the Project to commit to facilitating bicycle travel through the tunnel. Further ECC has expressed disappointment that the proposed provision would be less than at Dartford feeling this is contrary to the spirit of the agenda to make cycling a safe and attractive journey choice.

6. **Tilbury Link Road/junction provision:** ECC oppose the lack of a junction at Tilbury. As a minimum ECC would at least request some form of assurance to revisit in a future round of the RIS and urges a review of the current position to include a connection given the Government's strong support for Thames Freeport and the opportunity this brings.

In addition ECC retains a number of issues with LTC which remain outstanding at this time, these being:

1. **Brentwood Enterprise Park (BEP) interface:** ECC have asserted that the Project should not compromise the viability and access to the BEP. The site is now in Brentwood's adopted local plan and subject to an active planning application. ECC has requested that the Project coordinates safe and suitable access during construction and operation of BEP and the Project. It is vitally important that LTC, which effectively removes the existing entrance to BEP,

provides an alternative point of access which is both suitable for the traffic generated, safe and future proofed.

2. **Cross-river bus services and public transport infrastructure:** ECC urges NH to ensure that the opportunity to improve cross-river public transport connectivity and capacity provided by the Project is fully realised. There is clear potential for a Fastrack/South Essex Rapid Transit (SERT) type service linking Essex to Kent.

3. **Modelling impacts on specific roads and junctions:** Modelling has highlighted numerous junctions experiencing negative capacity and flow impacts. The locations affected are beyond the immediate vicinity of the Project, due to changes in routing choices

4. **Mitigation of identified impacts:** ECC requested mitigation by National Highways for negative traffic impacts identified on the wider road network. ECC seeks accelerated funding and delivery of these mitigations to maximise any consequential opportunities for housing and economic growth. A clear understanding with National Highways is needed about how the required mitigation will be determined.

5. **Skills Education and Employment (SEE) strategy development:** ECC has been clear that it encourages early engagement on SEE and secure a coordinated strategic approach between major highway projects in the county given the number of simultaneous schemes. The Project presents opportunities to provide positive benefits in the form of apprenticeships, training, skills development, jobs and engagement with local schools and colleges particularly around STEM subjects.

6. **Local targeting of provision:** ECC wishes to see a clear emphasis on Essex-based businesses benefitting from supply chains as opposed to general SMEs. More local focus in terms of reports on workforce origin and the local economic backdrop was requested.

7. **Procurement and delivery:** ECC requested a sharper explanation of targets and how they would be monitored as opposed to ambitions. Essex County Council flagged that urgent skills and supply chain issues required work to mitigate risks to the Project.

8. **Future skills/work pipeline:** ECC is keen to understand and maximise the legacy of skills, training and employment. The draft Strategy was perceived to lack emphasis. Construction sector capacity and productivity should be permanently enhanced and direct financial contributions from the National Highways towards gaps in physical and social infrastructure were recommended.

9. **Evidence base for the project:** ECC requires continuing socio-economics evidence base on the project from NH to inform its position on the Skills, Education and Employment Strategy.

10. **Cycle network enhancements:** ECC requested a comprehensive and coherent cycling network linking South Essex areas as part of the Project, or the ability to pursue these via designated funds.

11. **Walking, Cycling and Horse-riding (WCH) access to Brentwood Enterprise Park:** ECC requested that any altered or new bridge to the east of the M25 will need to consider the new structures proposed for the Brentwood Enterprise Park (BEP) development, and maintain Public Rights of Way (PROW) connections as appropriate.

12. **Impact monitoring – multiple topics:** To identify scheme effects a robust monitoring plan must be in place which considers traffic impacts and effects on air quality, noise and socio-

economic factors. This monitoring plan needs to cover a sufficiently large area in sufficient depth to ensure the impacts of this Project can be properly identified and understood. A robust monitoring plan with input from affected stakeholders should be a requirement of the DCO for the scheme.

13. **Hole Farm – Offset Pollution Impacts:** ECC note the inclusion of Hole Farm within the DCO, which is welcomed for the benefits it would bring to the environment and local communities who would use it. It is NH's intent to implement the proposed Hole Farm site hence it is reasonable to question if, as intended, this can be also counted as a benefit for LTC.

5. HIGHWAYS AND TRANSPORTATION

LTC Modelling

ECC has received two versions of a cordoned section of the LTC models produced by National Highways. An initial model and associated outputs were received in 2021, with an updated version issued in summer 2022. It is assumed that this cordoned version of the model is largely consistent with the full model used to produce the submission documents which have been submitted by the applicant. (If National Highways has made any significant changes to their full model since the previous issue of the cordoned model to ECC, we would request that an updated version of the cordoned model be provided to enable us to review and identify any further points of concern to be discussed as part of the DCO process). The provision of the cordoned model has enabled ECC to interrogate the expected impacts of LTC in areas where the main Transport Assessment submitted in support of the application is either silent, or only addressed in basic terms.

We have carried out analysis using the cordoned model to examine the changes in traffic flows between the "do minimum" and "do something" model scenarios, and from this have identified locations where there is potential for significant impacts to arise on the local highway network within Essex as a result of the attraction of new vehicle trips to the network, and re-routing of existing trips by vehicles as a result of the presence of the LTC.

This section of the report briefly summarises the outcomes of analysis and the associated conclusions regarding the expected impacts on the ECC road network. The work has been undertaken by SYSTRA on behalf of ECC, with consideration of the findings undertaken by both parties. This analysis is intended to sit alongside the formal TA submitted in support of the application, rather than supersede it.

For ease of reference, the model base year remains 2016 but the future year models reflect a revised opening year of 2030 with additional future years being 2037, 2045 and 2051.

For the purposes of analysing impacts within Essex the 2030 opening year and 2045 forecasting year models have been used as the main data sources.

In addition to the cordoned SATURN model, ECC has also been provided with QGIS shapefiles for all of the models, based on runs undertaken by National Highways. These shapefiles include the following information:

- Total PCU flows by link;
- Volume to capacity ratio by link;
- Net speed on link (kph);
- Number of cars;
- Number of light goods vehicles;
- Number of Heavy goods vehicles;
- Percentage of Heavy goods vehicles; and
- Time along the link

The shapefiles have been utilised to produce maps to assist with interpretation of the data; selected examples have been included in this section of the LIR to illustrate elements of the work undertaken.

Do Something vs Do Minimum 2030

The plots in Figure 1 and Figure 2 show the difference in flows in PCUs between the 2030 Do Something and Do Minimum runs.

Figure 1. Do Something vs Do Minimum 2030 AM

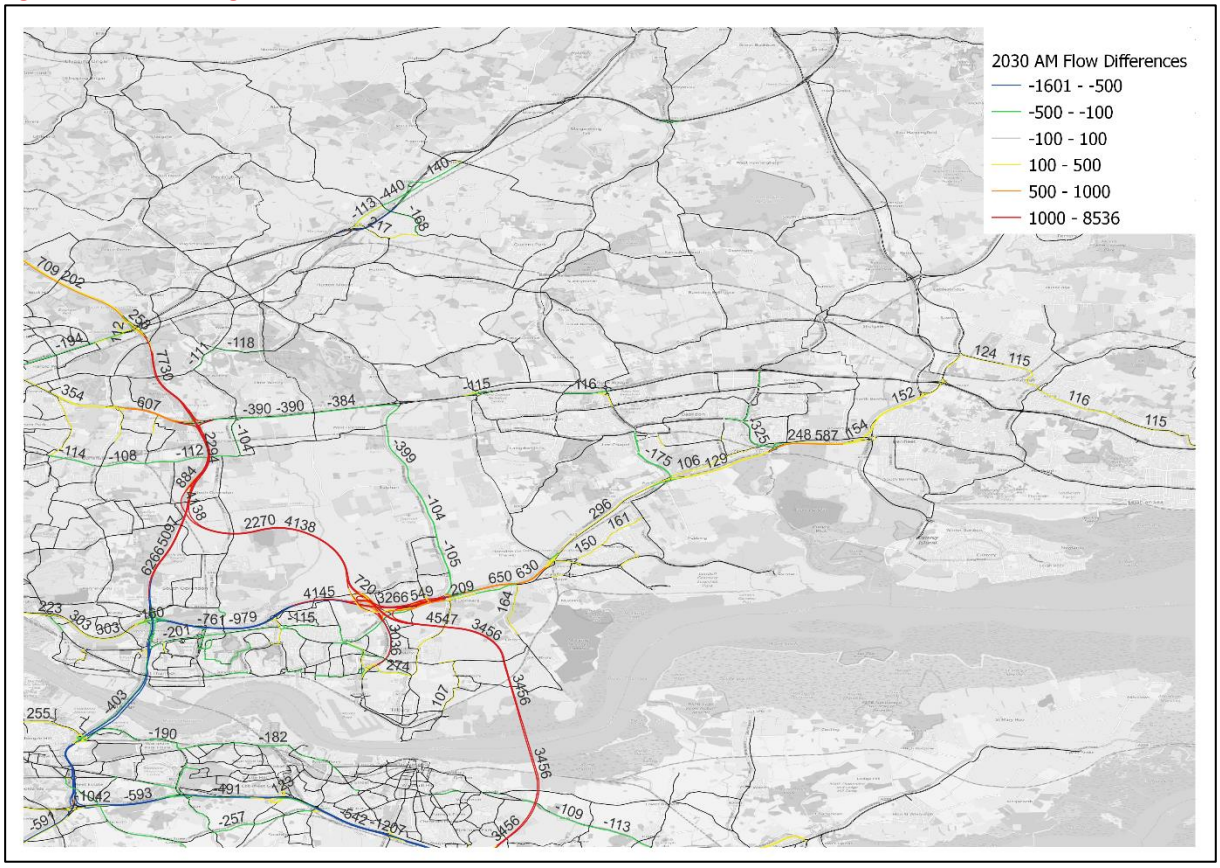
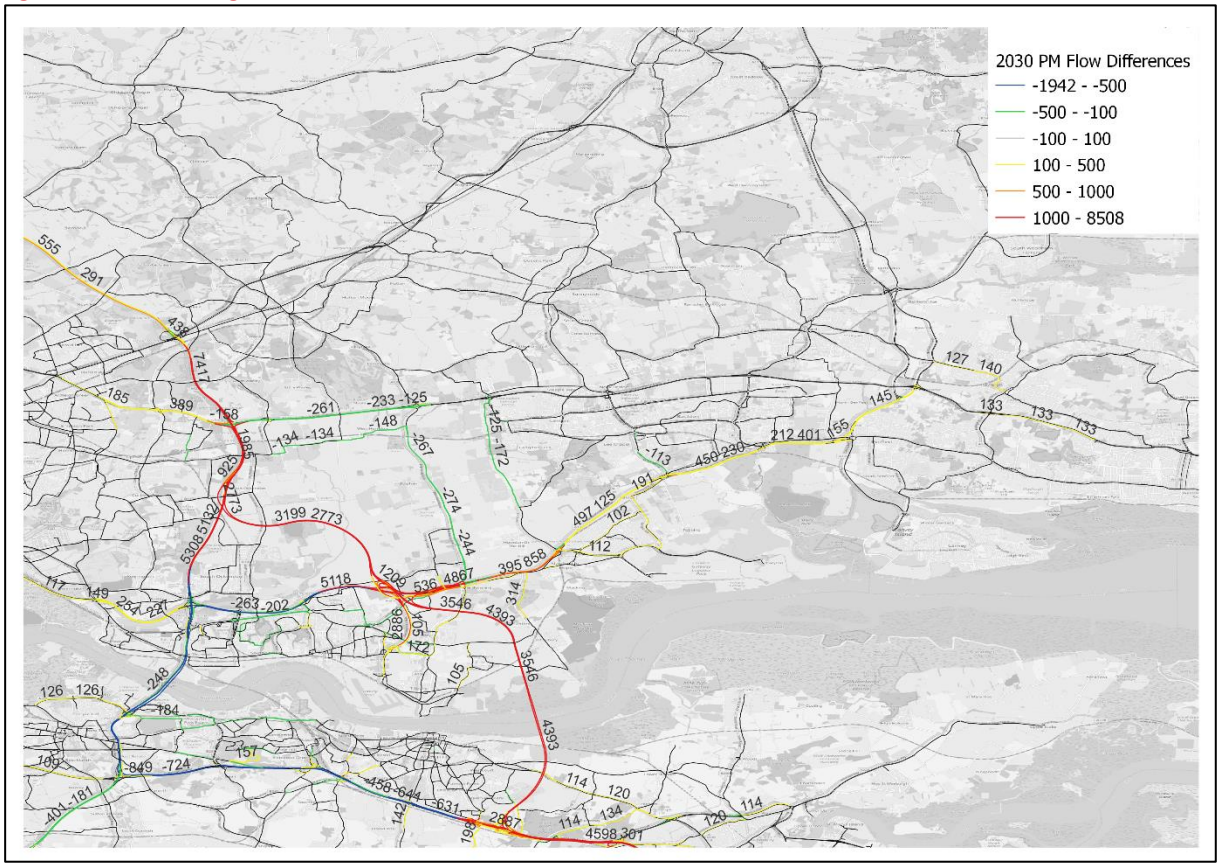


Figure 2. Do Something vs Do Minimum 2030 PM



The maps produced for 2030 show that, as would be anticipated, the major changes mostly occur close to the LTC scheme.

During the AM peak it can be seen that the LTC is resulting in a reduction in traffic along the A13 between the M25 and the LTC of approximately 1,000 PCUs. To the east of the LTC though there is an increase in traffic on the A13 eastbound of approximately 650 PCUs as far as the A1014 junction. The flows to the east of this are still forecast to be higher than without the LTC but reduce as distance increases from the LTC scheme.

There is also a reduction in traffic on both the A127 westbound (approaching 400 PCUs) and on the A128 northbound (400 PCUs) as traffic is expected to divert onto the LTC.

There are limited changes elsewhere on the network in the AM peak forecast in 2030.

During the PM peak the re-routing of traffic is similar, although as would be expected there is some alteration in the directionality of the changes. On the A13, the largest change in flows is westbound from the LTC to the M25 (approximately 1,000 PCUs). The scale of change on the A13 westbound toward the LTC scheme is higher at approximately 500 PCUs in the PM peak.

As in the AM peak there is a reduction in traffic expected in the PM peak on the A127 and A128, albeit eastbound on the A127 (-280 PCUs) and southbound in the A128 (-270 PCUs).

In summary, the flow difference analysis indicates that major change to traffic flows in or near Essex will be largely constrained to the main A13 and M25 corridors.

Do Something versus Do Minimum 2045

Figure 3 and Figure 4 show the changes in flows for 2045 for the do something model scenario compared to the Do Minimum.

Figure 3. Do Something 1 versus Do Minimum 2045 AM

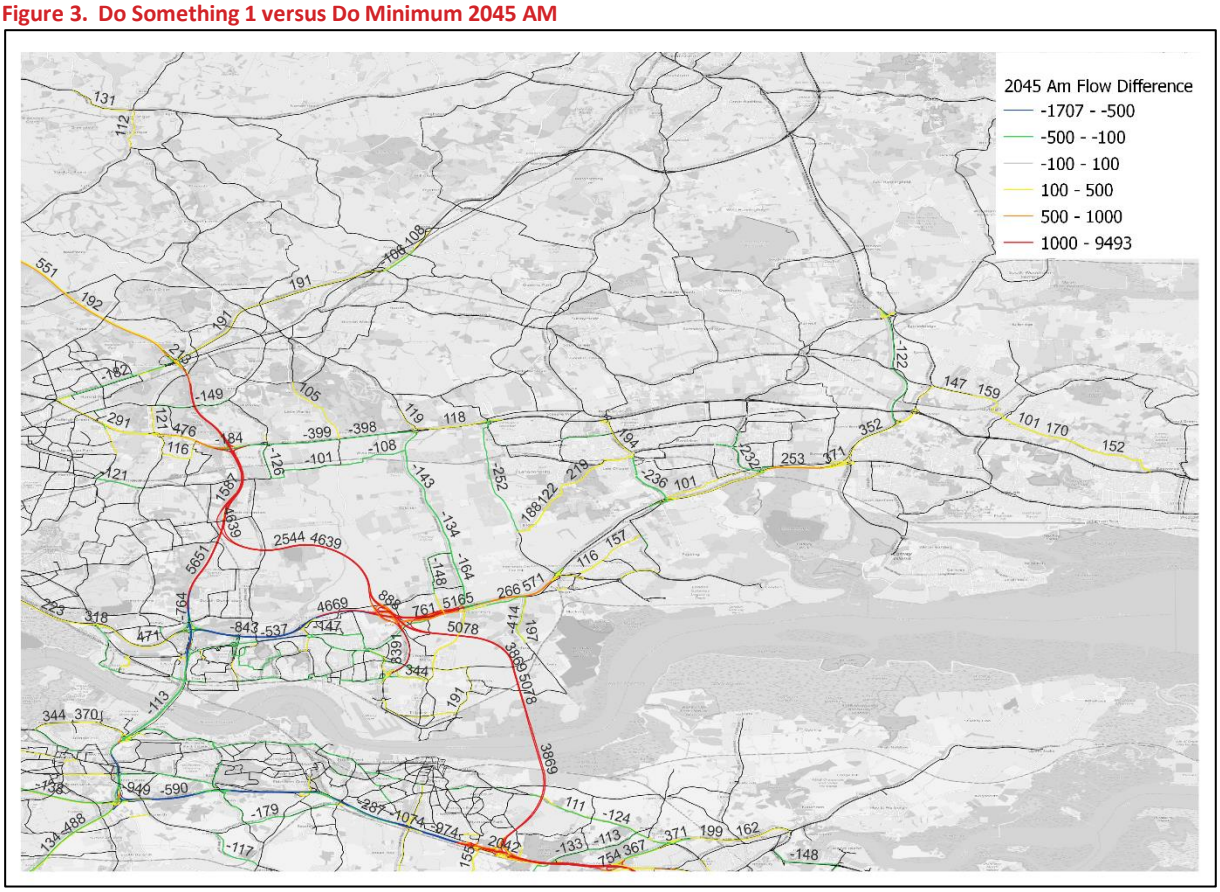


Figure 4. Do Something 1 versus Do Minimum 2045 PM

As with the 2030 opening year, the 2045 forecast year shows very similar trends in flow changes between the two different "do something" scenarios.

In the AM peak, there is a reduction in expected flows westbound from the LTC towards the M25 of more than 1,000 PCUs and a reduction of 800 PCUs eastbound. To the east of the LTC, flows on the A13 increase by approximately 600 PCUs in both directions as far as the A1013 junction.

There is a reduction in expected flows on the A128 of approximately 300 PCUs northbound which is less than the reduction observed in 2030 due to overall traffic levels being higher by 2045. There is a corresponding reduction in flows on the A127 westbound of almost 400 PCUs.

The PM peak change in traffic flows on the A13 suggests a reduction of approximately 1,000 PCUs westbound between the TLC and M25. To the east of the LTC, flows on the A13 increase by almost 900 PCUs in both directions. This is a smaller increase in westbound flows than is expected in 2030.

Finally, the A127 and A128 also expect to see reductions in flows. The A128 flows are expected to reduce by approximately 300 PCUs southbound and 200 PCUS northbound. Flows on the A127 reduce by more than 200 PCUs in both directions.

In summary, as was the case in the AM peak, the flow difference analysis indicates that major change to traffic flows in or near Essex in the PM peak will be largely constrained to the main A13 and M25 corridors. More detailed analysis has nonetheless identified some specific local areas of impact; these are discussed further below.

Hotspots

Figure 5 and Figure 6 show change in ratio of flow to capacity (RFC) between the Do Something and Do Minimum model scenarios (in 2045) which has been calculated to identify locations where the forecast junction performance deterioration is most pronounced in terms of junction performance. The following criteria has been applied to identify junctions where operational performance materially worsens:

- one of the arms both exceeds a RFC of 85% **and**
- this RFC has increased by more than 5% compared to the Do Minimum scenario.

Both plots show 2045 model results **Error! Reference source not found.** with the identified junctions potentially experiencing issues with the predicted future demand.

Figure 5. Junction Hotspots 2045 AM

Figure 6. Junction Hotspots 2045 PM

The junctions with the highest forecast change in RFC for the Do something compared to the Do Minimum model in the AM and PM peaks are listed below in Table 1 and Table 2.

Table 1. *Severe RFC locations AM 2045*

JUNCTION	AM RFC % (DM)
B1007 Stock Road Southbound to Ingatestone Road junction	100% (82%)
Wigley Bush Lane Northbound to Weald Road	101% (74%)
A13 westbound merge from A176 junction	135% (118%)
M25 Southbound off slip to A12	100% (91%)
M25 Southbound off slip to A12	96% (75%)
A176 Roundacre Northbound to Upper Mayne roundabout	96% (85%)
Downham Road Southbound to Dowsetts Lane / Hawkswood Road junction	101% (91%)

Table 2. *Severe RFC locations PM 2045*

JUNCTION	PM RFC %
A13 Westbound merge from A132 junction	104% (90%)

JUNCTION	PM RFC %
A13 Westbound merge from A176 junction	104% (66%)
A12 Eastbound merge from A1023 junction	100% (88%)

With regard to those junctions on the A12, A13 and M25 corridors, the analysis presented in the TA report and associated documents indicates that the impacts in these locations arise as a result of efforts to achieve acceptable performance by the junction as a whole. ECC will carefully consider any further changes to these junctions which may be brought forward, particularly where there is potential for delays at junctions on these corridors to create "knock on" issues on the adjacent ECC network. However, on the basis of the information provided to date, we are of the view that the proposed mitigation put forward in the main TA report and associated documents is acceptable in principle.

Additional investigation into the hotspots that are not related to the A12, A13 or M25 has been undertaken, in order to better understand the causes of the expected changes to junction performance in these locations.

At the junctions in question, the location of the junction means that local traffic in the area has limited alternative routes. With the opening of the LTC scheme, an increase in demand from the surrounding area appears to be the driver for the junction struggling with capacity. The Wigley Bush Lane junction has been the subject of further Select Link analysis to test this; the analysis in this instance shows that the traffic is completing journeys to and from the local area, rather than using the junction as part of a "rat run" or longer journeys originating outside of the local area, and it is considered that similar findings would arise from examination of the other listed locations.

Given the nature of the local roads and junction constraints, physical mitigation measures at this location (and the others identified via this analysis) would be considered to be out of keeping with the local area, as these would either result in a significantly larger junction footprint or entail the installation of signals, which would be expected to cause other issues in capacity terms. However, the potential sensitivity of these locations means that ECC will seek suitable provision to be made for monitoring of both the key junctions in the A12, A13 and M25 corridors, and at the "hotspot" locations, before and after the scheme is constructed and opened to traffic.

Additional Select Link Analysis

To assist in verification of the conclusions drawn from the previous work, National Highways were requested to undertake a series of Select Link Analysis exercises using the full model, the aim being to identify changes in vehicle routing to and from destinations in Essex for trips using the existing Dartford Crossing and the LTC. These exercises were completed, and the results have been analysed by SYSTRA on ECC's behalf.

The tests have shown that, whilst there would be some considerable re-routing of vehicles with the opening of the LTC, a majority of trips are switching between the major existing corridors (A12, A13 and M25); there is only limited evidence of any significant increase in trips using more minor or "cross country" routes. Some growth is observed in the A120 corridor, but the other model tests have indicated that this growth can be accommodated within ECC's network. Traffic largely appears to use the most "logical" route depending on its start/end point within Essex and there is no significant evidence of traffic taking longer routes or diversions as a result of congestion in Essex.

Conclusion

In conclusion, ECC and SYSTRA's work has shown that the proposed LTC is not expected to have any unacceptable impacts to the ECC Highway Network, subject to implementation of the mitigation proposals set out in the submitted TA documents. This conclusion is based on the materials provided to ECC as described in this summary; should additional or revised information in relation to the scheme proposals or supporting modelling be submitted during the course of the examination, ECC will wish to review this and if necessary, amend our comments accordingly.

6. MINERALS AND WASTE

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.

Only a small percentage of the DCO route will be within the admirative boundary of Essex. The MWPA notes in the as submitted "6.3 Environmental Assessment Appendices Appendix 11.2 – Mineral Safeguarding Assessment" states at para 4.4.1 that "No preferred or reserved mineral extraction sites and safeguarded minerals infrastructure allocated within the Essex Minerals Local Plan were identified within or close to the Order Limits". that the development will not permanently impact the mineral reserves under the route of the chosen NSIP.

It is noted that this submission makes it clear that the report raises professional assumptions as to the potential impact the development will have on the future need for construction materials and uses a similar number of assumptions following downturns during Covid-19. This is understood, and a worse possible case scenario has been used to assess impact.

For mineral importation of scheme materials, a notational distance is set out by which such would be sourced which suggests 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 Southeast of England (Kent). whilst it is also noted that at this time, and without a principal contractor in place, the source of the same cannot be guaranteed, but nevertheless those in proximity of the development could be preferred to reduce transportation costs, and the proximity principle will be applied. Similarly, some of the materials to be used in the construction of this NSIP are not present in Essex nor the region and the use of the as proposed jetty into the Thames could be used to receive such material, reducing the impact on the road network, and sourcing materials by sustainable transport means.

This, plus the ability to use materials suppliers and waste management infrastructure from a wide range of locations would also allow existing material resources and waste management capacity to be used effectively and efficiently, without resulting in local overcapacity to the detriment of the local economy.

However, with their being no calculated figures about how much sand and gravel would be used in the construction of the development, other than it being reasonable to assume quantities needed would be substantial, nor any idea as to where the materials would originate from at this time, it makes it difficult to assess the impact the scheme could have on available resources to retain the MWPA obligation to retain a 10 year supply of minerals.

ECC is currently in the process of looking to consider its minerals and waste policies with the aim of providing a new Adopted Minerals and Waste Plan soon, and any significant development impact is required to inform the consideration of the same going forward. For LTC the impact on mineral supply in Essex are far from proven or guaranteed at this time.

Safeguarding Waste Infrastructure

The scheme will not impact on existing waste facilities within Essex and hence will have no impact on the same.

The scheme will produce waste, and as such the implications of the same need to be prescribed pursuant to Policies within the WLP. The site is anticipated to generate a wide range of C&D wastes including, but not limited to, groundworks, asphalt planings, soft estate vegetative arisings, road sweepings, gully arisings, oil separator waste, amongst others. The ES which accompanies the submission states that the Policies within the WLP have been taken into consideration as are also in Table 11.7 within Chapter 11 of the ES.

ECC welcomes LTC's commitment to apply the circular economy principles, as set out in the Waste and Resources Action Programme (WRAP), and the waste hierarchy to manage and mitigate likely significant effects taking account of the relevant characteristics of the future baseline environment. It is the clear intent of the applicant to minimise waste arisings at the site thru the implementation of a waste hierarchy, this is both a sensible and sustainable approach, reducing the reliance of landfill sites for extraction material and reducing vehicles on the highway network, committing to re-use and recycle as much material as possible. All waste arisings would be monitored via the SWMP (or equivalent in substance) during construction.

LTC within Chapter 11 of the ES indicates that overall the scheme waste arisings, with the principles as set out above in place, and with a commitment to monitor and report back on the same, the waste implications of the scheme would not be significant. On balance and with the details as are within the submission this is considered broadly accurate.

7. HISTORIC ENVIRONMENT

The applicants have consulted appropriate sources of information regarding known designated and non-designated heritage assets. Although the desk-based assessment has been agreed to be sufficient the EIA assessments of significance and harm causes concern in some areas as there are some areas where the interpretation has been questioned. However, in general the desk-based assessment process has been agreed.

Archaeological field evaluation in the form of bore holes and trial trenching has covered the majority of impacted areas in Essex and have provided vital information on the extent of archaeological deposits and their significance and has informed the mitigation strategy.

Some documents such as the revised Holocene report and revised Outline Written Scheme of Investigation (OWSI) are still awaited.

Construction impacts on Heritage assets

Construction impacts are broadly understood but further detail is needed to inform the mitigation proposals in the Archaeological Outline Written Scheme of Investigation.

Trial trenching and assessment of the geo-technical boreholes have been undertaken over most of the area impacted. The main area of concern is the lack of evaluation at the tunnel mouth where there has been limited assessment resulting in the heritage impact of the scheme being unknown. As a result, if significant deposits survive within this area mitigation cannot be defined for the application. It is recommended that a programme of archaeological evaluation is undertaken on the tunnel mouth to define the presence and significance of archaeological deposits and identify the most appropriate mitigation strategy to be included within the OWSI.

Loss of the Scheduled Monument at Orsett

Within Thurrock the construction of the road will result in the removal of almost the entirety of the Crop Mark at Orsett Scheduled Monument (List Entry Number: 1002134), and certainly all the areas of archaeology that would contribute to the assets significance. It would also result in the removal of an associated and related site (see site 247 below) which sits to the north of Stifford Road and outside of the original Scheduled Monument but should be considered to be of similar importance to the Scheduled Monument as defined in Policy NPSNN 5.124. Sections 6.5.165 of Planning statement 7.2 and 6.3.78 of Chapter 6: Cultural Heritage do not recognise the importance of site 247 even though it is part of the same complex that is Scheduled to the south. There would be a significant effect in EIA terms and in terms of the assessment the impact would be 'major adverse'. In policy terms this would be substantial harm.

Site 247 forms an extension of the Scheduled Monument and should be treated to the same standard as that of the Scheduled Monument and preferably at the same time. This should also be identified throughout the documentation as being of a similar significance to the Scheduled Monument.

Mitigation proposed for Heritage assets

The general mitigation strategy is defined in the Outline Written Scheme of Investigation, which is still under discussion, but at this stage this will comprise more than 120 areas of archaeological investigation north of the Thames. It is recommended that the application should contain clear maps of each of the mitigation areas proposed, which are at a scale that is readable (potentially as part of the OWSI).

We have commented repeatedly on the desirability of enshrining key underlying principles of archaeological mitigation within the CoCP and REAC. Though some progress has been made, we continue to press for archaeological management and especially the role of the local authority Archaeologists for monitoring and signing off the mitigation to be appropriately acknowledged and clearly and consistently defined as part of the wider environmental response.

Historic Buildings

Key issues

The most significant impacts to built heritage within Essex resulting from the LTC are the demolition of three Grade II listed buildings (1-2 Grays Corner Cottages, The Thatches & Murrells Cottage, and Thatched Cottage) and the degradation of the setting of Baker Street Windmill, also a Grade II listed building. Securing the appropriate level of mitigation to address the harm or loss of significance resulting from the demolition or change within the settings of these listed buildings remains a key issue.

Compliance with NSPNN

Paragraph 5.127 of the National Policy Statement for National Networks (NSPNN) states that an applicant must describe the significance of any heritage assets affected in order to understand the impacts of a proposal. ES Chapter 6: Cultural Heritage and the associated appendices have complied with this policy. With regards to considering the impact of LTC on the setting of heritage assets, the methodology adopted complies with the established best practice Historic England guidance: The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning: 3 (2nd Edition).

Mitigation

As detailed in the Cultural Heritage ES Chapter, environmental considerations have influenced the design and certain commitments in regard to cultural heritage have been made through 'embedded mitigation', 'good practice' and 'essential mitigation'.

The design incorporates embedded mitigation to address the impact on Baker Street Windmill in the form of planting and the creation of an earth bund to limit the land required and provide visual and noise mitigation.

The Register of Environmental Actions and Commitments (REAC) (within ES Appendix 2.2) and the Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation (AWS-OWSI) (within ES Appendix 6.9) set out the 'essential mitigation' for built heritage assets. There is a specific commitment in the REAC (CH004) for the Level 4 Historic Building Recording of the three listed buildings. The REAC also commits to adhere to the AWS-OWSI (CH001) and this includes the Level 3 Historic Building Recording of Baker Street Windmill.

There is a further commitment (REAC CH008) to implement Cultural Heritage Asset Management Plans for heritage assets remaining in their ownership at operational stage which included s small part of Coalhouse Fort.

Further work/mitigation

There is potential for further mitigation for the loss of the Grade II listed Thatched Cottage in particular. As a timber-framed building of a modest size, it is a good candidate for dismantling, relocating and reconstructing. Further consideration is needed as to the appropriate location for its reconstruction and to the potential benefits of a legacy project involving the use of the building in

training/upskilling in traditional building techniques. Whilst the building would lose its historic context and setting, its reconstruction would offer a high level of mitigation as there would no longer be a complete loss of the building's significance.

In regard to Baker Street Windmill and the effects of the LTC on its setting, it needs to be clear within the AMS-OWSI that the Historic Building Recording is to have a particular emphasis on recording the setting of the Windmill.

ES Chapter 6: Cultural Heritage (and appendices)

The data sets used in the assessment of heritage assets and the production of the Cultural Heritage ES Chapter (and supporting technical documents) are acceptable. The assessment process for built heritage is based on the relevant legislation, policy and guidance and also raises no concern. It is considered that both the construction and operational impacts have been correctly identified.

ES Appendix 6.16 - Historic Buildings Recording

Historic Building Recordings have been carried out for the three listed buildings proposed for demolition (ES Appendix 6.16 - Historic Buildings Recording) and this will be enhanced as the buildings are dismantled (REAC commitment CH004). The records are at Level 4 and are an appropriate pre-demolition record of the buildings.

Draft DCO

Section 20(1) allows for protective works to be carried out to any building on any land which may be affected by the development. Part 9 of Section 20 states that the undertaker of any protective works to a listed building must service notice on the local planning authority and have due regard to any response received. This will allow for any works to listed buildings to be monitored (although they are not currently envisaged).

8. LANDSCAPE

In submitting the response on this topic reference is made to the 6.1 Environmental Statement Chapter 7 - Landscape and Visual.

Within section 7.6: it is acknowledged that only small sections of local landscape character are affected by the creation of the Lower Thames Crossing in Essex, but those effects are *significant* at the construction stage, namely:

Thurrock Reclaimed Fen (sub area Mardyke): Effects are described as *Very Large Adverse* and include:

- Conspicuous construction activity within the rural and former fenland landscape
- Loss of hedgerows
- Perceived change in the night-time environment, experienced within a largely dark area
- Substantial loss of arable farmland
- Loss of tree belt along the Mardyke and partial loss of The Wilderness woodland block
- Change to the existing flat, low-lying landform of the former fen landscape
- A reduction in the level of tranquillity due to construction activity, particularly within the former fen landscape

Thurrock Reclaimed Fen (sub area Thames Chase) where the landscape effects during construction are confirmed as being *Moderate Adverse* hence significant. Effects include:

- Conspicuous construction activity within the context of the M25 corridor
- Loss of roadside screen planting
- Damage to the character of the Thames Chase Forest Centre and adjoining Community Forest area due to the loss of effective roadside woodland screen
- A further reduction in relative tranquillity experienced along the M25 corridor

During construction the view from Footpath PRoW 272_179and 176 receive a *Moderate Adverse* effect which is significant.

At the operational stage the effects on *Thurrock Reclaimed Fen (sub area Mardyke)* remain *Large Adverse* overall.

Those on *Thurrock Reclaimed Fen (sub area Thames Chase*) reduce to *Slight Adverse.*

It is concerning that many recreational receptors on PRoW have the same sensitivity as transport receptors. I cannot see how these fits with the GLVIA guidance.

Whilst much of Thames Chase Community Forest is outside the Essex administrative boundary, it is deeply concerning to see how this proposed programme will negatively impact and sever this innovative, major peri-urban greenspace that so much time and effort and funding has created since the late C20th. ECC are concerned that the ES does not appear to recognise the importance of Thames Chase as a major greenspace and community project nor the impact on Thames Chase as a whole instead of just on its constituent elements.

If this project goes ahead a substantial community environmental compensation fund should be set up by the applicants akin to that that accompanied HS1 (the Channel Tunnel Rail Link) in order to help conserve and enhance Thames Chase and The Land of the Fanns.

9. ECOLOGY

Policy context

To satisfy the requirements of the relevant paragraphs of the National Policy Statement for National Networks (NPS NN 2014), the evidence base and Environmental Masterplan needs to ensure that impacts on ecological features is not greater than anticipated and proposed mitigation and compensation measures are appropriate and deliverable.

In relation to paragraph 5.23 of the National Policy Statement for National Networks (NPSNN, which states 'The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests', the Biodiversity Metric calculations have assessed the Biodiversity Net Gain (BNG) baseline conditions and the post development BNG forecast to be generated by the Project.

Data sets

The data sets supporting the ecological assessment in the submitted ES Chapter 8 Terrestrial Biodiversity Version1.0 Application Document Ref: TR010032/APP6.1 (Oct 2022) and other relevant supporting information are appropriate.

Assessment process

Overall, the quality and accuracy of the ecological surveys and reports within the DCO submission is satisfactory although it is very difficult to understand which impacts and mitigation measures relate to each of the individual LPAs.

The ecological assessments undertaken have informed likely impacts from both construction and operational phases of the project and confirms how target compensatory habitat and condition will be achieved. Confidential protected species reports have been submitted to protect details of sensitive species

The methodology set out in the Design Manual for Roads and Bridges (DMRB) LA 108 Biodiversity (Highways England, 2020a) and relevant guidance including Chartered Institute of Ecology and Environmental Management (CIEEM) publications has been followed. The Terrestrial Biodiversity chapter has also had due regard for the methods of assessing the impact of changes in air quality on designated and non-designated sites as set out in DMRB LA 105 Air Quality (Highways England, 2020b).

Potential impacts on other protected species e.g. bats, Great crested newts, water voles, are detailed with mitigation measures, in Chapter 8 of the ES including unlit sections of road to provide dark corridors for photosensitive species and warm white luminaires to reduce the impacts on insects and bats.

Mitigation proposed (including embedded mitigation)

The mitigation hierarchy has been applied and where protected species licensing will be required, the draft application has been provided to support the DCO. Biodiversity losses include ancient woodland and veteran trees (both irreplaceable habitats) and compensation features have been embedded into the design of the project and recorded in ES Appendix 2.2 which includes both the Code of Construction Practice (CoCP) & Register of Environmental Actions and Commitments (REAC). Table 8.35 Habitat losses and gains associated with the Project to the north of the River Thames includes

references to the EMP for locations of habitat creation and enhancement but these are not matched to losses of habitats.

Biodiversity Net Gain (BNG)

The current BNG assessment is based on the preliminary Project design as of August 2022 and uses the Biodiversity Metric 3.1 Calculation Tool to determine whether the Project could result in a net gain in biodiversity units. The Metric results for the project overall are predicted to be 7% for habitat units but -11% for hedgerows and--7% for rivers and streams which is unacceptable. The submitted calculations therefore do not include how the deficiencies to ensure no net loss of biodiversity will be overcome for the scheme which is necessary before any claim for BNG can be made for this NISIP.

The BNG assessment uses the Biodiversity Metric 3.1 Calculation Tool to determine whether the Project could result in a net gain in biodiversity units; full details of the methodology and calculations are provided in Appendix 8.21: Biodiversity Metric Calculations (Application Document Ref: TR010032/APP/6.3).

DCO Requirements

The REAC Table 1 Appendix 2.2 – Code of Construction Practice, First Iteration of Environmental Management Plan contains specific commitments (HR001- HR012 and TB001-TB028) for mitigation, compensation, biodiversity enhancements and long-term monitoring. These will be delivered under DCO Requirement 4 Environmental Master Plan (which includes the CoCP) for the construction phase and Requirement 5 Landscape and Ecology Management Plan (LEMP) to deliver long term gains during the operational phase.

The establishment of an advisory group to help inform decision making throughout the duration of this LEMP will help inform the establishment of relevant habitats in appropriate locations using native species. This needs to deliver BNG as well as ecological functionality and connectivity with existing Priority woodland habitat.

10. ARBORICULTURE

An Arboricultural Impact Assessment will be required where existing trees and vegetation are located within the area of the proposed development. This assessment should be undertaken in accordance with 'British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations' and should provide details on trees and vegetation to be retained and/or removed, including any significant impacts and constraints. This will identify all trees within the site that would pose a constraint to this development and whether they are of sufficient quality to merit protection and/or retention.

An Arboricultural Method Statement and associated tree protection plans will be required where retained and existing trees and vegetation will require specialist working methods or adequate protection measures to be in place for the duration of the development.

Where trees pose a constraint, or their removal is required for this development to proceed then replacement tree planting opportunities should be incorporated into the design through methods such as native hedgerows and SUDs schemes to offset any vegetation loss.

11. GREEN INFRASTRUCTURE

ECC currently provides advice on green infrastructure schemes (GI) for major developments. ECC 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

ECCs GI Team recommended that the following Local Development guidance are taken into consideration, apply and reference the:

- Essex Green Infrastructure Strategy, 2020, aims to enhance the urban and rural environment, through creating connected multi-functional GI that delivers multiple benefits to people and wildlife. It meets the County Council's aspirations to improve GI and green spaces in our towns, city and villages, especially close to areas of deprivation. <Essex GI Strategy>
- Essex Green Infrastructure Standards, 2022, provide clear guidance on the requirements on both planning policy and planning application and processes. <Essex Green Infrastructure Standards | Essex Design Guide>

These documents 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.

- Local Planning Authorities (LPA)[1] Green Infrastructure Strategy/ SPD or equivalent green and open space strategies provides further guidance on the LPA's Local Development Plan policies regarding the Council's approach to green infrastructure provision in the local authority area.

Comments in relation to the Environment Statement, Draft Development Consent Order, Outline Local Ecology Management Plan, Planning Statement and Green Infrastructure Study.

It is noted that the Planning Statement has undertaken a Green Infrastructure Study (Appendix H) and the planning statement also refers to GI and demonstrates policy links such as NPSNN and climate adaptation. We also welcome the statement in that "the project would leave a positive legacy of green infrastructure and improved biodiversity". The ECC GI team notes however, that there was limited reference to GI in the Environment Statement [see general overall comment].

However it is recognised that some of the natural assets mentioned are also GI assets. We also note that in general the Design Principles document considers green infrastructure as part design approach to infrastructure, bridge structure and Landscape Legacy objectives to reduce significant effects on green infrastructure assets. We believe that there should be more consistency in terms of GI reference across the ES, PS and associated documents.

We recommend that the local impact report incorporates the benefits of GI. For example, 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. The Essex GI Standards and Essex GI Strategy as well as the National GI Framework demonstrate best practice and should be considered to help deliver this.

General overall comment

The ECC GI Team welcomes the inclusion of a comprehensive GI Study (appendix H of Planning Statement) however, we believe that there is some inconsistency regarding the reference to GI and this study throughout the Environmental Statement, and associated documents. For example:

ES Chapter 7: Landscape and Visual only reference GI as part of the NCA profile description and recommendations by Natural England, 2024b paragraphs 7.4.9 (pg 31 and Para 7.4.16 page 33 "make the most of green infrastructure opportunities in development planning"

ES Chapter 8: Terrestrial Biodiversity only reference to GI is in relation to stakeholder engagement comments and input to the GI Study.

Similarly, to ES Chapter 13: Population and Human Health in relation to stakeholder engagement feedback and reference to few relevant strategies and plans undertaken by Thurrock and London. Despite this chapter mentioning in paragraph 13.5.16 The Project seeks to generate a positive legacy of green infrastructure on page 128

ES Chapter 16: Cumulative Effects Assessment. Only reference to GI is in relation to residential development and potential impact on human health – resulting in positive outcome from GI Opportunities, but is out of scope for Essex – relates to just new developments that are not in Essex. Pages 103, 144 (16.5.56) and 164

We believe that there should be more consistency in terms of GI reference across the ES and the PS and associated documents.

Comments regarding specific documents

Document Name: Draft Development Consent Order

Paragraph	GI Comments
Page 31-31 of 388 (30-31) Para 2.3 & 2.4	The draft DCO mentions the removal of hedgerow and trees and trees subject to TPO. It also states that it will undertake no unnecessary damage to any tree, shrub or hedgerow and must pay compensation for any loss or damage. However, the DCO should also mention the measures to protect existing hedgerows, trees and other vegetation and replacing any loss in line with the recommendations of the Environmental Statement, including any compensation being delivered within the order. Therefore, the Local Impact Report should consider the protection of existing hedgerow, trees, and other GI assets. Paragraph E.6.27 states "*Project-wide mitigation at construction and operational phases will assist in controlling construction activities and integrating the Project into the Green Belt where possible, while minimising harm to the Green Belt and 'other harm'*." As above, we recommend that there are measures to ensure green belt is sufficiently protected.

Planning Statement Green Belt Appendix E, paragraph E.6.27	
Page 364 of 388 (363) Para 103 4 & 5	It is welcomed that the DCO that the undertaking must, in accordance with its duties, take such action as necessary to prevent or mitigate any materially new or materially different environmental effects that exceed those anticipated in any environmental document. In that the undertaker must consult and seek agreement with the PLA on the necessary measures. Or for the PLA to notify the undertaker if they notice the change in effect.

Document Name: Environmental Statement

Paragraph	GI Comments
Chapter 8: Terrestrial Biodiversity page 110 of 266 Para 8.5.46	Paragraph 8.5.46 mentions that the water voles will be relocated and reintroduced to the catchments that have been identified by the EWT. Which are the Rivers Colne and Blackwater. It is worth noting that the Rivers Colne and Blackwater are within the Essex Climate Action Commission's (ECAC) recommended Climate Focus Area (CFA), (please see Figure 1 for further details). 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 1: Map of ECACs Climate Focus Area

	 There is the opportunity for this relocation project to contribute to delivering biodiversity enhancement and net gain within the CFA area. Therefore, meeting towards the CFA Natural Green Infrastructure 30% by 2030 target and the wider Local Nature Recovery Network/Strategy.
Chapter 17: Summary Page 51 of 113 (48) and page 56-58 of 113 (53-55	The table refers to ancient woodlands on pages 48 and 55, as well as Codham Hall Woods LWS and ASNW on pages 53–54, in relation to Chapter 8 Terrestrial Biodiversity, and states that compensation measures are necessary due to habitat loss and degradation from nitrogen deposition (especially between Junctions 28 and 29 along M25), as well as the irreversible impact that construction and operation will have on the ancient woodlands. However, the column that outlines the key documents that will be used to secure these mitigation measures only makes reference to the Design Principles and REAC; it should also make reference to the Environmental Masterplan, Outline LEMP, and for construction, the Code of Construction Practice. It was not clear from this document that the CoPC also contains the REAC table.
Chapter 17: Summary Page 51 of 113 (48) and page 56-58 of 113 (53-55) 6.3 ES Appendix 2.2 Code of Construction – First Iteration of Environmental Management	It is noted that as part of the key mitigation, compensation, or/and enhancement from the impacts of the LTC (especially between Junctions 28 and 29), as summarised in the table of the ES Summary there will be landscape-scale habitat creation across eight sites north and south of the River Thames through the creation of approximately 240 ha of new wildlife-rich habitat. Additionally, an area of approximately 26 ha of compensatory woodland would be planted immediately north of Codham Hall Wood at Hole Farm. We welcome the proposal for an Environmental Clerk of Works as set out in the ES Summary and in 6.3 ES Appendix 2,3 REAC Ref Number LV003, to oversee the vegetation establishment for years 1 to 5. Vegetation that failed to establish would be replaced in the next available planting season and the detail should be presented in the OLEMP and LEMP. However, it is recommended a landscape ecological management and maintenance plan and work schedule should be for a minimum of 10 years, although through mandatory biodiversity net gain it will

Plan – 79 (83 of 120) LV003 Environmental Statement figure 2.4. Environmental Master Plan, section 14.	be expected for the habitat to be secured for at least 30 years via obligations/ conservation covenant. It is noted that Forest England and Thames Chase have been assigned the management and maintenance of Hole Farm according to the Environment Statement, which should be included in the OLEMP/LEMP. We would also highlight that the OLEMP/LEMP should include who is responsible for GI assets and the maintenance activities/frequencies. We would also expect details on how management company services for the maintenance of GI assets and green spaces shall be funded and managed for the lifetime of the development to be included. This is 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. This should be captured within the Local Impact Report.
6.3 ES Appendix 2.2 Code of Construction – First Iteration of Environmental Management Plan – 83-84, 79 and 104 (87 – 88, 83 and 108 of 120) LV028 to LV032 and LV001 TB001 – TB003	We welcome that the CoCP REAC table has been expanded to include the Natural England and Forestry Commission's recommendation as well as the mitigation measures mentioned in the Environmental statement, such as temporary fencing, dust suppression, and surface water treatment. The REAC in relation to reference to Landscape does not specifically address in detail how any nature-designated sites (such as LWS [i.e. Jackson Woods, Tylars, Foxburrow Woods], ANSW, etc.) adjacent to LTC and retained GI, such as trees, hedges, and vegetation, will be protected during construction. This is presumptively covered in the forthcoming Arboricultural Method Statement and tree protection plan for the protection measures prior to site clearance and under Terrestrial Biodiversity REAC reference TB001 – TB003. It is noted that planting will start either as soon as the construction phase is finished or during the earliest planting season. The GI components are ideally introduced in phase one of development, where possible to establish a landscape structure, or there is proof that significant GI is secured as early as possible in the delivery's initial phases to enable early establishment. Will the Arboricultural Method Statement and Tree Protection Plan be just for ancient woodlands, site specific or apply to the whole of the LTC? Will it include Hole Farm? For instance, REAC Ref number LV001 refers to trees and vegetation retention with the aim to reduce removal where possible in accordance with the LEMP and Environmental Masterplan, but no mention of measures how to protect retained trees.
6.3 ES Appendix 2.2 Code of Construction – First Iteration of Environmental Management	Welcome the move to use biodegradable tree guards to reduce the use of single use plastic.

Plan – 80 (84 of 120) LV004	
Environmental Statement figure 2.4. Environmental Master Plan, section 14.	We also raise that there is 'No design information' for sheets 7-10 on the Environmental Master Plan, we wish to query why this is, as the area still falls within the DCO. The Local Impact Report should consider this as it is not possible to reach a full judgement on the planting, and protection measures in place for these areas.

Document Name: Planning Statement

Paragraph	GI Comments
4.3.18/19 PS – Improved pedestrian, cycle, bridle networks	We note that the planning statement states the project will provide upgraded active transport connections. ECCs GI team supports the provision and protection of active travel and Public Right of Way (PRoW) networks. ECCs GI team recommends that the LTC Project supports and encourages opportunities to enhance and establish green infrastructure along sustainable transport and PRoW networks to both encourage active travel and create a green corridor for wildlife. This could include, but not be limited to, the integration of nature focused SuDS; native hedgerows, tree and shrub planting; incidental 'play on the way' features / trails; informal sport (outdoor gym/fitness trails); and areas for seating to stop and rest.
Planning statement table 4.2. "The Project would leave a positive legacy of Green Infrastructure and improved biodiversity" Biodiversity Metric Calculation ES Appendix	The ECC GI team supports the ambition to provide best practice GI. We recommend that the project strives to achieve a BNG of above 10%. The current forecast change in biodiversity units for the overall Project is: a. 7% for area-based habitat units b. -11% for hedgerow units; and c. -7% for river units. The BNG calculation for the Project North (Biodiversity Metric Calculation, 6.2.) suggests there would be just a 9% Gain in Area BNG, with net losses in Hedgerows (-18%) and Watercourses (-7%). It is difficult to comment solely on the BNG Calculation for Essex because it covers the whole of the project north. We note the limitations of the metric, and we note that there are number of compensation measures which will have long term benefits but can't be included in the metric calculation, such as Hole Farm. We also note the assessment is based on the preliminary project design (paragraph 3.3.1, pg 9) and it is recognised that there will be further opportunities for biodiversity enhancement (paragraph 7.1.9, pg 38). However, considering that the scheme will incur a net loss in hedgerows and watercourse, and just a 7% in area based habitat, the ECC GI team recommends that the project aims for a more ambitious

	target (10%+) where opportunities arise for the LTC project to further explore biodiversity enhancement as the development and final design takes place. Metric 3.1. was used but paragraph 3.2.3 page 13 makes note that there is a new version of the metric that has been published (4.0). Will the LTC look to reapply metric calculations using the new metric? We expect consistency in metric calculations moving forward, so if there isn't a recalculation with Metric 4.0, 3.1. should continue to be used.
Table 7.1 and 7.2. 7.2 Planning Statement Appendix H Green Infrastructure Study	Tables 7.1 and 7.2 (within section 7.12 Local Policy context) outline the development plans and policy taken into consideration by the LTC. Whilst not explicitly policy documents The ECC GI team recommends that the Essex Green Infrastructure Standards, and Essex Green Infrastructure Strategy should be utilised. Using these documents can help incorporate best practice Green Infrastructure and help meet the statement "the project will leave a positive legacy of green infrastructure" (table 4.2. PS). We also note that Brentwood has an Infrastructure Development Plan (IDP) and chapter 14 of this relates to Green Infrastructure. We note the references at the end of the GI Study refers to the Thurrock Green and Blue study, as above, we recommend that the Essex GI Strategy and Standards are considered.
Planning Statement Green Belt Appendix E, paragraph E.3.19	The ECC GI team supports the use of these measures to compensate and offset the impact to the green belt as set out in the ES and PS documents. We recommend agreements and plans are in place and submitted to ensure that there are adequate measures and GI assets are established. It is positive to see Brentwood Borough Councils Green Belt Policy's (paragraph E.9.19) are referred to.

<u>Further GI comments</u>

The following is based on the headlines recommended for Local Impact Report from the guidance by the planning inspectorate in relation to GI in Essex (please delete if not relevant)

Local Impact Report – things to consider:

- Site Description and surroundings/location

The ECC GI team has assessed the planning documents for the Lower Thames Crossing in relation to the areas within Brentwood District Council, as well as the anticipated impacts on Basildon, Chelmsford, and other districts and boroughs within Essex.

- Details of the proposal

The GI Team notes that as part of the scheme, National Highways have acquired Hole Farm, in Brentwood – this site will be used for Ancient Woodland Compensation Planting. While it is positive

to see a large area of land being utilised for forestry however, ECCs GI team expects ancient woodland to be protected. Developments that infringe upon these locations are expected to be designed to avoid detrimental direct and indirect impacts with the appropriate landscape buffers applied. This includes, risk of water-borne pollution, air pollution, dust deposit, change to local hydrology, increased recreational pressure and informal access points and soil compaction.

It is positive to see compensation planting for unavoidable damage to ancient woodland. We expect to see adequate long-term management and stewardship of sites such as Hole Farm. Details should include who is responsible for GI assets (including any surface water drainage system) and the maintenance activities/frequencies.

We would also expect details on how management company services for the maintenance of GI assets and green spaces shall be funded and managed for the lifetime of the development. This is vital to ensure the establishment of GI assets, and therefore, the full benefits can be realised.

- Relevant planning history

Ensure that GI connectivity and larger scale assets are thought about in conjunction with other planning applications and designations within the Brentwood borough council local plan.

- Relevant development plan policies, SPD guidance, approved masterplans

Brentwood County Council has a Green Infrastructure Strategy – this should be consulted.

Essex Green Infrastructure Standards and Essex Green Infrastructure Strategy - we expect that green infrastructure in Essex is designed with the standards principles and strategy, this will result in better, more joined up spaces and places for people, their communities and for nature.

- Local transport patterns and issues

ECCs GI team supports the provision and protection of active travel and Public Right of Way (PRoW) networks. ECCs GI team recommends that the Local Impact Report supports and encourages opportunities to enhance and establish green infrastructure along sustainable transport and PRoW networks to both encourage active travel and create a green corridor for wildlife. This could include, but not be limited to, the integration of nature focused SuDS; native hedgerows, tree and shrub planting; incidental 'play on the way' features / trails; informal sport (outdoor gym/fitness trails); and areas for seating to stop and rest.

- Site and area constraints

We would expect measures in place to protect nearby GI assets that fall outside/on the border of the DCO, this could be incorporated within the LEMP when it is produced at a later date (see our comments regarding this above).

- Socio-economic and community matters

Green Infrastructure can have multifunctional benefits – for example, good GI can improve health and well-being, by increasing access to nature and green space. It can also be used as part of active travel lanes. GI can help to alleviate flood risk and also contribute towards climate mitigation and adaptation measures. It is therefore recommended that GI is considered wherever possible in order to deliver benefits for socio-economic and community matters.

12. CLIMATE CHANGE

The Essex Climate Action Commission 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.

The report notes that 'congestion on Essex roads is an environmental disaster and economically costing local businesses billions', and the M25 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.

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.

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.

13. FLOODING AND SURFACE WATER MANAGEMENT

Local Policy

ECC as Lead Local Flood Authority (LLFA) is responsible for managing risk of flooding from Surface water, ground water and from ordinary watercourses.

ECC as LLFA is a statutory consultee on all major developments regarding surface water drainage design. ECC supports major planning applications to meet the increasing demand for housing and infrastructure and 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.

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).

The proposed A122 Lower Thames Crossing works consists of greenfield and brownfield catchments which require appropriate flood mitigation and surface runoff management throughout the development site. The management of surface runoff from these sites should mitigate the increased risk of flooding.

ECC 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 Lower Thames Crossing Scheme. Essex County Council as Lead Local Flood Authority for the county of Essex supports the proposed scheme.

Local Issue: Flood Risk

The Flood Risk Assessment (FRA) has been produced to support the Lower Thames Crossing development. Field survey, desk-based assessments and modelling have been undertaken to assess the risk.

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 the construction and operational phases of the proposed scheme as well.

ECC as the 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.

Surface water Drainage strategy proposal

NH as developed the Surface Water Drainage Strategy to support the NSIP application for the A122 Lower Thames Crossing scheme, in accordance with the requirements of the National Networks National Policy Statement (NNNPS) (Department for Transport, 2014). Surface water drainage system (SuDS) is developed in accordance with local standards (SuDS Design Guide) and national planning policies (NPPF) and industrial best practice guidance (CIRIA SuDS Manual C753) to minimize the impact

from the proposed scheme to quantity and quality of the surface water runoff and to maximise the amenity and biodiversity opportunities along the length of the proposed scheme where possible.

The scheme is providing storage for the 1 in 100 +Climate Change to manage off site flooding but the pipe network within the boundaries of the highway network will be designed to DMRB standards so will be subject to higher flood risk during extreme events.

Pollution Control and Water Quality

Attenuation ponds, basins provide an effective pollution control measure for highway runoff, providing for settlement of suspended sediments and treatment of dissolved metals. The addition of lined sediments forebays are proposed as an addition to basins, these will provide additional treatment and betterment to the existing basins.

The addition of a water flow control device will provide extra security for the watercourse in the event of a spillage.

Surface water drainage strategy, in regard to the Lower Thames Crossing scheme, is utilising existing sustainable drainage systems within Essex, such as attenuation basins, ponds and ditches. The Lead Local Flood Authority (LLFA) is satisfied with the SuDS measures proposed to manage the runoff quantities from the M25 within the County of Essex boundaries.

14. ECONOMY, JOBS AND SKILLS

To assess the impact of this proposed DCO on socio economics, jobs and skills the following Local policy and evidence base has been used in compiling this response:

- ECC (2021) *Everyone's Essex*
- ECC (2020) *Developers' Guide to Infrastructure Contributions*
- ECC (2022) *Essex Sector Development Strategy*
- ECC (2022) *Levelling Up Essex: An Essex White Paper*
- ECC/Mace (2020) Construction Growth in Essex 2020-2040
- ECC/Mace (2022) *Green Skills Infrastructure Review for Essex*
- ECC *Skills and Employment Principles for Major Projects and Developments*
- ECC (2022) Essex Skills Plan
- Local Skills Improvement Plan

https://www.essexchambers.co.uk/local_skills_improvement_plan_lsip.htm

Everyone's Essex is Essex County Council's (ECC) plan for levelling up Essex. It sets out 20 commitments under four headings:

- the economy
- the environment
- children and families
- promoting health, care and wellbeing

The Essex Developers' Guide to Infrastructure Contributions is a well-established vehicle for setting out planning obligation requirements relating to the work of Essex County Council. It contains specific requirements around the preparation of Employment and Skills plans/strategies to ensure residents of the County benefit from opportunities presented by development projects.

Local issues

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 ECC's wider ambitions – from levelling up to net zero – as set out in Everyone's Essex.

Jobs and skills

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 ECC 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.

The applicant should cooperate and work with relevant partners, including other major projects across the county and use the skills, employment and education strategy 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, apprenticeships, 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 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 skills, employment and education strategy to look at how they can maximise these opportunities and maximise the Social Value impact of the project locally.

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.

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 skills education and employment strategy. Chapter 13 of the Environmental Statement estimates that the scheme could deliver more than 22,000 jobs in the areas to the south and north of the River Thames, with 45% of employees to be from within 20 miles of the Project route, including within the host local authorities of Gravesham, Medway, Dartford, Thurrock, Havering and Brentwood.

Chapter 13 of the environmental statement estimates that the required construction workforce for the project would peak at 4,514 people and that 35% of the workforce would be drawn from the existing labour market. The environmental statement also suggests that the project would provide a significant number of new employment opportunities over the course of the construction period, both in terms of direct and indirect employment. Whilst these jobs are temporary, the skills attained would be transferrable to other infrastructure projects, and as such it is accepted that there would be a positive economic impact in the local area during the construction phase. It is therefore accepted that there would be a positive multiplier effect to the local area, generated by indirect and induced effects of the construction activity.

<u>Access for residents and businesses during construction phase</u>

During the construction phase, potential negative impacts of the project include disruption to:

- Residents accessing workplaces / businesses accessing workforce
- Consumers accessing businesses, such as those in the retail and leisure sector, and public services that support the local economy
- Businesses receiving / delivering goods and services

Lower Thames Crossing – 6.1 Environmental Statement Chapter 13 – Population and Human Health suggests that access to jobs, services and community infrastructure may be impacted as a result of increased journey times during construction. However, this would be managed through measures set

out in a Traffic Management Plan (TMP) and appropriate communication with local residents and affected communities. Increased journey times for buses using the local road network may have an impact in relation to accessing services and employment for these groups, although it is noted that these impacts would be temporary in nature (although long-term, i.e. longer than two years). The majority of increases in journey time would be below six minutes in duration. The applicant should 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

Upon completion of the project, potential positive impacts of the project include benefits for:

- Residents accessing workplaces / businesses accessing workforce
- Consumers accessing businesses, such as those in the retail and leisure sector, and public services that support the local economy
- Businesses receiving / delivering goods and services

Once construction is complete the new roads and tunnel could improve access for people to employment opportunities throughout the county and south of the River Thames. 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 Essex may benefit from improved access to workers residing south of the river. There were 234,988 job postings across the south of Essex (including Brentwood, Basildon, Thurrock, Southend and Rochford) between May 2022 to May 2023. The new road and tunnel could mean greater access for employers in Essex to candidates that match the skills required for jobs advertised from south of the River Thames. 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 south of the river.

Adequacy of the application/DCO

The structure and methodology of the Environmental Statement (ES) is generally accepted, with the scheme achieving socio economic benefits during construction and post construction. Essex County Council wish to minimise short term negative impacts during the construction phase of development.

The cumulative impact of significant construction/infrastructure projects in the county requires consideration. This includes 11 NSIPs (including major highways works at the consented and currently being implemented M25/A12 junction, as well as changes to the A12 between Chelmsford and Marks Tey), 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.

Chapter 13 of the Environmental Statement notes that the scheme is committed to creating a skills legacy for the project through the skills, employment and education strategy. The number of people that would experience beneficial changes as a result of the creation of new employment and training opportunities is high. Legacy activities include the development of a significant education programme, aligned to the needs of local education providers and delivering science, technology, engineering and maths (STEM) workshops and activities in schools to educate and inspire future careers in construction, including future skills needs and carbon/sustainability education. The structure and

strategic priorities of the published skills, employment and education strategy - which will be secured via S106 agreement (Application Document 7.3) are accepted. Although ECC would welcome additional assurances relating to data to support the strategic priorities of the strategy. ECC would also welcome further assurances on how the strategy will be monitored and the process for reporting on the progress against the objectives set within the strategy, consistent with the Construction National Skills Academy KPIs established by CITB. ECC has produced a 'Skills and Employment Principles for Major Project and Developments' document, which outlines ECC expectations of what a Local Employment and Skills Plan/Strategy should cover. The requirement for the skills, employment and education strategy is justified in the Essex Developers' Guide to Planning Contributions document.