Lower Thames Crossing

The Examining Authority's Written Questions and Requests for Information (ExQ1) – Thurrock Council Responses

19 September 2023

Thurrock Council

thurrock.gov.uk

The Planning Inspectorate

Application by National Highways for the Lower Thames Crossing
The Examining Authority's written questions and requests for information (ExQ1)
Issued on 15 August 2023

The following table sets out the Examining Authority's (ExA's) first written questions and requests for information - **ExQ1**. If necessary, the examination timetable enables the ExA to issue further rounds of written questions in due course. If this is done, the further round of questions will be referred to as ExQ (number), with the number rising in sequence from 2.

The ExA has screened issues and questions into two parallel streams: those included in written questions and those for oral examination. Whilst there may be a small amount of overlap between the issues addressed by these two methods, in general terms if an issue is raised here then it will not be a primary issue for oral examination in the September hearings. That is why the time allowed for responses to these questions extends beyond the period in which the next round of hearings will be held (4 to 15 September 2023).

Questions are set out using an issues-based framework derived from the Initial Assessment of Principal Issues (IAPI) provided as Annex B to the Rule 6 letter of 25 April 2023. Questions have been added to the framework of issues set out there as they have arisen from representations and to address the assessment of the application against relevant policies. There are also some general questions which range across multiple issues, and questions which address issues that have arisen since the IAPI was concluded. Not all issues give rise to questions in this round. Where no questions are set out, this is because they have been identified as issues for oral examination, issues to be addressed in later questions (if required) or issues where the ExA is not seeking further information at this stage.

Column 2 of the table indicates which Interested Parties (IPs) and other persons each question is directed to. The ExA would be grateful if all persons named could answer all questions directed to them, providing a substantive response, or indicating that the question is not relevant to them for a reason. This does not prevent an answer being provided to a question by a person to whom it is not directed, should the question be relevant to their interests.

Each question has a unique reference number which starts with 1 (indicating that it is from ExQ1) and then has an issue number and a question number. For example, the first question on project definition issues is identified as Q(1)1.1.1. When you are answering a question, please start your answer by quoting the unique reference number.

If you are responding to a small number of questions, answers using the 'make a submission' portal or by email will suffice. If you are answering a larger number of questions, it will assist the ExA if you use a table based on this one to set out your responses. An editable version of this table in Microsoft Word is available on request from the case team: please include 'LTC Request for ExQ1 in Word' in the subject line of your email and contact: lowerthamescrossing@planninginspectorate.gov.uk

Responses are due by Deadline 4**:** Tuesday 19 September 2023

Q4.3.Abbreviations used:

PA2008	The Planning Act 2008
Art	Article
ALA 1981	Acquisition of Land Act 1981
BoR	Book of Reference
CA	Compulsory Acquisition
ComMA	Combined Modelling and Appraisal Report
CPO	Compulsory purchase order
DPWLG	DP World London Gateway
dDCO	Draft DCO
EM	Explanatory Memorandum
ES	Environmental Statement
ExA	Examining Authority
LIR	Local Impact Report
LPA	Local planning authority
MP	Model Provision (in the MP Order)
MP Order	The Infrastructure Planning (Model Provisions) Order 2009
NMU	Non-Motorised Users
NPS	National Policy Statement
NPSNN	National Policy Statement National Networks
NRTP	National Road Traffic Projections
NSIP	Nationally Significant Infrastructure Project
NTEM	National Trip End Model
PoTLL	Port of Tilbury London Limited
R	Requirement
SI	Statutory Instrument
SoS	Secretary of State
TAG	Transport Assessment Guidance
TMPfC	Outline Traffic Management Plan for Construction
TP	Temporary Possession
WCH	Walkers, Cyclists and Horse riders
WNIMMP	Wider Network Impacts Management and Monitoring Plan

The Examination Library

References in these questions set out in square brackets (eg [APP-001]) are to documents catalogued in the Examination Library. The Examination Library can be obtained from the following link:

TR010032-001818-C - LTC Examination Library.pdf (planninginspectorate.gov.uk)

The library is updated as the examination progresses.

Citation of Questions

Questions in this table should be cited as follows:

Question reference: issue reference: question number, eg ExQ(1) 1.1.1 – refers to question 1 in this table.

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ExQ1	Question to:	Question:
1. Project definition		
Questions relating to project definition were raised orally at Issue Specific Hearing 1 (ISH1) on 23 June 2023. The ExA has no further questions on this issue at the present time.		
2. Climate change and carbon emissions		
2.0 Methodology		
2.1 Localised Assessment		
Q2.2.1	Thurrock Council	**Localised Climate and Carbon Assessments** In its Deadline 1 submission at Appendix K [REP1-292], Thurrock Council appears to be calling for a localised assessment of climate and carbon. Can the Council explain the national policy and scientific basis for such an assessment? Please refer to any other made DCO's where such an approach has been taken.

Thurrock Council Response

Overview

There is a clear case for a requirement on the Applicant to undertake and submit an assessment of the local climate and carbon impacts based on national policy and DCO precedents. The response to Q2.2.1 set out below explains the national policy and the scientific basis for this requirement, as requested by the ExA. The Council sets out the rationale for an Applicant requirement to identify a wider range of local impacts in the assessment, in particular with regards to traffic, energy supply and waste materials. A summary of the policy context is provided along with the scientific basis that should be applied for localised assessment. This response then provides considers how local carbon significance has been assessed in other NSIP schemes to illustrate the deficiency in the Applicant's approach.

The Council is concerned that the Applicant has not assessed carbon adequately by excluding some local important sources, such as local traffic impacts, from the scope of the assessment. It has also made statements about the lack of significance of the carbon impacts that it has calculated. Crucially, the Applicant attempt to re-define 'significance' is not consistent with how significance has been assessed in other schemes where comparable, or even lower, carbon impacts are reported as being significant.

ExQ1	Question to:	Question:

Full and transparent access to the Applicant's carbon quantification model is required to ensure that the Applicant has put forward a reasonable assessment of carbon. To date the Applicant has refused to provide this data to enable full scrutiny and has instead provided output tables in a pdf format. Thurrock Council is unable to apply adequate scrutiny to this. This has prevented local authorities and other interested parties from its ability to interrogate the carbon modelling as to do so would require the development of a duplicate model at substantial cost.

This is a matter of procedural fairness. Unless Thurrock Council can interrogate the carbon modelling and assumptions that leads to the Applicant asserting that LTC's carbon costs are as asserted, then Thurrock Council is substantially procedurally prejudiced since the ExA will be invited to determine that the costs are as the Applicant asserts without giving Thurrock Council any effective opportunity to challenge that quantification.

If Thurrock Council were able to scrutinise the assumptions made, it may expose there in fact being a significantly higher worst-case scenario than that presented to the ExA. If this were the case, the carbon costs (which are already one of the largest costs) in the LTC economic case would increase significantly. The Applicant has made bold public claims about the use of lower carbon construction techniques as a 'Pathfinder' project, yet the assumptions are not clear in its submission. There is no securing mechanism for low carbon construction techniques in the DCO. The carbon quantification for construction, and also for its operation, should therefore show a worst-case scenario based on what is allowable in accordance with the DCO. For example, Thurrock Council considers that the Applicant may well have assumed the use of hydrogen powered vehicles but at present is not able to verify this.

If the Applicant has incorrectly calculated the local carbon impact, the duty will on Thurrock Council to deliver a significantly more challenging carbon reduction target than that indicated by the Applicant in its submission (if there was an assessment of localised carbon impact as is required). The burden is on the local authority to deliver transport decarbonisation necessary to achieve net zero.

Any impact from an NSIP on infrastructure within a local authority's geography will affect its ability to deliver the obligations for carbon reduction as set by national policy. The ExA in its Report of Findings and Conclusions and Recommendation to the Secretary of State for Transport clearly states that the Applicant, acting in the interests of government, has a duty not to compromise the ability of a local government authority to fulfil its duty (para 6.4.20). The Applicant is currently compromising the ability of the Council to fulfil its duty to achieve net zero. In the absence of localised assessment provided by the Applicant in a clear and transparent manner available for scrutiny it is not possible for the ExA to be satisfied that the Council will not be compromised in its ability to fulfil its duty to deliver net zero. It should be noted that the carbon impacts of the LTC scheme are highly significant in relation to the net zero requirements for Thurrock as a relatively small unitary authority.

Accordingly, Thurrock Council must have transparent access to the carbon quantification model to enable it to understand whether it is able to determine whether this scheme might materially impact on Thurrock's ability to deliver on its legal requirements to deliver net zero in accordance with Government's clear policy expectation that Thurrock Council will do so.

ExQ1	Question to:	Question:
Policy Context A review of relevant national policy is set out below. National policy dictates a range of activities and actions on local authorities to deliver net zero, with over 80% of national emissions influenced by local authority decision making, funding and delivery. Any project that impacts a local authority's ability to deliver these obligations will impact the Government's ability to achieve the legally binding net zero by 2050. Carbon impacts from LTC are of such a magnitude that the scheme is likely to seriously impact Thurrock Council's ability to deliver net zero. ***National Policy Requirements for Localised Assessment*** The national policy for climate and carbon is set in the UK Net Zero Strategy and updated in Powering Up Britain, the Net Zero Growth Plan, March 2023. In addition, there are a number of sector specific national policies across finance, transport, industry and energy. These national policies require: • A place-based approach to delivering net zero. • Local authorities to deliver the National net zero goals, through their legal powers, assets, access to targeted funding, local knowledge and relationship with stakeholders. • The Government's Carbon Budget Delivery Plan, March 2023, sets out a broad range of priorities for local authorities to deliver the decarbonisation pathways set by the Carbon Budget Orders. The clear expectation of Government, on the basis of the above policy framework is for local authorities, such as Thurrock Council, to enable the delivery of infrastructure and also deliver infrastructure to achieve net zero. These national policies require local authorities to enable the delivery of infrastructure and also deliver infrastructure to achieve net zero. Any impact from an NSIP on resources, infrastructure and land within the local authority's geography, will affect its ability to deliver the obligations set by national policy. Impacts that impede a local authority's ability to deliver on its national net zero obligations, for example by increasing emissions from local traffic, are significant in the context of meeting national carbon budgets. LTC will transform patterns of movement across a region, promoting car dependency and locking in carbon intensive lifestyles for decades, this is essentially the cornerstone of the business case for LTC which is based on facilitating and enabling a very substantial increase in traffic. Furthermore, the proposed use of zero emission plant during construction, and the increased demand charging EVs from the increased traffic will have implications for the local energy network that have not been considered. There are also greenhouse has implications arising from waste materials from the scheme. It is therefore crucial for the carbon impacts to be assessed in a transparent and open manner so that the local impact can be properly understood and mitigated as appropriate. However, the LTC Environmental Statement, Chapter 15-Climate (APP-153) has not addressed potential local		

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impacts of LTC, as defined within the EIA directive, on the Council's ability to meet their national net zero policy requirements. To fulfil this requirement to a satisfactory standard the Applicant is required to, at a minimum, assess the following:

- Impact on local energy demand and supply networks arising from energy consumption during both construction and operation;
- Impact of the forecast increased car trips and ownership on Thurrock's ability to deliver transport decarbonisation; and
- Additional waste generation rates on waste related GHG emissions in the district.

These are examples of local impacts that should be included in a localised assessment of the LTC scheme.

Scientific Requirements for Localised Assessment

The scientific basis for localised assessment follows from the requirements set out in the Paris Agreement for greenhouse gas emission inventory development to be consistent, complete, comparable and accurate. UNFCC emissions accountability is organised on a territorial basis. These principles are further demonstrated by the UK National Atmospheric Emission Inventory (NAEI), which is the single source of emissions reporting that is used to retrospectively monitor the UK's transition against the national emission budgets. The NAEI approach applies a bottom-up methodology to establish sectoral emissions across an extensive range of sectors: energy, business, transport, public, residential, agriculture, industrial processes; land use, land use change and forestry; and waste management.

However, the Applicant has erroneously appraised the total potential emissions from only three of the sector emission segments: construction materials and fossil fuel use in construction, road traffic and energy. In its approach the Applicant has therefore attempted to compare emission totals arrived at through very a different method. This means that the scope of emissions included in the Applicant's carbon calculation for the scheme does not include a number of sectors that are included (and considered necessary) in the national emission budget as calculated by NAEI. The Applicant has in effect created its own methodology and in doing so this restricts the ability to scrutinise the assessment and to ensure that it is robust and appropriate.

There is a clear and recognised scientific basis for localised assessment, as demonstrated by the methodology deployed by NAEI to calculate the national emissions budget. The absence of an assessment following this approach means that the information provided by the Applicant is not comparable with national budgets, complete or accurate. The Applicants submission does not meet the test of transparency set within the Paris Agreement which means that the UK, as a country that has ratified the agreement, has committed to follow a single, universal transparency process (see Introduction to Transparency | UNFCCC).

Examples of DCOs that have undertaken localised and sectoral assessments

Seven recent DCO's from 2022 onwards are considered here, noting however that this is review is indicative and not exhaustive and there are likely to additional precedents in other DCOs. The Council's review found that all of the DCOs did undertake the local assessment of carbon and

ExQ1	Question to:	Question:

climate that is missing from the Applicants submission. All of these DCOs have assessed the significance of GHG emissions in the context of sectoral and/or local emission emissions budgets.

The key findings are:

- All transparently show approaches to setting local and/or sectoral budgets and targets to determine significance
- DCO projects have been quantitatively and qualitatively appraised to determine local government ability to achieve their net zero obligations.
- The Hinckley National Rail Freight Interchange, PINS Reference TR050007, clearly shows that local road emissions scenarios can be tested to set the context of emission impact.
- For projects reporting GHG emission benefits (for example, renewable energy schemes), impacts (i.e. overall CO_2e savings) of between 500,000 to 5,973,729 $tCO_2(e)$ were determined significant. On this basis, it can reasonably be assumed that GHG emission disbenefits with this range would also be determined significant.
- Projects reporting GHG emission benefits used sectoral budgets to establish significance.

This evidence shows a range of good practice, established across the transport, energy, waste and water sectors, in contextualising local and sectoral emissions to support the assessment of national significance more effectively, providing examples of the approach required for LTC. The assessment of 'significance' should treat positive and negative emission impacts in the same way; and should consider different sectors equally. The review found examples of carbon impacts comparable with, and in some cases substantially smaller than, those of LTC; while being considered significant in their environmental statements. Applying the same rationale, the emissions from LTC would be deemed to be significant regardless of local, sectoral or national impact.

National Policy Requirements

This section reviews national policies that define the requirements for assessment of carbon impacts in infrastructure schemes.

The current national policy for climate and carbon is set in the UK Net Zero Strategy and updated in Powering Up Britain, the Net Zero Growth Plan, March 2023.

The Government's Net Zero Strategy 2021 Chapter 4 Local Climate Action defines the importance of the role of local authorities in delivering the National net zero commitments, with over 80% of the national carbon budget influence by local decision makers.

The Net Zero Strategy (page 261) states:

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'1. Devolved and local government play an essential role in meeting national net zero ambitions. Across the UK many places have already made great strides towards our net zero future, having set their own targets and strategies for meeting local net zero goals. Taking a place-based approach to net zero is also vital to ensuring that the opportunities from the transition support the government's levelling up agenda.'

The national policy is clear that a **place-based approach** is vital. This sets the national policy requirement for the need for localised assessment of climate change and carbon. Without detailed assessment of local impacts, local authorities are unable to plan effectively to fulfil their obligations.

The Net Zero Strategy also states:

'2. The combination of devolved, local, and regional authorities' legal powers, assets, access to targeted funding, local knowledge, and relationships with stakeholders enables them to drive local progress towards net zero. Not only does local government drive action directly, but it also plays a key role in communicating with, and inspiring action by, local businesses, communities, and civil society. Of all UK emissions, 82% are within the scope of influence of local authorities.'

The national policy is clear that local authorities are vital in delivering the national net zero goals, through their legal powers, assets, access to targeted funding, local knowledge and relationship with stakeholders. This sets the national policy requirement for meaningful engagement and response to local needs. Under national policy it is the local authority who is responsible for the carbon emissions within its geographic boundaries, and not the applicant as operator of the SRN. Therefore, national infrastructure schemes that impact negatively on the ability of local authorities to deliver net zero locally will present a barrier to the delivery of national goals. The Applicant clearly has a duty not to compromise the ability of a local government authority to fulfil its duty to achieve net zero. The absence of a localised assessment in accordance with an acceptable methodological approach prevents the ability to determine this.A policy commitment made within UK Net Zero Strategy Chapter 4 is for Government to:

Set clearer expectations on how central and local government interact in the delivery of net zero.

This sets the policy requirement for Government investments to ensure there is localised assessment and interaction between projects and local authorities.

The Government's Carbon Budget Delivery Plan, March 2023, sets out a broad range of priorities for local authorities to deliver the decarbonisation pathways set by the Carbon Budget Orders.

This sets the specific Local Authority activities in national policy to deliver net zero pathways. Any secondary impact on these national policy pathways from NISPs would present a significant barrier to national Government meeting its net zero pathways.

Local transport plans (LTPs), set by the Transport Act 2000, are an existing statutory planning document that local transport authorities are required to produce which set out strategies for improving transport networks, propose projects for investment and plan how key objectives will be

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achieved. In the future, LTPs will need to set out how local areas will deliver quantifiable carbon reductions in transport, considering the different requirements of different areas. This was a commitment in the Transport Decarbonisation Plan, 2021 and re-stated in the 2023 Carbon Budget Delivery Plan. The department is updating its LTP guidance. Following a public consultation in 2023, this will be published along with additional standalone quantifiable carbon reductions (QCR) guidance.

When used as a part of the LTP development process, the QCR guidance will help local authorities make long term, evidence-based plans for local transport by considering the carbon impacts at a strategic planning stage.

Other relevant climate related policy documents that provide the context for Local Authorities' ability to decrease road, energy and waste emissions include the following:

a. Green Finance Strategy, March 2023
b. Transport decarbonisation plan, July 2021
c. Industrial decarbonisation strategy, March 2021
d. Hydrogen strategy, August 2021
e. Heat and Buildings Strategy, October 2021
f. Energy net zero white paper, December 2020

Across these national policies there are requirements on local authorities to both deliver and enable delivery of infrastructure to achieve net zero. Any impact from NSIPs on the resources, infrastructure and land within a local authority's geography will affect their ability to deliver the net zero obligations set by national policy. This would be considered significant in the context of meeting National net zero budgets.

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Schedule 4 Regulation 14(2) Information for inclusion in environmental statements paragraph 5 (page 37) states the requirements of the EIA to assess the likely significance of secondary affects.

'The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(a) and Directive 2009/147/EC(b)'.

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The Applicant has submitted an EIA that does not current conform to requirements as set out in policy. No impact assessment was undertaken by National Highways on how LTC would affect the Council's ability to enact their policy responsibilities set within in the aforementioned Government's national policy regime. As an example, there has been: a. No assessment of the impact on local energy demand and supply networks arising from energy consumption during both construction and operation; b. No assessment of the impact of the forecast increased car trips and ownership on Thurrock's ability to deliver transport decarbonisation plans; and c. No assessment of additional waste generation rates on waste related GHG emissions in the district. The LTC Environmental Statement, Chapter 15-Climate (APP-153) has not therefore fully addressed all potential secondary impacts of LTC, as defined within the EIA directive, on the Council's ability to meet national net zero policy requirements. Based on National Highways own methodology for assessing significance, as defined within Chapter 15 of the ES, any risk of LTC impacting national carbon budgets is defined as significant. Without this localised appraisal there remains unknown risks of LTC impacting the national carbon budgets. **Other evidence supporting the requirement for local assessment** In addition to the policy requirements set out above, Thurrock Council has identified further sources of evidence supporting the need for local assessment. The Climate Change Committees Report Local Authorities and the Sixth Carbon Budget December 2020 noted two key findings: *a. The UK Government and local authorities share a common goal to deliver Net Zero.* *b. The Sixth Carbon Budget can only be achieved if Government, regional agencies and local authorities work seamlessly together.* The Government's independent committee on climate change is clear on the need for localised engagement on delivering all aspects of the UK net zero strategy, not just project specific activities. In 2022, following the Spending Review, DfT sent a letter to the sub-national transport authorities (Report to Partnership Board – Transport for the South East, 13 June 2022, Update on the Major Road Network and Large Local Major Priority Schemes 2020-2025) asking them to reconsider the schemes they are promoting under the Major Road Network (MRN)/ Large Local Major (LLM) programme. Authorities were asked to consider whether schemes will meet either their original objectives, or the more recent objectives of Government transport investment. The letter notes that 'the importance of decarbonisation has increased since May 2019' and requests that consideration of whether the scheme is likely to make carbon worse should be a factor in their reconsideration. If greenhouse gas emissions from road schemes that are considerably smaller than LTC are now a material consideration in the potential rejection of those schemes, then far greater significance should be attached to the carbon impacts of LTC.		

ExQ1	Question to:	Question:

Scientific Basis for Localised Assessment of Climate and Carbon

The scientific basis for localised assessment follows from the requirements set out in the Paris Agreement for greenhouse gas emission inventory development to be consistent, complete, comparable and accurate. UNFCC emissions accountability is organised on a territorial basis. These principles are further demonstrated by the UK National Atmospheric Emission Inventory (NAEI), which is the single source of emissions reporting that is used to retrospectively monitor the UK's transition against the national emission budgets. The NAEI approach applies a bottom-up methodology to establishing sectoral emissions across an extensive range of sectors: energy, business, transport, public, residential, agriculture, industrial processes; land use, land use change and forestry and waste management.

However, LTC has appraised the total potential emissions from only three of the sector emission segments: construction materials and fossil fuel use in construction, road traffic and energy. The LTC approach has therefore attempted to compare emission totals arrived at through very different methods, such that the scope of emissions included in the local calculation for the scheme does not include a number of sectors that are included in the national emission budget as calculated by NAEI.

The Council therefore concludes that there is a scientific basis for localised assessment, as demonstrated by the NAEI, and that by not undertaking one the approach taken by NH is not comparable with national budgets, complete or accurate, and therefore does not meet the test of transparency set within the Paris Agreement.

Currently, National Highways takes the view that individual highway projects are not significant when compared with the national budget. The emissions of any single project, in isolation, in the local geography it resides will always be significantly smaller than the national emission total. On this basis all carbon emissions could be assumed to be insignificant when compared to the national budget, yet this is clearly not the case when considered in aggregate. Therefore:

- Scientifically this approach holds no integrity.
- In policy terms the national budget and the pathways for achieving this budget is simply the sum of millions of individual sources, each of which is very small compared to the sum of the parts, but meaningful in the context of the sector and geography. This is why the UK National Net Zero policy is broken down into emission pathways to net zero at the sector level and localised delivery. The Government Policy recognises that local emissions are significant.

The level of granularity afforded at the local emission inventory level allows a far better context for the significance of LTC's emissions to be appraised. By understanding the impact of projects on the national and local budgets, better decisions can be made as to whether projects are within the tolerances of the reductions required to meet our legally binding obligations to commit to a pathway to limit global warming to 1.5 degrees Celsius by 2050. This includes following the Planning Inspectorate's requirement to ensure that the cumulative impact of all NSIPs through its decision-making process are aligned to the net zero budget. It is the Council's view that the applicant should not, in accordance with Policy, be permitted to dismiss as not significant, the contribution of LTC as an individual scheme in isolation.

ExQ1	Question to:	Question:

Summary of the Eight DCO Projects Reviewed

The following provide a review by the Council of eight recent DCOs that have assessed the significance of GHG emissions in the context of their impacts on both sectoral (i.e. transport, energy production etc) and local emission emissions budgets. Although these were not all transport schemes, their approach to assessing significance is still relevant to LTC, because emissions from any sectoral source have the same effect at national level.

Project 1 – Hinckley National Rail Freight Interchange

Source reviewed: PINS Reference TR050007, *Environmental Statement Volume 1: Main Statement Chapter 18: Energy and Climate Change* Document reference 6.1.18, March 2023, prepared by BWB Consulting Ltd

It is noted that the methodology follows guidance set by IEMA by and assessed the sectoral breakdown of emissions between road, rail, energy and embodied carbon of construction material in relation to local (Leicestershire) and sectoral budgets in addition to assessing the effects of the project overall to the national carbon budget context.

Page 34 Paragraph 18.94: '*In considering the effects of HNRFI, local, regional and national carbon budgets and sectoral targets were considered. Given the scheme is recognised as 'Nationally Significant' and data sets are considered greater than local or regional and exceed the geographical limits of both Blaby District Council and Hinckley and Bosworth District Council, the effects of HNRFI were overall compared against the national context. Where feasible, results were compared against the respective sectoral performance and targets.'*

When setting the context of emissions against local and sectoral budgets the unmitigated emissions were found to have a minor and moderately adverse effect across each emission segment and recorded as significant impact in line with the EIA methodology.

The following extracts from the Environmental Statement demonstrate how significance was assessed against the local and sectoral targets for road and building material (embodied carbon) environmental impact.

Vehicular Emissions from Road

- Page 51 Paragraph 18.147: *'BEIS (2022) data sets demonstrate a trend in the reduction in vehicular carbon emissions from local, regional and national sources from the year 2005, with forecasts showing a continuation in reductions over the next years in keeping policy, targets and a betterment in technology. The data projects that combined, road networks in Blaby and Hinckley and Bosworth (259 ktCO2e) contributed approximately 32% of the total vehicular GHG emissions in Leicestershire (1,597 ktCO2e), 0.6% of vehicular GHG emissions in England and 0.5% of vehicular GHG emissions in the UK in 2020.*
- *Page 51 Paragraph 18.148 On average, vehicular emissions locally and at country level have declined since 2005 by approximately -0.1 and -0.3 $ktCO_2e$ per annum respectively.*
- Page 51 Paragraph 18.149: *'Using traffic data in the PRTM for the baseline scenario (2019), total vehicular CO2 emissions from the modelled transport network in Leicestershire (the Study Area), without the development, have been estimated to result in 10,923 ktCO2e a year as presented in Table 18.11. There is a difference of 32% between the projected BEIS data and the projected PRTM data for 2019, which may*

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accounted for by discrepancies in vehicular projections in both methods. Regardless, the forecast trajectory for future emissions is in keeping the respective sectoral Balanced Net Zero Pathway for the 6th Carbon Budget, as shown in Figure 18.529.'

Assessment of Significance Vehicle Emissions

- Page 65 Paragraph 18.214: *'The total regional traffic GHG emissions for the peak Construction Stage of HNRFI (2026) is 3 ktCO2e higher than the 'Do Nothing' scenario.'*
- Page 65 Paragraph 18.215: *'In order to estimate a worst-case scenario for total vehicular GHG emissions during the Construction Stage, this figure of 3 ktCO2e is multiplied by 10 (the maximum anticipated length of construction in years). This results in a maximum of 30 ktCO2e GHG emissions from traffic during the Construction Stage. Given the extent of the transport network modelled, and the fact that the amount of construction works that would be undertaken in 2026 is likely be much greater than many of the other nine years of the Construction Stage.'*
- Page 66 Paragraph 18.216: *'The RIBA Stage 1 Embodied Carbon Report (Appendix 18.2, document reference 6.2.18.2) includes an estimate of 0.5 ktCO2e associated with the transport of construction materials for the Rail Terminal. In order to ensure this figure is not double-counted, it has been taken from the figure of 30 ktCO2e in the paragraph above. This results in an overall figure of 29.5 ktCO2e for road traffic during the Construction Stage. '*
- Page 66 Paragraph 18.217: *'Unmitigated, and in comparison with **regional trends** (i.e. an average annual reduction of 0.3 ktCO2e), this net value would represent an increase that is considered a **major adverse effect** as it is locking in emissions and does not make a meaningful contribution to the region's trajectory. '*
- Page 66 Paragraph 18.218: *'By comparison, construction traffic would represent 0.03% of the **sectoral transport target** (87 million tonnes CO2e) under the representative target for the 4th carbon budget for 2026 (i.e. opening year of construction), or 0.1% of the respective 6th carbon budget (27 million tonnes CO2e) for 2036 (i.e. the completed year of development). On average, this would represent 0.05% of the respective sectoral targets for the 4th, 5th and 6th carbon budgets (average of 56 million tonnes CO_2e) which would be considered a **minor adverse effect**.'*

Assessment of significance of building materials (embodied carbon)

- Page 64 Paragraph 18.209: *'The greatest contribution to construction emissions is the embodied carbon within construction product. The RIBA Stage 1 Embodied Carbon Report (Appendix 18.2, document reference 6.2.18.2) provided an estimate of the amount of carbon that would be embodied within building materials for each of the twelve units for HNRFI, as well as for the Rail Terminal. The figures for the warehouse units were based on comparisons with historic embodied carbon data generated and collated for other similar units on Tritax Symmetry logistic parks across the UK. This was completed using Etool software and the Ecoinvent database. The results for the Rail Terminal has been based on the outline plans modelled using the RSSB Rail Carbon Tool (by Atkins and Faithful & Gould) which utilises the Institution of Civil Engineers (ICE) database and assumptions in the construction of the track and freight storage and handling areas. The results for the highway works was modelled using One Click LCA, using product specific Environmental Product Declarations (EPDs) and One Click's default ISO 14040 / 14044 compliant dataset. '*

ExQ1	Question to:	Question:

- Page 64 Paragraph 18.210 *'The carbon intensity of warehouse building is reducing with time as contractors find ways of delivering lower carbon developments. TSH is dedicated to providing best-in-class greener logistics buildings by going beyond complying with buildings regulations and designing to better materials consumption and embodied carbon. Due to the limited design information available at this stage of assessment, the embodied carbon associated with the warehouse designs has been estimated based on data collected from historic TSH built units. Based on the life-cycle analysis, estimations of embodied carbon (inclusive of energy) within the build for all twelve units would result in approximately 287.8 ktCO2e, whilst the amount of embodied carbon within the Rail Terminal amounts to 10.1 ktCO2e. Embodied carbon associated with the construction of the of the motorway slips, A47 link road and off site junction works, would result in a net increase of 13.7 ktCO2e. Total embodied carbon for construction of HNRFI would result in a total of 311.6 ktCO2e. '*

- Page 64 Paragraph 18.211: *'Compared against the most stringent benchmark (i.e. the 6th carbon budget), unmitigated, 311.6 ktCO2e would account for 0.03% of the UK's 6th Carbon Budget and 0.2% of the* ***sectoral targets set for non-residential buildings*** *across the 10 years of construction (145 million tonnes of CO2e) and is therefore considered to result in a* ***permanent moderate adverse effect****. In accordance with the methodology for determining significance, this is considered to be a* ***significant impact in EIA terms****. '*

Overall Assessment of Significance

The analysis assesses total construction and operational emissions (341,000 $tCO_2(e)$ and 256,630 $tCO_2(e)$ respectively) against the relevant carbon budget and identifies, in terms of an EIA, that these are a moderate adverse effect and therefore significant impact.

- Page 70 Paragraph 18.235: *'Prior to mitigation, construction and operation of HNFRI is estimated to give rise to approximately 584.0 ktCO2e for all sectors. This figure represents 0.06% of the UK's 6th Carbon Budget, more specifically, 0.34% of the specific budget for 2036 (170,000 ktCO2e), which is considered to result in a* ***permanent moderate adverse effect****. In accordance with the methodology for determining significance, this is considered to be a* ***significant impact*** *in EIA terms.'*

Approach applied to LTC

Following the approach taken within this assessment LTC's local, sectoral and overall emissions would be defined as a **significant impact**.

Project 2 Great Yarmouth Third River Crossing PINS ref. TR010043 Document 6.1: Environmental Statement Volume 1: Main Text

The methodology for assessing significance of impact of the measured carbon emissions of the road river crossing scheme included a localised assessment.

- *Page 729 Paragraph 13.5.17 IEMA guidance (Ref 13.3) and professional judgement, based on knowledge of similar schemes, has been used to assess the significance of effects relating to GHG emissions. This is done by comparing estimated GHG emissions arising from the Scheme (taking into account embedded mitigation) with the respective UK Carbon Budgets (presented in Table 13.6) which have been set by the UK government covering 2018 to 2032, and total road GHG emissions from Norfolk in 2016*

Approach if applied to LTC

Following the approach taken within this assessment LTC's local emissions would be contextualised against the local GHG emission totals.

ExQ1	Question to:	Question:

Project 3 – Medworth Energy from Waste Combined Heat and Power Facility

Source reviewed: PINS ref. EN010110 *Environmental Statement Chapter 14: Climate Document* Reference: Vol 6.2 Revision 1.0 June 2022

The Environmental Statement assesses the impact of the local road vehicle increase due to the new EfW facility, and balances this against a derived benefit from the decarbonisation of the waste sector (landfill avoidance) and energy sector (cleaner power). The methodology not only defines local impact in this regard but also sets the project in the context of local ability to achieve net zero, noting that Government's commitment to delivering net zero is beholden on local geographies to deliver it.

Page 14 14.9.51 *'At a local level, CCC has a vision to deliver net zero emissions for Cambridgeshire by 205028 while Norfolk County Council are aiming to work towards carbon neutrality by 2030 in the wider area. The assessment above demonstrates that over these timescales the Proposed Development can have a beneficial local effect in terms of achieving these carbon reduction targets, but this will depend on whether landfill would otherwise be used for residual waste management in these regions. The GHG emissions for the 'without Proposed Development' case have been calculated assuming waste is collected and transported to available landfill sites'.*

Approach if applied to LTC

The methodology presented within the Medworth report shows a qualitative approach take to determine how the DCO project impacts local ability to meet local government net zero obligations. This approach has not been considered by the LTC application.

Project 4 – Immingham Eastern Ro-Ro Terminal

Source reviewed: PINS reference TR030007 Environmental Statement: Volume 1 Chapter 19: Climate Change Document Reference 8.2.19. December 2022 AECOM

The approach taken for construction (embodied emissions) of the Ro-Ro Terminal was to compare PAS 2080 defined GHG emissions to the Green Construction Board's Net Zero Whole Life Road Map to provide appropriate context as outlined below.

- Page 8 Paragraph 19.3.12 *'To provide further context on the magnitude of IERRT project emissions construction emissions from the project have been compared to the Green Construction Board (GCB) Net Zero Whole Life Carbon Roadmap (2021). The GCB Net Zero Whole Life Carbon Roadmap for the Built Environment serves as a visual tool enabling stakeholders to understand the policies, actions and key decision points required to help the construction sector contribute towards the UK achieving a transition towards a net zero carbon economy by 2050.'*
- Page 88 Paragraph 19.3.13 *'Therefore, to contextualise the IERRT project's construction impact on the UK's transition towards a low carbon economy, the GCB's sectoral commercial carbon budget was used as a comparison against the IERRT project's material embodied carbon'.*
- Page 28 Paragraph 19.8.22 *'To put the magnitude of construction emissions into context embodied carbon from construction of the IERRT project has been compared to the Green Construction Board's Embodied Carbon Budget for Infrastructure. The IERRT project is predicted to account for approximately 1% of this budget (see Table 19.17 below). The IERRT project's impact on the Embodied Carbon for Infrastructure Budget and the UK's transition towards a net carbon economy is therefore negligible.'*

ExQ1	Question to:	Question:

Approach if applied to LTC

Following the approach taken within the Immingham assessment LTC's construction (embodied) emissions would be approximate 5% of the identified annual sectoral benchmarks for embodied carbon, which is significant in the overall context of construction sectoral emissions.

Project 5 – Gate Burton Energy Park

Source reviewed: *Environmental Statement, Volume 1, Chapter 6: Climate Change* Document Reference: EN010131/APP/3.1 January 2023, AECOM

The approach taken for assessing significance of greenhouse gas emission impacts included contextual appraisal against sectoral carbon budgets.

- Page 36 Paragraph 6.10.43 *'In line with IEMA guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance, the sectoral carbon budgets for electricity supply have also been used to contextualise emissions from the Scheme.'*

The assessment of significance states that 3.3 million tonnes of CO2(e) savings over its lifetime relating to the carbon intensity of energy is significant.

- Page 38 Paragraph 6.10.51 *'As the operational carbon intensity of the Scheme remains below the CCGT facility throughout its lifetime, it is considered that the overall GHG impact of the Scheme is **beneficial** and **significant**, as it will play a part in achieving the rate of transition required by nationally set policy commitments and supporting the trajectory towards net zero.'*

Approach if applied to LTC

The approach taken for Gate Burton Energy Park shows is it entirely possible to compare a DCO's GHG emissions to sectoral budgets to provide context to support benefit and disbenefits of the project. It is also important to note that 899,933 $tCO_2(e)$ (the total lifetime emissions from construction, operation and decommissioning) were determined as significant. Using the context of scale presented this would determine LTC's emissions as also significant.

Project 6 – Mallard Pass Solar Project

Document reviewed: PINS Ref: EN010127 *Environmental Statement Volume 1 Chapter 13: Climate Change* November 2022 Document Reference: EN010127/APP/6.1

The project has taken a sectoral approach to assessing the significance. The methodology included establishing energy sectoral targets through independent reference documents for comparison. The scale of benefit i.e. 1.9 $MtCO_2$ was considered a material change to the UK's emissions and therefore significant.

- Page 18 Paragraph 13.4.18 *'The CO2 emissions of the Proposed Development would therefore be displaced within approximately 10.5 years, and all savings beyond that would be a net benefit of the Proposed Development to reducing climate change, relative to the baseline. Over 40 years, for example, the saving is estimated at approximately 1.9 million tonnes of CO2. '*

ExQ1	Question to:	Question:

- Page 19 13.4.19 *'This is considered to be a material beneficial change to the UK's emissions of climate-changing GHG and is therefore a moderate beneficial effect that is significant.'*
- Page 21 13.8.4 *'In 2021, 13.6 % of total energy consumption came from renewable sources as detailed within Chapter 6 of DUKES 2021 [Ref 13-23]. The cumulative effect of the Proposed Development with other UK renewables generation is considered to be a fundamental change in the climate effects of UK energy supply, which is a major beneficial effect that is significant and will contribute to the UK's legally binding emission reduction targets.'*

Approach if applied to LTC

The approach taken by the Mallard Pass Solar Project shows is it entirely possible to compare a DCO's GHG emissions to sectoral targets (in this case energy supply) created through research to provide context to support benefit and disbenefits of the project. It is also important to note that the reported total savings of 1.9 $MtCO_2(e)$ were determined as significant as a mass of pollutant and a material change to UK's emissions. Using the context of scale presented this would determine LTC's emissions as significant and a material change to UK's emissions.

Project 7 – Cottam Solar Project

PINS reference: EN010133 Environmental Statement Chapter 7 Climate Change, January 2-23 Document reference: APP/C6.2.7 APFP Regulation 5(2), Bureau Veritas

The application notes that the 5,973,729 tCO_2e reduced by this project is major beneficial significant effect.

- Page 40 Paragraph 7.8.69 *'Compared to other types of electricity generation; the Scheme is expected to have a major beneficial significant effect on the climate.'*

Approach if applied to LTC

The approach for the Cottam Solar Project shows the scale of emission savings, i.e. 5,973,729 $tCO_2(e)$ is considered a significant as a volume of pollutant in relation to impact on the climate. This figure is almost 1 million tonnes lower than the estimate presented by LTC and this means that the LTC scheme would be assessed as having a **significant** effect.

Project 8 – Cambridge Waste Water Treatment Plant Relocation

PINS Reference WW01003 Environmental Statement Chapter 10: Carbon Application Document Reference 5.2.10

The project applied IEMA guidance directly to setting significant criteria. It notes that all emission contributes to climate change and therefore are significant.

- Page 31 4.2.12 *'Table 2-1 sets out the significance criteria adapted from the IEMA Guidance. The construction of the Proposed Development leads to carbon emissions which contribute to global climate change.'*

The document notes on page 43 and page 44 that the emission impacts of between 122900 to 32330 t CO_2 were all rated as significant, regardless of geographical, sectoral or national context.

ExQ1	Question to:	Question:
Approach if applied to LTC This scheme was another example of an application that reports total emissions that are significantly lower than LTC, but still considers them to be significant. **Concluding Points** National policy dictates a range of activities and actions on local authorities to deliver net zero, with over 80% of national emissions influenced by local authority decision making, funding and delivery. Thurrock Council requires for the Applicant to provide an assessment of local impacts of LTC that are not currently taken into account (e.g. on local traffic, energy supply and waste) in order to understand how they will impact the local authorities' ability to deliver these obligations and hence how they will impact the Government's ability to deliver its commitment to net zero by 2050. Without consideration of the full range of impacts the impact of LTC cannot be directly compared with national carbon budgets that are calculated using emissions from a much wider range of sources. The Council has presented substantial background information above to explain issues with the material the Applicant has submitted for Examination in relation to LTC.. To ensure that the climate and carbon impacts are adequately understood it is essential that the Applicant: a) Recognises that LTC will have a significant impact increasing carbon emissions b) Allows full and transparent scrutiny of all assumptions made in its carbon assessment and access to its modelling c) Presents its assessment in accordance with guidance and applies a compatible methodological approach d) Provides a localised assessment of carbon considering the full range of likely impacts		
2.2 Implications of Caselaw		
Q2.3.1	All IPs	**Carbon and Climate Considerations: R (oao) Boswell v Secretary of State for Transport** What are the implications of the recent Boswell v Secretary of State for Transport High Court Judgement [2023] EWHC 1710 (Admin) in relation to the treatment of carbon and climate in NSIP decision-making for the A47 Blofield to North Burlingham, A47 North Tuddenham to Easton and A47/A11 Thickthorn Junction

ExQ1	Question to:	Question:
		applications for the consideration of carbon and climate matters in the LTC Examination and decision?

Thurrock Council Response

Introduction

The judgement concerns the treatment of carbon and there are potential implications for the assessment of carbon impacts for LTC.

Scope of Scheme considered in Judgement

The judgement concerns schemes at three different locations on the A47, each of which was the subject of a separate decision by the Secretary of State, following separate Examinations led by three different Planning Inspectors. The judgement considers the case made by the Claimant that the SoS acted unlawfully in 'failing to meaningfully assess the combined emissions from the three road schemes'.

Conclusion of Judgement

The judgement concludes that the approach taken was lawful.

Implications for LTC

In contrast to the schemes considered by the Judgement, the LTC scheme is a single DCO application for substantial programme of works in its own right representing circa 44% of the initial RIS2 funding envelope. LTC contains 14km of new road, 3 highly complex junctions and a tunnel under the Thames.

The Council's objections to LTC are concerned with the impacts, including secondary impacts, of the single LTC scheme. The Council is not making the case for schemes outside the DCO application to be considered cumulatively with the LTC.

However, for the 'corridor' to be considered, the LTC scheme would need also to include consideration of necessary additional schemes (currently outside the proposed DCO), such as the major scheme at Bluebell Hill and potential improvements to the A13/A1089/Orsett Cock and Manorway junctions. However, the Council's objections to LTC are not based on an argument that emissions from other DCOs should be taken into account within the LTC examination. For this reason, the court judgement cannot is not of any particular relevance. It is therefore the Council's opinion that the judgement does not have implications for LTC.

ExQ1	Question to:	Question:
Summary **The Judgement concerns three separate schemes subject to a separate decision by the Secretary of State. The LTC is a single scheme for a substantial programme of works, which does not include schemes elsewhere in the 'corridor' approaching either end of the LTC scheme. The CJudgement** **does not have implications for LTC.**		
3.	**Consideration of alternatives**	
3.1	**EIA Regulations**	
Q3.1.1	All IPs	**EIA Regulations 2017: Consideration of Reasonable Alternatives** Regulation 11(2)(d) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) imposes a duty on the Applicant to include *'a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'* within the Environment Statement (ES). This obligation needs to be met through consideration of alternatives in terms of '*design, technology, location, size and scale'* (EIA Regulations Schedule 4). The Applicant has sought to meet this obligation in ES Chapter 3 [APP-141]. The ExA is aware of issues raised in relation to this duty in Deadline 1 and 2 responses. However, it is important that if any remaining IP considers that this duty has not been addressed, that they identify their position and

ExQ1	Question to:	Question:
		the reasons for it in writing in response to this question. Any response must identify the specific element(s) of the duty that in the IP's view has not been addressed.

Q3.1.1: Thurrock Council Response

Introduction

The assessment of reasonable scheme alternatives is a vital part of the development of any transport scheme. The design of LTC has evolved since options were first developed in 1994, with assessments of alternatives carried out in 2009, 2013. 2016 and a preferred route announced in 2017. The Council considers that the option assessment is not robust and that the decision to rule out public transport and other options in 2009 and confirmed in 2017 is not supported by evidence submitted as part of the DCO.

Even though the Regulations cited above do not state what a 'description' should constitute and what are 'reasonable alternatives' and what is 'relevant'. In order to demonstrate that the applicant has not complied, references to other highway DCOs are not considered relevant because the LTC scheme is unique, as is recognised by National Highways when it removed the LTC from the 'complex infrastructure projects' (CIP) section and set the project apart.

Reasons why the assessment of scheme alternatives is not robust

1. **Lack of Evidence:** the regulation quoted in this question states that the applicant should provide an '*indication of the main reasons for the option chosen'.* The applicant present their reasons in EIA Chapter 3 (APP-141), which relies on the 2017 Post Consultation Scheme Assessment Report. The Council notes this report is not an application document. In this document, paragraph 6.1 states, without supporting evidence, that no public transport scheme would be able to provide a similar level of congestion relief at Dartford Crossing as LTC. The Council has repeatedly requested the analysis to support this assertion, but it has been withheld. This means there is no evidence provided to the Examination to support the scheme choice.
2. **Removal of Public Transport Option:** the applicant's case for the delivery of LTC rather than a public transport solution (or combined road/public transport solution) is that only LTC can provide congestion relief at Dartford Crossing. However, the applicant's own analysis shows that compared to the base year LTC will not reduce traffic flows at Dartford Crossing in the Opening Year in several time periods (see paragraphs 2.1.11 to 2.1.15 of REP3-211). The lack of impact of LTC on Dartford Crossing shows that a public transport solution would in fact be better at removing traffic and providing congestion relief at Dartford Crossing. Such a cross-river public transport service would help provide the cross-river links for local residents to jobs and services, which the applicant states are an important part of the economic case for LTC. The cost of such a public transport scheme would be a very small percentage of the LTC cost. The Council notes that the delivery of the Kent Fastrack scheme cost in the range £100m-£125m (approximately 1-1.5% of the cost of LTC) and considers that a similar public transport scheme could be delivered for this level of investment.

ExQ1	Question to:	Question:

3. **Consideration of other management solutions:** the capacity of the northbound direction of Dartford Crossing through the tunnels is constrained by the need to manage the movement of hazardous loads. The applicant reports that this reduces capacity by c8%-12% (see paragraph 4.2.14 of 'Need for the Project' (APP-494). Different management arrangements and / or the use of Silvertown Tunnel for these movements would potentially help increase the capacity of the crossing, particularly in peak hours. This is a further example of a potential solution which has not been assessed by the applicant.
4. **Removal of Tilbury Link Road:** as part of the evolution of the design of LTC, Tilbury Link Road has been removed by the applicant from the proposals. The applicant states that this is because including TLR would not contribute to the Scheme Objectives for LTC. However, the Council has provided evidence (Appendix B.3 Annex of the Council's LIR (REP1-283)) to show that including TLR would remove traffic from Dartford Crossing and lead to a much-reduced land requirement at the A13/A1089/Orsett Cock junction, because of the potential to remove some traffic movements from the junction as they will be provided as part of TLR. This means that if the TLR is included in the scheme design for LTC 56ha of land would be required at the A13/A1089/Orsett Cock junction compared to 112ha without TLR, with a consequent lower environmental and Green Belt impact.
5. **Changes since 2016:** the most recent analysis of scheme options happened in 2016 and since then there have been significant changes to travel patterns and transport infrastructure. At the national level these include Covid-19 and the effects of Brexit (which has particularly affected arrangements for travel to / from the Channel Ports). Silvertown Tunnel has been approved and is under construction and the Elizabeth line has opened. The rise of home working (particularly following lockdown restrictions) means that working, commuting and freight patterns have changed significantly since the decision to proceed with the proposed LTC design. None of these effects have been considered as part of the assessment of scheme alternatives and hence the Council considers that the approach undertaken by the applicant is not robust.

Further commentary on these issues is provided by the Council in paragraphs 8.6.7 to 8.6.25 of their Local Impact Report (REP1-281), Appendix B Transport Alternatives (REP1-283) of the Council's Local Impact Report and paragraphs 18.7.15 to 18.7.22 of the Council's D3 submission (REP3-211).

SUMMARY
The option selection for LTC is based on an initial decision made in 2009. This was reviewed and confirmed by the applicant in 2017, but despite requests, the underpinning analysis has not been made available to the Council. Since the initial decision there have been many substantial changes to transport patterns and the wider economy which have not been considered as part of the decision-making process. Analysis by the Council shows that there are several potential public transport based options which would meet the applicant's objectives for LTC. There are also several alternative options for LTC, e.g. including TLR, which would better meet the objectives for LTC. The Council considers that these options should be considered by the applicant.

ExQ1	Question to:	Question:
3.2 Alternatives: Modes and Alignment Corridors		
Q3.2.1	IPs concerned that alternative modes/ solutions have not been adequately considered, Thurrock Council, TCAG	**Consideration of Alternatives: Other Modes/ Solutions** Concerns have been raised that insufficient attention has been devoted to the consideration of alternative modes and to solutions making use of public transport. ES Chapter 3 [APP-141] summarises the statutory and policy requirements for the consideration of alternatives and the three main phases in which alternative modes and solutions were evaluated. • The DfT 2009 study (paragraphs 3.6.1-3) reviewed a range of options including road alignment options, other modes (light and heavy rail and bus), works to the existing Dartford Crossing and composite modes (consisting of road alignment options with other modes) were considered. • The 2016 non-statutory consultation raised concerns about the degree to which non-road or composite modes and solutions had been considered. Flowing from that exercise, the Post-Consultation Scheme Assessment Report (Highways England, 2017) (paragraphs 3.6.5-6) considered: a) No road building and more provision of public transport, including a new rail link and enhanced bus services across the existing Dartford Crossing.

ExQ1	Question to:	Question:
		b) A combined road/rail link for passengers and freight. c) More priority for bus services on the new crossing and provision of more bus services. d) New ferry services across the Thames. e) A revised national ports strategy. Walking, cycling and horse-riding (WCH) measures were also considered, albeit as augmentations rather than as alternatives to the main proposed development. • A strategic options re-appraisal was carried out in 2022 which reached a conclusion that the preferred road option remained as the preferred solution (paragraph 3.6.8). Any IP making submissions to the extent that the consideration of alternative modes and solutions has not been appropriately carried out because relevant statutory or policy measures providing for the consideration of alternatives have not been adequately identified and applied; or because there has not been a sufficient consideration of alternative modes and solutions is requested to address the positions summarised in ES Chapter 3 and explain their detailed case.
Thurrock Council Response **Introduction** The comprehensive assessment of scheme options is a vital part of the development process for any transport scheme. The Council continues to consider that insufficient and inadequate evidence has been provided by the applicant to justify the scheme proposals and that policy and guidance has not been followed.		

ExQ1	Question to:	Question:

Scheme fails to meet Policy Requirements

As described in Appendix B of the Council's LIR (REP1-283), there is a requirement for the applicant to consider national policy (e.g. NNNPS), DfT Transport Appraisal Guidance and National Highways own guidance in assessing scheme options. The Council considers that the applicant has not met any of these requirements:

National Networks National Policy Statement:

Paragraph 4.27 states: 'For national road and rail schemes proportionate option consideration of alternatives will have been undertaken as part of the investment decision making process. It is not necessary for the Examining Authority and the decision maker to reconsider this process, but they should be satisfied that this assessment has been undertaken.'

As described below, for each of the three phases of assessment there is an absence of information or detailed analysis of public transport options.

DfT Transport Appraisal Guidance:

The key step under consideration for this work as part of TAG is Step 5: Generate Options. The Transport Appraisal Process (TAP) provides further guidance on how to approach option generation in section 2.8 of the document:
'It is important that as wide a range of options as possible should be considered, including all modes, infrastructure, regulation, pricing and other ways of influencing behaviour. Options should include measures that reduce or influence the need to travel, as well as those that involve capital spend.
Studies should not start from an assertion about a preferred modal solution, or indeed that infrastructure provision is the only answer.

Where highway solutions are being considered, options should include a consideration of different link/junction standards and other alternatives to address the problems in the area, such as public transport provision, demand management policies, traffic management measures and strategies.'

The TAP was under consultation in 2009 (when initial optioneering for LTC was developed as part of Phase 1 of the assessment) and has formed part of TAG since then. With this guidance having been in place for 13 years prior to the LTC DCO application, it would be expected that LTC would have reviewed their proposals to ensure they are consistent with this guidance, however, the documents provided at DCO do not show that the project has sufficiently covered the range of modes required under Step 5 of TAG.

National Highways Guidance:

In 2015 Highways England's Traffic Appraisal Modelling and Economics (TAME), now National Highways Transport Planning Group (TPG), developed a methodology to ensure that schemes promoted by National Highways meet their obligations under NPS and the TAP.

This methodology (known as TAME Advice Note 2) recommends the production of an Alternative Mode Assessment Report to support scheme development. This report should seek to answer two questions:

a. Could an alternative modal intervention solve the identified problem?

b. Knowing the benefits of the preferred option, what impact would a modal alternative require in order to relieve the problem to the same degree and is that viable?

ExQ1	Question to:	Question:

The guidance note (i.e. TAME Advice Note 2) has not been published, however, other NSIPs have published reports responding to this Advice Note such as A428 Black Cat to Caxton Gibbet and A303 Stonehenge. These reports have been published as part of the consultation and/or DCO process.

To date, **Alternative Mode Assessment Report** for LTC has not been provided as part of consultation or the DCO submission.

The Council has requested this information but the applicant has refused to provide it.

The Council again requests that the missing information is provided so that the rationale for the chosen scheme option is fully understood.

Phase 1 – Assessment in 2009

As described in Appendix B of the Council's LIR (REP1-283), the 2009 Dartford River Crossing study was commissioned by DfT and completed by Parson Brinkerhoff. The study was intended to investigate ways to address capacity constraints at Dartford Crossing. The Study considered the problems across both the road and rail networks and the potential options that could be used to solve capacity constraints across the River Thames to the east of London. The Study stated that a rail-based solution should be rejected because there was no current cross-river rail demand.

In effect, the Study ruled out a rail intervention because at the time of the study, the existing demand for cross river rail did not exist, while ignoring that there were significant issues with the existing rail provision including the need to travel into London to make a cross-river journey (which adds significant time and cost to any cross-river journey). The Study also did not consider a number of new developments north and south of the River Thames that would lead to increased demand for cross-river movements.

The Council considers that rail and other public transport options were ruled out too early in scheme development without properly accounting for their potential to alleviate congestion at Dartford Crossing. Growth was not properly considered and since 2009 there has been a range of significant changes to the provision of public transport services near the Dartford Crossing including the expansion of Fastrack.
In summary, the assessment at Phase 1 was inadequate.

Phase 2 - Assessment in 2016/2017

The applicant states in their Post-Consultation Scheme Assessment Report (Highways England, 2017) (see paragraph B.1.60 of REP1-283 for relevant extract) that they have considered alternatives and identified that none would resolve 75% of the identified problem, i.e. congestion at Dartford crossing. This position has not been substantiated by the applicant using evidence.

LTC in fact does not lead to a reduction in traffic at Dartford Crossing in many time periods, casting serious doubt on the legitimacy of the unsubstantiated position by the applicant that LTC is the only way to relieve congestion at Dartford Crossing.

The Council notes that the Post-Consultation Scheme Assessment Report has not been presented to the Examination. The applicant must submit the report to the Examination because without the report it is not possible to understand the analysis provided by the applicant. Repeated requests

ExQ1	Question to:	Question:

have been made for the applicant to justify its conclusions and provide the analysis to allow scrutiny of the applicant's assertions, which otherwise remain unjustified.

In summary, the assessment at Phase 2 was inadequate.

Phase 3 - Assessment in 2022

In paragraphs 3.9.11 to 3.9.16 of ES Chapter 3 (APP-141) the applicant provides a short (approximately one page) reappraisal of the LTC scheme. This references the impacts of Covid-19 and Brexit and maintains that these significant events have not affected demand for LTC. It is not clear if further assessment work has been undertaken. The Council notes that the applicant's report (ES Chapter 3 (APP-141)) states that significant changes were recorded in terms of goods vehicle movements at Dartford Crossing (from 33% to 42% of trips). This provides further evidence that the transport modelling analysis of LTC needs to be updated to reflected changes since the collection of baseline data in 2016, almost eight years ago.

In summary, the assessment at Phase 3 was inadequate.

Missed Opportunity to Improve Public Transport

Public transport connections have the obvious potential to link communities such as Tilbury, Chadwell St Mary, Grays and Chafford Hundred north of the River Thames with Gravesend and Northfleet to the south. Indeed, the ComMA (APP-518) shows that a significant quantum of the economic benefit of the scheme derives from short car trips across the river. A significant proportion of this demand for movement could be catered for by an attractive bus rapid transit (BRT) service utilising the emergency access facilities close to each of the tunnel portals.

The local attractiveness of such a scheme is evident from the popularity of the Kent Fastrack service currently using dedicated routes in the Gravesham area. Each bus could potentially take circa 90 cars off the road. An effective bus service could significantly reduce traffic demand for LTC. The irony is that in doing so, the bus service would negatively impact the business case for LTC. The LTC scheme is currently construed as a highway scheme with no priority measures for public transport and no facility for cyclists to cross the Thames. This is in stark contrast to the Silvertown tunnel.

At design stage the applicant initially assured the Council that the emergency access junction at the northern tunnel portal could be adapted to provide bus priority access. However, the applicant subsequently renegaded on this commitment. The current scheme does not locate the emergency junction at Tilbury in a position that conforms with DMRB standards for the length of on and off-slips. As it stands, the current design prohibits any future adoption or inclusion of bus priority measures. The junction would need to be moved and the substantial cost of remedying this design flaw would not stand the value for money test of Treasury.

Instead of optimising the opportunity to offer facilities to run an attractive bus route between the communities on opposite banks of the River Thames, this current LTC scheme penalises bus users.

ExQ1	Question to:	Question:

Any potential new service from Grays to Gravesend, for example, would need to first travel north some substantial distance, to the A13/A1089/Orsett Cock interchange, queue in the traffic congestion identified by the applicant at Orsett Cock, to travel south via LTC, past Gravesend to the congested and complex junction with the A2 and then return northwards to Gravesend.

In the reverse journey from Gravesend to Grays, the route would need to travel further through the complex interchange at A13/A1089/Orsett Cock having to compete with even more intense queuing and possibly delays, which would affect the reliability of the service. Given the time-consuming and convoluted journey that buses would be forced to take, the LTC design means that such a service provision would be commercially non-viable for bus operators.

The Council and other local authorities have repeatedly asked the applicant to explain its justification for deliberately precluding the opportunity to facilitate public transport services. Answers from the applicant have consistently been wholly unsatisfactory, vague and unjustified. No analysis of public transport potential has been provided by the applicant and consequently inadequate consideration has been provided in the design options tested. No evidence has been provided of engagement with commercial bus operators to understand their opinion on the project. In the absence of this analysis by the applicant, the Council has provided a detailed analysis of transport alternatives in Appendix B Transport Alternatives (REP1-283) of the Council's Local Impact Report.

Insufficient information

The applicant has consistently prevented the Council from undertaking detailed analysis of the potential for public transport by its refusal to release the LTAM model and only allow local authorities to access a Cordon related to their specific geographic area. The Council has undertaken analysis based on LTAM data that the applicant has shared that shows there are several potential options for improving public transport services across the River Thames between Kent and Essex. This analysis shows that there is potential for up to 1,530 trips to be removed from Dartford Crossing in the AM peak hour by 2045 (see Table B2.7 of REP1-283).

Summary

The Council's analysis shows that insufficient and inadequate information has been provided by the applicant to justify their approach to the assessment of alternatives in 2017 and 2022. The LTC scheme provides very poor facilities for public transport services and there is a clear missed opportunity to provide a solution which helps connect communities on either side of the River Thames. The consistent approach of the applicant to withhold the LTAM model means that a consistent analysis of public transport options cannot be made, but the Council's own analysis shows the potential for public transport alternatives to reduce traffic flows across Dartford Crossing at a significantly lower cost.

ExQ1	Question to:	Question:
Q3.2.2	IPs concerned that alternative modes/ solutions have not been adequately considered, Thurrock Council, TCAG	**Consideration of Alternatives: Other Routes** Concerns have been raised that insufficient attention has been devoted to the consideration of alternative routes for the LTC. ES Chapter 3 [APP-141] summarises the six broad route corridor options that have been considered (section 3.7, plate 3.1): A. Additional capacity at the existing Dartford Crossing. B. Swanscombe Peninsula link to the A1089. C. East of Gravesend and link to the M20. D. M2 to A130 links: 1. M2 link to A130 via Cliffe/Pitsea; and 2. M2 link to A130 via Canvey Island. E. Isle of Grain link to east of Southend. Any IP making submissions to the extent that the consideration of alternative corridors have not been appropriately carried out is requested to address the positions summarised in ES Chapter 3 and explain their detailed case.

Thurrock Council Response

Introduction

The Council accepts that the LTC alignment has been brought forward on the basis of an assessment of corridor options and the broad alignment is not questioned. The Council does though have concerns about the consideration of the alignment and junction arrangements within the selected broad corridor. It is noted that the broad alignment of Option C that was considered included TLR and Bluebell Hill. The current scheme is therefore itself an alternative to the one that is consider in the LTC ES. The removal of the TLR is of particular concern to the Council as it removes the potential to more directly access the Ports and other parts of Thurrock compared to the current proposals which require the use of the A13/A1089/Orsett Cock junction. The provision of TLR would also enable a much smaller junction to be provided at the A13/A1089/Orsett Cock junction.

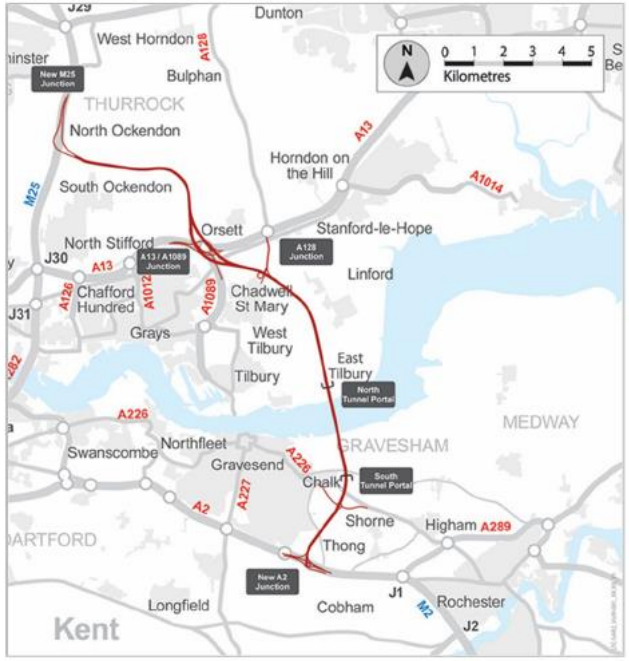
ExQ1	Question to:	Question:

Tilbury Link Road

A junction in Tilbury was provided as part of Route 2 presented in the 2016 non-statutory consultation (see extract below), but then removed from the preferred route announced in 2017.

Plate 3.2 Shortlisted routes presented at the 2016 non-statutory consultation

Plate 3.3 The preferred route announced in April 2017



Section 3.20 of the EIA Chapter 3 provides the applicant's reasons for removing the Tilbury junction and for not making provision for the Tilbury Link Road. The relevant extract is provided below together with comments from the Council.

ExQ1	Question to:	Question:

Table 1 Review of reasons for removal of Tilbury Junction

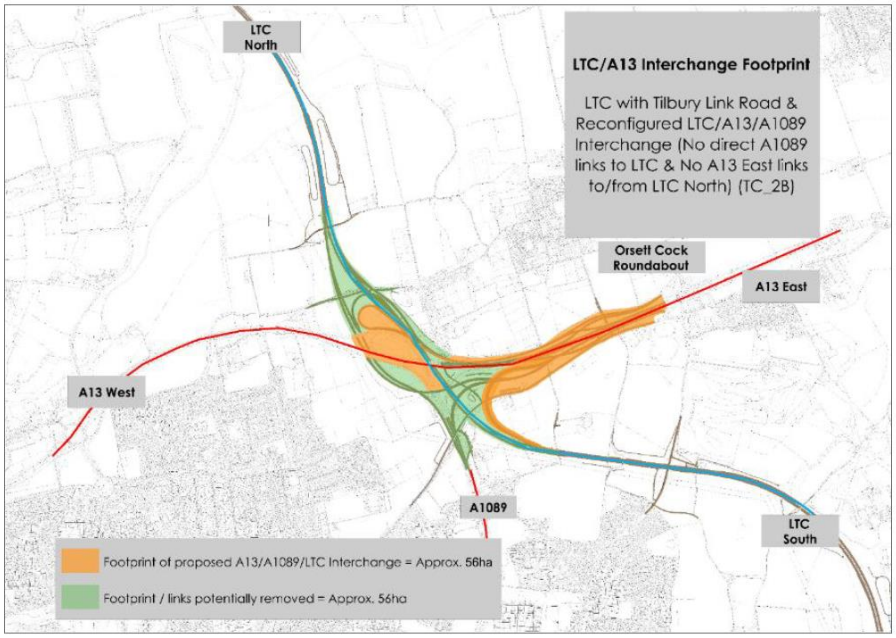
Item	NH Statement	Council Comment
1	Although a link road to Tilbury2 and Tilbury would have some benefits in providing additional connectivity, it would also have significant environmental impacts, including impacts on ecological sites and cultural heritage sites, particularly Tilbury Fort.	NH has considered a number of alignments for a TLR. Some alignments follow the route of the haul road which cuts through the heart of the operational Port area. This route option is not the preferred option for the Local Highway Authority or the Port. It may have environmental impacts but the Applicant has yet to undertake necessary appraisal for its statement to be factually accurate. The preferred TLR route follows an existing infrastructure corridor alongside the railway line. This enables environmental impacts to be minimised. Any impacts of the TLR will need to be balanced by the opportunity to reduce severe environmental impacts caused elsewhere as a result of the current scheme configuration. For example, the removal of the Tilbury Junction means that the junction at A13/A1089/Orsett Cock needs to be significantly larger (112ha compared to 56ha with TLR) - see further commentary below. There needs to be assessment of the comparative environmental and green belt impacts of both junctions with and without TLR.
2	Traffic modelling highlighted several drawbacks with the link road design, including unnecessary delays to Heavy Goods Vehicle journeys and significant impacts on the local road network.	The removal of the Tilbury Junction means that the junction at A13/A1089/Orsett Cock must accommodate more traffic. VISSIM modelling shows that there will be significant local traffic impacts. There needs to be an assessment of the comparative traffic and transport impacts of both junctions with and without TLR.
3	The link road would be located in the flood zone and would require the provision of a significant additional flood storage compensation volume.	These challenges are not considered insurmountable and as such were considered by the applicant in its preliminary analysis of the proposals, which informed its Strategic Outline Business Case (SOBC) for the TLR. It is important to note that much of the TLR would need to be elevated to rise over the railway sidings, which provide a connection to the Port of Tilbury and this significantly reduces the flood impact of TLR. In addition, other elements of the TLR would be in an existing infrastructure corridor along the existing railway.
4	The link road would not be compatible with the Tilbury2 DCO application, which envisages road traffic from the port using the existing A1089.	The applicant does not consider the TLR to be incompatible with the made DCO for Tilbury2 and the Council notes that at no stage over the last four

ExQ1	Question to:	Question:
		years of engagement with the Council on TLR has NH ever stated that it considers the TLR to be incompatible with the Tilbury2 DCO. The applicant has commissioned significant feasibility work required to inform its SOBC for TLR and has not identified this as an issue. The applicant is fully aware that the purpose, function and appropriate management regime for TLR would need to be developed through an iterative process of strategic and junction modelling as is normal practice. The applicant cannot therefore provide any substantive basis for any claim for incompatibility. In addition, the applicant's current strategic LTAM modelling assumes that traffic travelling to/from the Port of Tilbury will not use LTC and will continue to use the Dartford Crossing via the A13 /A1089. The Council notes that this is not substantiated by the applicant in the LTAM modelling it has submitted to the Examination.
5	A link road would not contribute to the Scheme Objective of relieving the congested Dartford Crossing and approach roads and improving their performance by providing free-flowing north-south capacity	The Council has provided evidence (REP1-281) to show that including TLR would remove traffic from Dartford Crossing helping improve the performance of the crossing as part of the delivery of LTC.
6	A link road to Tilbury2 and Tilbury was therefore ruled out.	The Council considers that TLR should be provided, or at least that the design of LTC should allow for the future delivery of TLR.

Further commentary on providing TLR

Appendix B Annex 2 'LTC Alternatives – TLR and A13 Junction' (REP1-283) provides a detailed assessment of options for Tilbury Link Road and the A13/A1089/Orsett Cock junction. The analysis shows that the introduction of TLR enables a much-reduced junction to be provided at A13/A1089/Orsett Cock. This is shown by the extract below, which shows that with TLR the A13/A1089/Orsett Cock junction can be reduced to a size of 56ha (from a size of 112ha).

ExQ1	Question to:	Question:



The report provides the following summary of the benefits of providing TLR and making changes at the A13/A1089/Orsett Cock junction (which were assessed using detailed transport modelling).

ExQ1	Question to:	Question:

LTC + Tilbury Link Road
LTC/A13 Interchange: Remove Direct Connections from A1089 to LTC AND from A13E to/from LTC North
(Option CTL05)

This option would better support sustainable Freeport and Local Plan growth, reduce local harm in Thurrock and provide better value for money by:

- providing a more direct connection between LTC and the Port of Tilbury
- unlocking opportunities for faster cross river local public transport connections via the Tilbury Link Road and LTC
- still delivering strategic road network benefits - providing relief to the Dartford Crossings, on M25 approaches, on A13 Corridor (west of LTC) and significantly reducing traffic demand on A1089 and at Asda Roundabout
- reducing some of LTC's negative local traffic and environmental impacts – the total distance travelled by all vehicles across Thurrock is reduced by 3%-4% compared to the current LTC scheme (average vehicle trip lengths across are also reduced)
- reducing the negative impacts of LTC local communities, particularly by reducing traffic on Brentwood Road, Chadwell Hill (Chadwell St Mary), Muckingford Rd and Buckingham Hill Road (Linford)
- reducing the LTC/A13 interchange footprint and significantly reducing LTC's land take and local environmental impacts in Thurrock
- reducing the embedded carbon associated with the scheme
- reducing local air quality and noise impacts along the route of LTC through Thurrock as a result of reduced traffic flow on LTC and also along the A1089 in Tilbury
- providing an opportunity to reduce scheme costs (associated with the LTC/A13 interchange) and freeing up project funding for the TLR and targeted measures to mitigate wider network impacts and support sustainable transport measures
- reducing construction impact and timescales (associated with the LTC/A13 interchange)

Summary

The Council maintains that the assessment of route and junction alternatives provided by the applicant is insufficient and inadequate. The Council considers that the inclusion of Tilbury Link Road is necessary to enable the LTC scheme to meet its objectives and that it offers a better design solution. The Applicant has not adequately explained why the removal of this essential part of the scheme was required.

ExQ1		Question to:	Question:
4.	**Traffic and Transportation**		
4.0	**Modelling**		
Q4.1.10		Applicant, Thurrock Council, PoTLL, DPWLG, LRN stakeholders	**Modelled Traffic Effects: Traffic Flow Simulation: Orsett Cock** If the traffic impacts at Orsett Cock roundabout have not been fully understood and/or modelled, what are the wider implications for the Applicant's Transport Assessment?

Thurrock Council Response

Introduction

Understanding the traffic impacts at Orsett Cock is of fundamental importance to the Council because of the potential impacts of LTC on the local road network for which the Council is the Highway Authority. Significant concerns have been raised by the Council about the modelling of Orsett Cock over a period of years and the applicant has responded by consistently refusing to provide the modelling which is required by TAG and which the applicant would expect to see as part of the assessment of a development which affected the SRN. This issue has been raised by the Council at Issue Specific Hearings 1, 3 and 4 (ISH1, ISH3 and ISH4).

Strategic model does not reflect the queuing and delay forecast by the Orsett Cock microsimulation model

The Council's comparison of the results of the Orsett Cock microsimulation forecast model with the results of the strategic model (the Lower Thames Area Model, LTAM) shows that there are clear differences between the two models. Importantly for the Council, the microsimulation model shows longer queues and longer delays than the LTAM model with LTC in place. This is important because these modelled queues will have a significant effect on the operation of the local road network.

This analysis has been previously presented in paragraphs 14.1.25 to 14.1.50 and Section 3 of Appendix E of the 'Council's Comments on Applicants Submissions at Deadline 1 and 2' [REP3-212] summarise the Council's position with regards to the comparative analysis of the strategic and microsimulation models set out by the Applicant in the 'Localised Traffic Modelling' [REP1-187]. In addition, the ISH4 Written Submissions set out the concerns raised by the Council that the micro-simulation modelling parameters need to be fed back into LTAM in order to reduce the level of divergence currently between the models. This is set out in detail in Appendix A of ISH4 Written Submissions including reference to TfL Modelling Guidance (included as Appendix B of the Council's Comments on Applicant Submissions at D3), examples of model iteration between strategic and micro-simulation models and the steps required to be taken to resolve the residual modelling issues at Orsett Cock.

ExQ1	Question to:	Question:

Need for a micro-simulation model

Micro-simulation models are better than strategic models at representing traffic behaviour and congestion and they are typically examined to examine network performance at a local level. Strategic models consider the wider impact of new schemes on traffic routing and broader impacts of traffic flow changes. This approach is in fact the one followed by the applicant on other DCOs as shown by the extract below from the A66 Northern Trans-Pennine Project. Further submissions with respect to the relationship between strategic and micro-simulation modelling is provided in Appendix A of ISH4 Written Submissions.

A66 Northern Trans-Pennine Project
3.8 Combined Modelling and Appraisal Report Appendix D - Stage 3 Transport Forecast Package

national highways

8.4 Forecast Traffic Delay

8.4.1 Forecast traffic delays have been assessed on approaches to major junctions along the A66 including;

- M6 Junction 40
- Kemplay Bank
- Scotch Corner

8.4.2 Delay information in this section relates to the base, DM 2044 and DS 2044 scenarios for AM, IP and PM peak periods. Whilst the delay information from the SATURN A66 traffic model provides an indication of operational performance, each junction has been assessed separately within VISSIM (microsimulation modelling software) which is considered more appropriate when focussing on a much smaller and localised area. Full information on these operational forecast models can be found separately within the **3.7 Transport Assessment Chapter 8.2 Major junction performance.**

Therefore, the differences observed between the strategic model and the microsimulation model reinforce the Council's long-stated view that LTAM as a strategic model underestimates the impacts of LTC on Orsett Cock.

The applicant has presented two tools, which have produced very different forecasts for Orsett Cock. Considering that microsimulation models are more detailed and better represent real world travel conditions, the Council contends that the strategic model underestimates local impacts and that, in accordance with TfL Traffic Modelling Guidelines V4.0, Section 3, Sub-section 3.4.2 and industry best practice and the applicant's own approach at other DCOs (e.g. A66), the microsimulation model parameters for Orsett Cock (and other modelled junctions) should be included in LTAM, so that the queueing and delay is better reflected in LTAM. The microsimulation model also needs to demonstrate that it can accommodate the same level of traffic forecast by the strategic model. This approach was discussed at ISH4 and is set out in more detail in the Council's Post Event submission for ISH4.

Microsimulation model network assumptions are different from Orsett Cock design

As summarised by the Council at the ISH3 Hearing (and in its Post Event Submission), there are discrepancies between the microsimulation models of Orsett Cock Roundabout and the junction design that have not been addressed by the applicant. Of particular importance are:

1. The short weaving length on the eastbound approach to the Orsett Cock junction requires vehicles leaving LTC to merge with traffic on the A13 eastbound off-slip. The two streams of traffic would seek to cross as they join the Orsett Cock circulation over this short 90m weaving length (electronic page 299 of Appendix C of the LIR [REP1-284]). The microsimulation modelling shows significant congestion at this location and in order to resolve this problem the applicant extended the weave length from 90m to circa 200m within the model, which is still not sufficient to accommodate the queuing. However, the design of the junction has not been updated to reflect the need for a much longer weave length. It is worth noting that the Applicant has extended the weave length to the maximum possible within the Order Limits. Given that this does not solve the weaving problem, this shows that this problem cannot be resolved within the Order limit
2. The design of the LTC/A13/A1089/Orsett Cock interchange was fixed by the applicant before the localised modelling of the junction had been finalised and agreed. The modelling of the junction is showing significant congestion both on sections of the LTC as well as parts of the LRN (for example, A128 Brentwood Road, Brentwood Road south, Rectory Road, A1013 and A13 westbound off-slips). These capacity issues have yet to be addressed by the applicant within the junction design.
3. The Council notes that the Applicant had never previously made the Council (i.e. the Local Highway Authority) aware that it had undertaken any VISSIM modelling as part of the design process and did not share this with the Council, as would normally be expected as part of a collaborative process to mitigate local road impacts. The scope and detail of these models has not been shared for any of the previous models listed by the applicant.

Wider implications for Applicant's Transport Assessment and LTC scheme design if Orsett Cock not modelled nor impacts understood

1. Reduced benefits and increased disbenefits of LTC: the assessment of scheme impacts in the Transport Assessment (APP-529) and ComMA (APP-518) are based solely on the strategic model. Microsimulation modelling of Orsett Cock Roundabout demonstrates that the strategic model underestimates traffic impacts, which if reconciled (along with other localised modelling), would change the journey time benefits/disbenefits of the scheme and would increase disbenefits.
2. Potential changes to DCO Order Limits: in order to address the impacts at Orsett Cock Roundabout, a review of the junction design is required, which may result in changes to the DCO Order Limits. The lack of adequate options appraisal by the applicant in identifying the preferred design of the scheme has been raised by the Council for a number of years. In particular, the design of the LTC/A13/A1089 junction and that the provision of a Tilbury Link Road would enable the LTC/A13/A1089 junction to be rationalised and reduce the land take. In light of the significant traffic impacts identified in the microsimulation modelling, the Council continues to contend that there are alternative junction designs that have not been considered by the applicant. – refer to the Council's LIR Appendix B Annex 2 'LTC Alternatives – TLR and A13 Junction' (REP1-283)
3. Cost escalation: in order to address the impacts at Orsett Cock, scheme design changes would be required. The costs for these changes are not included in LTC costs and this would lead to a reduced BCR.

ExQ1	Question to:	Question:

4. Erosion of LTC Benefit/Cost Ratio (BCR): the increase in disbenefits and increase in scheme costs would reduce the BCR. The estimated margin of benefit of LTC is now so low, that even modest changes in the assumptions would wipe out the net benefit entirely. This would mean that the scheme would cost more than the benefits it could produce and could not be justified in terms of value for money.

Orsett Cock Workshop

The ExA has required the applicant and local highway authorities and the ports to hold a workshop and present a joint paper at Deadline 5 with respect to traffic modelling for Orsett Cock, with the focus being to narrow the areas of disagreement between the parties. As part of that workshop the Council will seek to agree a detailed programme with the applicant setting out the tasks to be undertaken and associated timescale. The Council is concerned, given the experience to date of collaborating with the applicant on localised modelling, that the tasks may not be undertaken in accordance with the programme.

It is entirely the ExA decision on how such matters might be progressed following the submission of the joint paper at Deadline 5, but, as the ExA is aware, there is the provision in Rule 17 of the Infrastructure Planning (Examination Procedure) Rules, 2010 that allows for a range of further information to be requested from the applicant and for the applicant to supply such requested information by the date and manner specified by the ExA.

The Council understands that a similar Rule 17 request was made by ExA for the recent A428 Black Cat DCO. As a result of the local highway authorities' criticism of NH's reliance on the strategic model, the ExA made a Rule 17 request of NH relating to sensitivity testing using observed local flows and VISSIM modelling for a local junction. The ExA were critical that NH had only relied on the strategic model and had failed to engage constructively with the LHAs. Extracts from the ExA Recommendation Report for A428 Black Cat with regards to traffic modelling are included as Annex C of Appendix A of this ISH4 Written Submission, with an extract set out below.

> 6.4.22. The need for additional traffic modelling to assess the effects on the local highway network is supported by the fact that the Applicant explained that the use of traffic flows extracted from the strategic model was less accurate than utilising observed survey data.
>
> 6.4.23. The ExA considers it would have been reasonably expected for the Applicant to have undertaken collaborative working with the LHAs and sensitivity testing far earlier in the application process, particularly as it would appear that concerns were raised previously by CCC at the pre-application stage. The ExA considers that the Applicant should have involved LHAs earlier in the sharing and validation of the traffic modelling, as significant time would have been saved during the Examination.

ExQ1	Question to:	Question:
Summary **Traffic flows at Orsett Cock have not been modelled in accordance with the applicant's own approach at other DCOs and its approach does not reflect industry best practice (refer to ISH4 Written Submissions Appendix A for details on model iteration required to align different models). The reliance of the applicant on the results of a strategic model to assess the impact of LTC on local junctions is not appropriate and this is further emphasised by the limited micro-simulation modelling results (which the applicant has released after much delay), which show significant increases to queues and delays. These issues could be resolved by the comprehensive micro-simulation modelling of the A13/A1089/Orsett Cock junction and the Council considers this is a vital part of the evidence, which needs to be considered by the ExA. At present the absence of this modelling means that traffic benefits of LTC are over-estimated, construction costs and underestimated which both lead to a reduced BCR. Finally, at present there is no evidence that the LTC can be constructed in a way which manages forecast impacts with a design which is within the Order Limits.**		
Q4.1.13	Thurrock Council	**Modelled Traffic Effects: Lower Thames Area Model and Further Localised Traffic Modelling** Thurrock Council state that the Applicant has relied solely on LTAM to inform the operational impacts of LTC. However, the Deadline 1 submission "Localised Traffic Modelling" [REP1-187] clearly sets out that localised traffic modelling work was completed by the Applicant during the development of the LTC. In light of that, can **Thurrock Council** clarify its position and identify if any further specific localised traffic modelling work ought to be undertaken in its view?
Thurrock Council Response **Introduction** The need for comprehensive modelling of the impact of LTC on Thurrock's local road network is of significant importance to the Council. Ongoing discussions have been held with the applicant on this issue, but the applicant is still to provide details of traffic impacts on the local network using appropriate modelling tools, i.e. agreed and acceptable micro-simulation models.		

ExQ1	Question to:	Question:

No localised traffic modelling provided in DCO application

No localised traffic modelling was submitted within the DCO application. The assessment of impacts of LTC on the Thurrock local highway network are summarised by the applicant in the Transport Assessment [APP-529] and the Combined Modelling and Appraisal Report (ComMA) [APP-518] with sole reliance and reference to LTAM. No reference was made within the DCO application to localised modelling. It therefore cannot be true that localised traffic modelling was completed during the development of the LTC project, as is further evidenced below.

Localised modelling only provided following request from Examining Authority

It was only once the ExA required the applicant, during ISH1, to submit localised modelling at Deadline 1 (as set out in the Localised Traffic Modelling report [REP1-187]) that localised modelling formed any part of the evidence base before the Examination. Had it not been for that request by the ExA and many Interested Parties, the only evidence before the Examination from which the Examining Authority would have had to make its recommendation to the Secretary of State would have been LTAM strategic modelling.

Ongoing requests for information ignored

For a long period before the DCO submission (from late 2021), the Council has sought to require the applicant to develop and share localised models for parts of the local highway network that LTAM was identifying had potential traffic impacts.

Table 3.2 of the Localised Traffic Modelling report [REP1-187] submitted by the Applicant at Deadline 1 summarised a number of localised models that have been prepared by the Applicant. The Council was not aware of many of these models until reading the submission at Deadline 1 and the models were not mentioned or shared by the applicant during many years of technical engagement. In addition, at no point has the available localised modelling been used collaboratively with the Council to inform the design of proposals for LTC.

Modelling Timeline

Figure 9.1 of the Council's LIR [REP1-281] summarises the modelling status at the time of the submission of the LIR [REP1-281]. Whilst the LIR set out the modelling status, it did not set out the chronology, which is provided below:

Table A: Status of Localised Modelling in Thurrock

Location	Localised Model	Provided at DCO submission	Provided at D1 submission	Provided at D3 submission	Base year model agreed with the Council?	Forecast Model agreed with the Council?
a. **The Orsett Cock junction**	1. Orsett Cock VISSIM model	×	✓	-	✓	×
b. **The Manorway roundabout**	2. The Manorway VISSIM model	×	✓ (forecast model only)	-	×	×
c. **Daneholes roundabout**	3. East-west VISSIM model	×	✓	-	×	×

ExQ1		Question to:			Question:	
d. **ASDA Roundabout**	4. ASDA VISSIM Model	×	×	✓	×	×
e. **A126 Marshfoot Road Junction**	3. East-west VISSIM model	×	✓	-	×	×
f. **A13 westbound merge at Five Bells junction**	requested but not provided	×	×	×	×	×
g. **A1012 / Devonshire Road junction**	requested but not provided	×	×	×	×	×

Despite repeated requests microsimulation models were only developed by the Applicant for a selection of junctions and only the Orsett Cock base year model has been approved by the Council. The review of the other base year and forecast models undertaken by the Council clearly highlights issues in the models, which need to be addressed before they can be used as a reliable evidence base.

Microsimulation modelling is not complete and further microsimulation modelling ought to be undertaken

The Council therefore contends that microsimulation modelling is not complete and further microsimulation modelling needs to be undertaken as summarised in the table below.

Table 10.2: Localised Modelling in Thurrock – Further Work Ought to be Undertaken

Location	Localised Model	Base year model needs to be developed	Forecast year models need to be developed or updated	Agree Base year models with the Council	Agree Forecast Year Models with the Council	Agree Mitigation
a. The Orsett Cock junction	Orsett Cock VISSIM model	Completed	Required	Agreed	Required	Required
b. The Manorway roundabout	The Manorway VISSIM model	Required	Required	Required	Required	Required
c. Daneholes roundabout	East-west VISSIM model	Completed but not agreed	Required	Required	Required	Required
d. ASDA Roundabout	ASDA VISSIM Model	Completed but not agreed	Required	Required	Required	Required
e. A126 Marshfoot Road Junction	East-west VISSIM model	Completed but not agreed	Required	Required	Required	Required
f. A13 westbound merge at Five Bells junction	ARCADY model provided at D3 does	Required	Required	Required	Required	Required

	not address concerns					
g. A1012 / Devonshire Road junction	Requested but not provided	Required	Required	Required	Required	Required
h. Tilbury junction	Requested by not provided	Require	Required	Required	Require	Required

* The Council is producing its own model

Appendix E, Annex 1 of the Council's Comments on Applicants Submissions at Deadline 1 and 2 (REP3-206) summarises the status of modelling at Deadline 3. The Council's D4 submission has summarised the current modelling status, involving the additional local modelling submitted at D3 by the applicant, namely Five Bells Roundabout and Asda Roundabout.

Summary

The applicant did not provide any localised modelling in the DCO application and has only recently provided some localised modelling following a direct request from the Examining Authority at ISH1. Throughout the development of the DCO the Council has attempted to work collaboratively with the applicant to develop models and solutions to understand and mitigate the impacts of LTC on the local road network. The applicant has consistently failed to engage with this process. Further localised modelling is required for further scenarios with and with LTC in future years, e.g. (2030 and 2045) and under a range of Common Analytical Scenarios.

ExQ1	Question to:	Question:
Q4.1.14	All	**Modelled Traffic Effects: Lower Thames Area Model: TAG Compliance** Does **any party** disagree with the Applicant's conclusion that the LTAM is TAG complaint? If so, please explain why.

Thurrock Council Response

Introduction

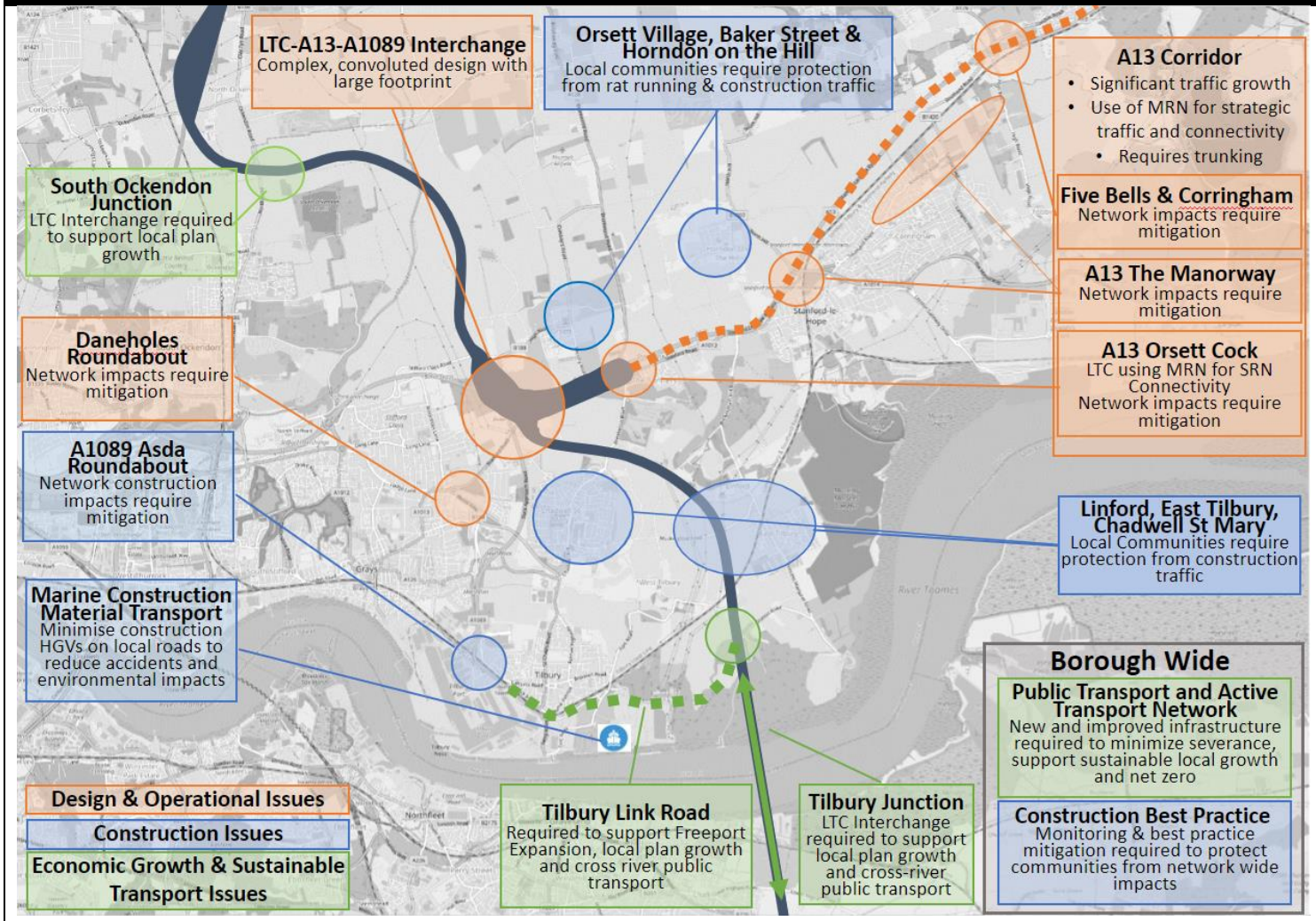
The Council disagrees with the Applicant's conclusion that the LTAM is TAG compliant. This is because of the age of the base traffic data, the inadequate consideration of uncertainty, the inconsistent assessment of LGV and HGV movements. These issues have been presented in Section 7.8 of the LIR [REP1-281] and summarised by Professor Goodwin at ISH4 (which are included in the Council's D4 'Post Event Submission' for ISH4),

ExQ1	Question to:	Question:
LTAM forecasting is based on very outdated data The base year of the model is 2016 and forecasting does not reflect changes that have significantly impacted the transport sector in the last few years, including the UK's exit from the European Union, changes to the UK economy, the UK's Net Zero Strategy, the COVID-19 pandemic and rising fuel prices. These are significant events, which have led to marked changes in travel patterns and which will have an impact on LTC forecasts and design. To address the problem the applicant should follow DfT's guidance in Appendix B 'Adapting the core scenario to large scale changes' of Unit M4 'Forecasting and Uncertainty'. **Inadequate Consideration of Uncertainty in Forecasting** Inadequate sensitivity testing has been undertaken by the applicant as part of the scheme appraisal and in the information presented at DCO submission. This is inconsistent with the latest Uncertainty Toolkit approach from DfT published in 2021. The new DfT Common Analytical Scenarios guidance and NTEM8 trip forecasts (both published 2022) have not been incorporated. The Applicant seems to have accepted some of these points in principle by publishing at D3 a report, which sets out a series of different model run outputs that have been prepared using the LTAM incorporating updates and reflecting different scenarios published by the DfT in November 2022 (REP3-145). However, within this report the applicant has only presented a series of detailed tables of river crossing traffic. No analysis has been made of the impact of these changes on other traffic flows and on the wider economic and environmental appraisal. Additionally, the emerging Local Plan for Thurrock (broad quanta and locations only) needs to be tested as the scheme is likely to reduce the available capacity of the local road network to accommodate the emerging Local Plan. The Council requests that the impact arising from Thames Freeport is also tested to ascertain sensitivity of the LTC impacts. **Incorrect assessment of Heavy and Light Goods Vehicles** The Applicant asserts and attributes to DfT, wrongly, that characteristics of Heavy and Light Goods vehicle trips do not change as a result of LTC. In other words, their origins, destinations, numbers and total mileage are almost exactly the same with and without the Lower Thames Crossing. The probability that this could not be true was not even mentioned in the Uncertainty Log, which records assumptions made in the model that will affect travel demand and supply. The assertion is incompatible with the analysis of wider economic impacts of LTC, DfT's published empirical evidence and with the project's strategic objectives. Furthermore, the assumption contradicts the applicant's own reporting of companies supporting the project, who say they can expand their activities to make use of LTC. Therefore, the traffic impacts of increased goods vehicle traffic will have been underestimated, and, further, it is likely that the wider economic benefits, without which the scheme could not survive, will be overoptimistic.		

ExQ1	Question to:	Question:
The Council requests that this is addressed by appropriately forecasting variations in Heavy and Light Goods vehicle trips in the without and with LTC forecast scenarios. **Other challenges with TAG compliance** As stated in other evidence (e.g. Section 7.7 of the Council's LIR (REP1-281)), as well as the issues with LTAM the following issues are also considered by the Council to mean that the applicant's appraisal is not compliant with TAG. • The DfT 'high' values of carbon have not been tested, or even mentioned, even in the most vital value for money sensitivity test. • There is no recognition that wider economic impacts can be either benefits or costs – only the benefits are counted. The DfT's TAG guidance always and systematically is to assess both. **Summary** **The LTAM model is not TAG compliant because of the age of the base line data, inadequate assessment of uncertainty and inadequate assessment of LGV and HGV movements. The assessment of carbon and wider economic benefits is also considered to be not compliant with TAG.**		
4.1 Mitigation		
Q4.2.7	Local Authorities	**Wider Network Monitoring Approach** It has been suggested that the Applicant's approach to monitoring wider impacts contained in the WNIMMP is not compliant with the NPSNN. However, it appears established practice for made DCOs to include provision for wider network monitoring along similar lines as proposed here. Accordingly, please explain why such an approach would be unacceptable in this instance?
Q4.2.7 Thurrock Council Response **Introduction** The Applicant's approach to monitoring and mitigating wider impacts is not acceptable to the Council. This is because the assessment of impacts using the applicant's strategic LTAM forecasts harm to local communities, network users and at locations across the Local Route Network in		

ExQ1	Question to:	Question:
Thurrock. The applicant continually refers to LTC as a 'transformational' scheme and this means, together with other reasons including the size of the scheme, that the arrangements for other National Highways DCOs are not directly relevant. This topic was discussed in detail at ISH4 and ISH7 and the response to this question should be read in parallel with the Council's post hearing written submissions from those hearings. **The Applicant's modelling shows negative impacts** The applicant has shown that LTC will create network congestion at locations within Thurrock and displace traffic onto less suitable corridors and through local communities (noting that this comment sets aside the discussions about the adequacy of the strategic modelling and the absence of agreed and accepted localised modelling for all parts of the local network). The image below indicates how widespread the negative effects of LTC are and that none of those effects are proposed to be mitigated. The applicant's approach to provide data under the guise of a monitoring strategy is entirely ineffective and does not resolve the effects of the project.		

ExQ1	Question to:	Question:



The Applicant is not compliant with NPSNN

The applicant does not propose a mechanism to resolve these impacts but simply to provide data on the magnitude of effects even though the NPSNN makes it absolutely clear at paragraph 3.3 that '*In delivering new schemes, the Government expects applicants to avoid and mitigate environmental and social impacts*…'. Paragraph 5.202 also states that the "mitigation of transport impacts is an essential part of Government's

ExQ1	Question to:	Question:

wider policy objectives for sustainable development." It is therefore not adequate for the applicant to forecast impacts, to refuse to mitigate them through design or other robust initiatives and not to provide secured funding to mitigate impacts.

Negative impacts forecast but no mitigation and no funding

The applicant is relying on its evidence in the Examination to assess the forecast impacts, but rather than using that to inform the design of mitigation the forecasts are currently being ignored by the applicant. It is only because of the work of the Council that attention is being paid to those impacts.

In responding to concerns raised by the Council, the applicant is proposing through its Wider Network Impacts Management and Monitoring Plan (WNIMMP APP-545) to use the principles of the POPE (Post-opening Project Evaluation) monitoring process to defer mitigation of impacts to other funding streams, which have no certainty of financial allocations.

The POPE process sets out the principles of data collection relating to the use of NH's new networks. It is designed to inform the applicant of how to report on and manage its own network effects. It does not provide for a mechanism for the funding of observed impacts. The Council considers that it is appropriate that the WNIMMP extends the principle of measuring impacts on the LRN post opening via the POPE system without securing a mechanism to fund observed impacts. The commitment to use POPE is not secured in the DCO Control Documents and it is not an independent process.

Additional costs for Thurrock

The applicant's approach in the WNIMMP therefore imposes additional costs on the Council to assimilate the monitoring information from the applicant, assess it and, if required, assemble a submission to National Highways for a funding allocation to resolve the observed impacts.

There is no certainty of funding from applications to the very limited pots of funding available to the Council and other Councils from across the country will be competing for the same funds.

Additional time to mitigate impacts

The time required for funding submissions, review of submissions and then allocation of funds means that there would be a substantial delay to the resolution of any identified impacts, even if funding were awarded. To illustrate the point, it is notable that funding for east-facing access from the A13 to Lakeside was originally offered by DfT in relation to the permission for the new QE2 Bridge at Dartford. Over three decades later, the Council continues its struggle to obtain National Highways approval and funding for this scheme. The Council acknowledges that there is a move away from a 'Predict and Provide' approach to transport infrastructure towards a 'Vision and Validate' or 'Monitor and Manage' approach. However, given the impacts that are being forecast for LTC would have substantial harmful effects on the local area the Council considers that these should be resolved as a part of the LTC project and not delayed for future 'validation' and uncertain funding.

ExQ1	Question to:	Question:

Responding to uncertainty

If the applicant has certainty in its traffic forecasts it should reflect that by securing mitigation and required funding for those impacts which its modelling shows are expected to occur. If the applicant is uncertain about its forecasts, then a secured funding stream should be allocated to resolve impacts, both unforeseen and forecast.

Approach in other DCOs

The approach adopted by other major infrastructure projects is a combination of predict and remediate and then monitor and manage. Funding for both strands has been secured through the DCOs for these other major infrastructure projects.

The applicant acknowledges that LTC is its biggest infrastructure project, probably since the phased building of M25 and as a 'Pathfinder' scheme is to be its greenest ever road. Other National Highways infrastructure projects have typically been to relieve congestion along the alignment of the project, such as A303 (Stonehenge), A21 (Pembury) and A428 (Black Cat) rather than to create a major new road corridor.

LTC is a new corridor which is described by NH as being 'transformational' in both reassigning traffic and inducing further vehicle mileage and accidents at locations not directly on the line of the project. The project therefore has no direct precedent and the approach to mitigation should consider the broader effects across the region. The applicant frequently notes the regional nature of the project and so cannot also seek only to consider the on-line design aspects.

The Silvertown Tunnel project consented through the DCO process does have a robust approach to monitoring and mitigation, which is led by TfL (the promoter) in full engagement with surrounding local authorities.

A13/A1089/Orsett Cock is fundamental to the LTC scheme

The Council is strongly of the opinion that the effects of LTC on the interchange between it and A13/A1089/Orsett Cock are not 'wider network impacts', but are instead an integral function of the project. Resolution of congestion problems forecast by the applicant should therefore be included within the consented scheme and not left, as the applicant suggests repeatedly, to the appointed contractor to resolve in detailed design.

There can be no certainty that resolution of identified issues at A13/A1089/Orsett Cock could be achieved within the Order Limits, hence the need to consider mitigation arrangements at this DCO Examination stage. Not securing a workable layout prior to any DCO grant would leave excessive uncertainty. Furthermore, the financial and geographic effects of the necessary changes at Orsett Cock will not have been reflected in the scheme's BCR or considered as part of the DCO Examination.

Role of DfT/NH guidance and NH requirements on developers

The DfT/NH provides guidance to other developers through DfT Circular 02/2013 (with Circular 01/2022 currently undergoing consultation).

ExQ1	Question to:	Question:

Circular 02/2013 requires that developers both accurately assess and then mitigate effects of a development before National Highways can resolve any objections to projects.

Paragraph 24 of the Circular states that '*Where appropriate, conditions may be agreed to offset any unacceptable impacts that may be identified through the assessment process*'.

Paragraph 27 then states '*Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, further capacity mitigation will not be sought*.'

The converse is therefore also true. If network capacity is not sufficient then mitigation would be sought by the applicant and this is reflected at paragraph 34, which states: '*Where insufficient capacity exists to provide for overall forecast demand at the time of opening, the impact of the development will be mitigated to ensure that at that time, the strategic road network is able to accommodate existing development generated traffic*'.

Paragraphs 28-32 consider opportunities to manage down demand.

This general approach has been employed by NH on many developments affecting the SRN and so should be adopted by the applicant, where its own development affects the LRN and local communities.

Updates to guidance reflect need to consider mitigation

Circular 01/2022 proposes to update Circular 02/2013 and introduces consideration of decarbonisation (e.g. paragraph 6), climate management and mode shift to bring about increased connectivity in communities (e.g. paragraphs 11-17 and 19).

The guidance is provided to assist plan making and allow for sustainable development which protects, inter alia, the SRN. At paragraph 34 of the draft Circular it is stated that with regards to plan making '*evidence should provide a means of demonstrating to the examining inspector, development industry and local communities that planned growth is deliverable and that the funding, partners and relevant processes are in place to enable the delivery of infrastructure; or that there is a realistic prospect that longer term investment can be secured within the timescales envisaged*'.

ExQ1	Question to:	Question:

Inconsistent approach by NH to impacts

The current and proposed Circulars therefore set out National Highway's approach to managing impacts on its network from third party development. It seems only appropriate that the applicant adopts the same rigour and approach to managing impacts from development (roads) that it proposes on other networks, e.g. Thurrock's network and it is fundamental that this approach includes not only robust assessment of impacts but also secured funding to resolve identified impacts.

Environmental impacts mitigated but not traffic impacts

The Council notes the inconsistency in the applicant's position that environmental impacts should be monitored and mitigated but traffic impacts do not need to be treated in the same way. The Council considers that traffic impacts are a very important consideration and need to be forecast, assessed and mitigated.

The example of Silvertown Tunnel

As described at ISH4, Silvertown Tunnel provides an excellent example of a large scheme consented through the DCO process which has a comprehensive monitoring and mitigation strategy. The Council considers that Silvertown Tunnel provides a strong foundation for similar arrangements for LTC and the Council will work with the Applicant and other Interested Parties in considering a mutually acceptable mechanism to secure the mitigation of impacts. Further details on the Silvertown Tunnel type approach are set out in ISH4 written submissions.

Summary

The Applicant's approach to monitoring and mitigating wider impacts is not acceptable to the Council as it would increase time and cost for the Council and there would be no certainty around funding of identified schemes to mitigate impacts of LTC. The transformational nature of LTC means that other NH DCOs which have provided additional capacity to an existing alignment or junction are not relevant. More relevant are the arrangements for the Silvertown Tunnel, which like LTC crosses the River Thames. As part of assessing impacts the Council considers it important to reiterate that the A13/A1089/Orsett Cock junction is a fundamental part of LTC and mitigation of impacts at this junction need further analysis and resolution, but should not be part of any consideration in the WNIMMP.

ExQ1	Question to:	Question:
4.2 Operational Traffic		
Q4.3.7	Thurrock Council	**Balanced Assessment on Thurrock's Network** Thurrock's representations including its Local Impact Report (LIR) are focused almost exclusively on the adverse effects of LTC on its road network when in reality many existing locations which currently experience severe congestion will see significant benefits to journey times. Has **Thurrock Council** carried an overall assessment of the effect of LTC on its network which weighs the positive and negative effects in the balance? If not, please give reasons why.

Q4.3.7 Thurrock Council Response

Introduction

The Council has made a preliminary assessment of the effect of LTC on its network which weighs the positive and negative effects in the balance. However, this assessment has been severely constrained by the ongoing refusal of the applicant to share their detailed operational modelling of junctions in Thurrock with the Council. The refusal of the applicant to share other information, e.g. assessment of reliability and wider economic impact assessment, also limits the ability of the Council to reach a firm conclusion on this issue.

Lack of modelling information

As discussed at the ISH3 and ISH4 Hearings, the A13/A1089/Orsett Cock junction is an integral part of LTC scheme design because without this junction, LTC cannot function. As such, it is not appropriate to dismiss the significant impacts at this junction, as identified in the limited microsimulation modelling made available by the applicant, by stating that overall within Thurrock journey time benefits outweigh disbenefits. Further modelling work has been repeatedly requested from the applicant to help the Council understand these impacts.

The applicant has refused to release the full LTAM model and has only provided a Cordon Model covering the Borough only. This means that the Council can only analyse the benefits to trips which have both an origin and destination in Thurrock (because full trip information has not been provided for trips which cross the cordon).

ExQ1	Question to:	Question:

LTAM does not reflect the queuing and delay modelled by VISSIM

Paragraphs 14.1.25 to 14.1.50 and Section 3 of Appendix E of the 'Council's Comments on Applicants Submissions at Deadline 1 and 2' [REP3-212] summarise the Council's position with regards to the comparative analysis of LTAM and VISSIM set out by the applicant in the 'Localised Traffic Modelling' [REP1-187].

Although not yet agreed, the Council's comparison of the Orsett Cock VISSIM forecast model results with LTAM shows that there are clear differences, with the VISSIM model showing changes in journey times higher than in LTAM, thus reinforcing the long-stated view that LTAM as a strategic model, underestimates impacts. This is just one example and as the other junction models progress it may be that the same conclusion is reached.

The Council contends that LTAM underestimates local impacts and that, in accordance with TfL modelling guidance and industry best practice and in fact NH's approach on other DCOs, the VISSIM model parameters should be included in LTAM, so that the queueing and delay in VISSIM is better reflected in LTAM. This approach was discussed at ISH4 and is set out in more detail in the Post Event submission for ISH4.

The applicant contends that LTAM demonstrates that the journey time benefits outweigh the disbenefits in Thurrock. However, until the localised modelling is agreed for all of the Thurrock junctions identified in Figure 9.1 of the Council's LIR [REP1-281] and the agreed VISSIM model parameters are included in LTAM, so that LTAM better reflects the queuing and delay shown in the localised modelling, the Council cannot agree the LTAM journey time results.

There are significant outstanding issues with the Applicant's assessment of benefits and disbenefits

In addition, Section 7 of the LIR [REP1-281] set out the Council's position on the applicant's assessment of benefits and disbenefits and reaches the following conclusions:

- The applicant's traffic modelling shows that congestion levels will return to the existing levels at Dartford Crossing within five years of opening.
- The assumptions used to generate the reliability benefits have not been shared and so the Council cannot consider or scrutinise on the validity of the assumptions or results.
- There are sizable construction disbenefits, the majority of which are expected to fall on trips and users within/travelling through Thurrock. The Council has been unable to assess the distribution of these disbenefits within the district as this information has not been provided by the Applicant.
- The Council considers that the applicant is obliged to give Wider Economic Costs the same weight as wider economic benefits in its BCR analysis. It has failed to do this. The Applicant's analysis of lost/delayed growth is overly simplistic. They also fail to give any acknowledgment to Wider Economic Costs in their analysis of Level 3 wider economic effects. This means that the Council considers the analysis of Wider Economic Impacts to be incomplete and suggests further work is undertaken to establish and include any Wider Economic Costs.

ExQ1	Question to:	Question:

- The estimated margin of benefit of LTC is now so low, that even modest changes in the assumptions would wipe out the net benefit entirely. This would mean that the scheme would cost more than the benefits it could produce and could not be justified in terms of value for money. The sensitivity tests provided do not cover sufficient scenarios to fully understand the impacts of possible policy and economic futures.
- The scheme BCR is highly reliant on WEBs, more so than the Council is aware of than any other transport scheme (including HS2). WEBs are a nebulous and uncertain concept and quantified using old world economic models. Behaviours have changed markedly and the benefits are greatly exaggerated. If the labour markets/businesses either side of the River Thames need to become better connected then alternative mechanisms are available to provide this accessibility. Without the WEBs, the LTC BCR falls to well below 1.0. Irrespective, the applicant's calculations show that very few (5%) of the WEBs will flow to Thurrock. The Council's view is that the WEBs presented are an overestimate and misrepresent the case that would be considered acceptable if an independent assessment was undertaken.

Information required to enable Thurrock Council to understand and agree benefits and disbenefits

The Council cannot fully understand or agree the assessment of benefits and disbenefits until the following missing information is provided by the Applicant and subsequently reviewed and agreed by the Council:

- Applicant and the Council to progress agreement of the localised base and forecast junction models
- Applicant to incorporate the micro-simulation model parameters of the modelled junctions into LTAM to better reflect the queuing and delay identified in the microsimulation models
- Applicant to provide the assumptions used to generate reliability benefits
- Applicant to provide distribution of construction disbenefits within Thurrock
- Applicant to update its BCR assessment to give wider economic costs the same weight as wider economic benefits

What overall assessment of the effect of LTC on its network which weighs the positive and negative effects in the balance has the Council undertaken?

Despite the issues with the information provided by the applicant in terms of the impact of LTC on Thurrock, the Council has made a preliminary assessment of the effect of LTC on its network. This has been completed to aid the Examining Authority in its assessment of LTC.

The Council has made a detailed examination of the information provided in the DCO documents and Table A.34 of the Economic Appraisal Report (APP-526) states that 23% of average user benefits relating to LTC would occur in Thurrock. This is stated as being equivalent to £454m (2010 prices and values).

Approximately 70% of LTC is in Thurrock and 70% of the LTC scheme costs are approximately £2,184m (based on the CAPEX quoted in Table 1.3 of the same report which is the cost in 2010 prices and values). This shows that costs in Thurrock are 4-5 times the user benefits occurring in Thurrock.

ExQ1	Question to:	Question:
In addition, Thurrock is forecast to experience many other significant negative effects as presented in the Council's evidence including LTC taking 10% of Thurrock's land, 11% of its Green Belt and the wide range of other impacts associated with the six-year construction programme. In terms of wider economic benefits only 5.7% of these occur in Thurrock showing economic benefits occur away from the location of the majority of the scheme. The Council has examined the effect of LTC on the operation of Thurrock's road network. However, this analysis is significantly constrained by the applicant's continued withholding of the full LTAM model. This means that the Council's analysis can only be based on the cordon model information provided and therefore on trips which have both an origin and destination in Thurrock. This analysis shows that there is a balance of traffic impacts, with the western part of the network showing some benefits but the eastern part of the network (particularly around Orsett Cock and Manorway showing significant disbenefits). Provision of the full LTAM model would enable a more detailed assessment to be made, i.e. an assessment which looked at the impact of trips to and from Thurrock and not just trips within Thurrock. The Council therefore again requests the applicant to release the full LTAM model, so that the full impact of the scheme can be understood. The Council considers that this analysis of positive and negative effects shows that the LTC scheme as currently proposed provides significantly more negative effects than positive effects. **Summary** **The applicant's continued refusal to provide full modelling information for junctions in Thurrock, e.g. A13/A1089/Orsett Cock and its refusal to release the full LTAM model has limited the Council's ability to assess the impacts of LTC on its road network. The Council has though completed a preliminary analysis to aid the Examining Authority. This analysis shows that the disbenefits of LTC in Thurrock outweigh the costs and benefits.**		
4.3	**Scheme Design**	
4.4	**Walkers, Cyclists and Horse riders (WCH)**	
4.5	**Construction Traffic**	
Q4.6.4	Highway Authorities	**Realistic Extent of Construction Phase Mitigation** Notwithstanding the provisions of various control documents such as the Traffic

ExQ1	Question to:	Question:
		Management Plan (TMP), is it accepted that it would be impossible to prevent or mitigate all adverse effects on local communities during the construction phase? If that is not accepted, please provide details of what further measures could be incorporated into the oTMPfC at this stage.

Thurrock Council Response

Introduction

The Council has expressed its opinion in its LIR (REP1-281) in Section 15.6 on the suite of construction period Control Documents, including the CoCP/EMP, oTMPfC, FCTP, oMHP, and oSWMP. The construction period has a range of impacts from the movement of plant, materials and equipment to the movement of significant number of workers. Furthermore, the construction period will alter people's movement habits through route reassignment or changed travel times. The Control Documents therefore have to reflect the complexities of these changes and the constant changing of the broader picture.

The following highlights in detail the weaknesses and deficiencies in the current control documents associated with construction traffic management and indicates why the applicant cannot rely on that suite of documents, as they stand, to mitigate the effects of the construction period on the local communities and corridors. The control suite includes the Code of Construction Practice (CoCP) (REP1-158); the outline Traffic Management Plan for Construction (oTMPfC) (REP3-120); the Framework Construction Travel Plan(FCTP) (APP-546), the outline Materials Handling Plan (oMHP) (APP-338); and the outline Site Waste Management Plan (oSWMP) (APP-337). All of these documents must be co-ordinated as a single package and complement each other to become a single strong package. There are currently many deficiencies in each and a lack of co-ordination.
The applicant relies entirely on these control documents to mitigate its impacts on communities and local road network during the construction period. There are no physical proposals being put in place to manage and mitigate the effects and so the applicant's reliance is on managing processes and operations and hearts-and-minds initiatives. All of these would be contained in the control documents and so the Council must see that strength and commitment embedded in the documents, prior to any DCO grant otherwise the governance package during the works will be weak.

The oTMPfC focuses heavily on the management of the temporary traffic control measures and delays the consideration of the construction logistics planning until after any DCO grant (CoCP Section 6). The two topics must be aligned and given clear leadership by the applicant. Those processes then have to co-ordinate with the movement of people and plant, material and equipment, i.e. the FCTP, the oMHP and the oSWMP. The Council has set out its concerns with these documents through its LIR (REP1-281) and Deadline 3 (REP3-211) submissions and through evidence given at Issue Specific Hearings. The applicant must extend the commitments and requirements it includes within those documents to minimise impacts on the LRN and local communities; minimise environmental impacts; and, eradicate unsafe operations.

ExQ1	Question to:	Question:
		The Council's opinion on each of those documents is that the applicant has not provided sufficient leadership, guidance, co-ordination and control within those frameworks and so does not secure as much construction period mitigation as could be achieved. The applicant should use the opportunity of this 'Pathfinder' project to realise a legacy from the construction process, as well as seeking to mitigate impacts. The project will disrupt and impact local communities and transport networks and users for at least six years, excluding any project over-runs and excluding the possible 8-year spectre of the project hanging over those communities between any DCO grant and its expiration date. These are not short-term impacts and therefore require rigour in their management and flexibility to react to changes in the construction programme, the construction phasing and processes, changes in communities and the transport network. Construction techniques are adapting rapidly with the adoption of autonomation and data use, environmentally sound methods and machinery, and increases in safety and risk mitigation. For that reason, the Control Documents need to include flexibility and to derive agreed detail documents that are agile to the market/industry changes. However, the documents must set a robust framework from which to develop the management and mitigation processes to be used during the construction period. The Council acknowledges that there will be some unresolved adverse effects, but it is its intention that through emphasising to the applicant during the pre-application, pre-Examination and Examination periods to establish as much robustness in the construction period governance, monitoring, leadership and mitigation as is practicable. The applicant has consistently proposed to allow its contractors excessive flexibility and limited control. The documents currently leave substantial decisions and recommendations to be taken by the appointed contractors. The robustness of control documents has developed substantially during the history of NSIP delivery including comprehensive management processes being developed for other local regional NSIPs, such as Tideway, Silvertown Tunnel, Riverside Energy Project and Sizewell C. The Council has achieved the adoption of a robust monitoring process, but that now needs to be married to a control and compliance strategy where contractors are aware of the routeing requirements to compounds and the consequences of not adhering to those. The applicant has refused to provide caps and profiles of movements to and from the various compounds and so there can be no control on those compounds. There are differences between the documents with regards to the management of workers and their movements to and from their places of work. The applicant relies heavily on the adoption of shuttle bus services around the project. Within Thurrock, that proposal is flawed due to the excessive transfer distances and times to the compounds; the absence of a suitable set-down and pick-up point at Grays Station and the absence of a strategic approach to accessing those compounds from Grays Station. The station would therefore not suit access to and egress from the compounds. It therefore cannot be relied on to mitigate the effects of moving people to and from the compounds. Furthermore, the applicant notes in its FCTP (APP-546) (that it will not advocate walking and cycling to the compounds where there are no footways or routes are unlit. The Council

ExQ1	Question to:	Question:

has understood that view, but notes that it excludes nearly all compounds from active travel. Again, the applicant cannot rely on active travel as a means to mitigate workforce travel impacts.

The suite of Control Documents will become more robust once the loose wording such as 'investigate', 'explore' and 'consider' are removed and the proposed initiatives are re-examined for their deliverability and compliance management.

The applicant proposes to manage all of the construction period engagement through a series of Traffic Management Fora. The Council has previously expressed that the fora are not adequately constituted and the method of resolving disputes excludes stakeholders from influencing the final decisions, i.e. they are not included on the Joint Operations Forum (JOF).

The system of construction fora has been tried and tested across many projects, but its success relies on the clear constitution, collaboration between parties and trust. These are not covered well currently and mechanisms to improve the performance of the TMF are set out in detail later in this response at the section on the need for strengthening of the oTMPfC.

At various times the Council has raised concern regarding the impact that construction will have upon existing and future users of public transport and WCH users. Delay and impact will prevent or dissuade people from using alternative modes. This seems to have been completely ignored by the applicant. There is no strategy to ensure users are informed of potential delays and how alternatives will still be made available during construction. Post –construction (when users have endured years of delay) there is no strategy to get them back onto bus, bike or foot. The expectation is that the LA will handle this and struggle to get users back onto the network.

Detailed Commentary on the Weaknesses and Absence of Co-ordination across the Control Document Suite

The following sections indicate the changes that should be adopted by the applicant to strengthen the frameworks to be the basis from which to develop the much more robust detailed post-consent governance, control and enforcement documents.

In this response 'Contractors' includes all Main Works Contractors and Utilities contractors.

CoCP (REP1-158)

At the most basic level, paragraphs 1.4.2 and 2.1.1 should be reworded to align with Requirement 4 of the dDCO. The wording in the CoCP must be clear that a series of co-ordinated EMP2s will be prepared in preparation for the specific aspects of work and not a single EMP2 as implied at 1.4.2 and 2.1.1. That will allow sections of the authorised development to proceed prior to an approved EMP2 for an unrelated section of the authorised works. The CoCP should set out, however, that works which are related in geography, programme or process should be in accordance with previously agreed EMP2s unless specifically justified otherwise. The CoCP does not show how these EMP2s will be co-ordinated and simply states at paragraph 2.3.1. that each contractor will develop its own EMP2 for its part of the work. The applicant does not set out how that work and the EMP2s will be broken down, e.g. each Main Works Contractor and Utilities Contractors. That breakdown must be set out in the CoCP.

ExQ1	Question to:	Question:
Paragraph 2.3.9 states that each EMP2 must set out the construction phasing plans which it covers. The CoCP must be updated, however, to require that that planning shows how it aligns with the construction phasing that has been tested during the DCO with reference to the 11 construction phases set out by the applicant and tested through its construction period traffic modelling, which must be updated to correct assumptions that have been wrongly made for workforce travel during those phases – see the review of the FCTP below. It is noted that the Council is a consultee to the EMP2 prior to submission for approval by the SoS, but there is no control on when EMP2s should be updated during the construction period. This should be clearly set out and should include: • Programme changes greater than 1 month from that included in the previously approved EMP2; • Process changes that would materially affect the assessment within the ES (as indicated at section 2.8 of the CoCP) and TA and differ to the 11 construction phases set out by NH in its outline plans and tested in its construction period traffic modelling; and • Where any mitigation is to substantively change. Those updated EMP2s would be the subject of further consultation with the Council as LHA and LPA. The mechanism for update should be stated as being in accordance with DCO Schedule 2, Part 2. Section 2.2.2 of the CoCP should state that the Council would also be a consultee to the development of the applicant's and Contractors' Environmental Management Systems as that would indicate the mechanisms for assuring and governing the EMP2 mechanisms and for any dispute resolution. This is equally important as the EMP2s will include the developed detailed Materials Handling Plans (MHPs) and the Site Waste Management Plans (SWMPs) – as stated at paragraph 2.3.4 of the CoCP. Furthermore, the CoCP should set out how co-ordination and alignment will be achieved for the wider control plan documents, referred to at paragraph 2.4.2 of the CoCP, including the Site Specific Construction Travel Plans (SSCTPs, otherwise referred to as SSTP in the FCTP) and the Traffic Management Plans (TMPs). It is noted at paragraph 2.7.2 that compliance requirements will be included in the contracts; however, the Council will not be party to those agreements and would not be able to appraise the consent document submissions without understanding the basis for those compliance requirements. Paragraph 2.7.4 and 4.2.5 delay setting governance roles until the EMP2 but provides a broad outline of the role of the applicant's client team function at Table 4.1. The CoCP must be changed to set the core governance panel to be adopted into the EMP2s and how each of the designated roles will co-ordinate across the wider governance of the control processes and between the separate contracts of the Project. That clarity should include the applicant's client Highways Environmental Manager's and how that relates in hierarchy and function to the Traffic Managers role (as set in the oTMPfC) and the Travel Plan Manager (set in the FCTP). Equivalent roles must be created and maintained by the Contractors generating EMP2s. Where sub-contractors have greater than 25 personnel engaged in any one contract then those companies will also create and maintain a sub-contractors' equivalent role to cover their aspects of the EMP2, TMPs and SSCTPs. These roles must be adopted into the Utilities companies and their sub-contractors. Paragraph 2.7.5 must also be strengthened to set the governance timeframes to be adopted as a co-ordinated package across the project. This will clarify for each EMP2 author the structure and commitment they are to adopt. This should include monthly reporting to align with the Traffic Management Forum using the Contractor's Action Plan stipulated at paragraph 2.7.7. The Council is not represented at the Joint Operating Form		

ExQ1	Question to:	Question:
		(JOF) and so will not currently be party to compliance and monitoring information associated with the EMP2s. The CoCP must be changed to require feedback to the TMFs by the Traffic Manager and for the appropriate flow of information to the JOF from the TMFs. This flow and exchange of information must be written into the terms of reference for each forum as the coverage of each must allow the overview and guidance of the Council to co-ordinate with wider network management and co-ordination with other projects. Further to confirming the coverage of Preliminary Works at Section 3, the exclusion of site enabling and demobilisation and decommissioning for all compounds should be explicitly excluded from Preliminary Works and therefore the subject of EMP2s and the other associated control documents. As part of its Communications and Engagement Strategy (CES) and Engagement and Communications Plans (ECPs), outlined at Section 5 of the CoCP, the applicant and its Contractors should commit to providing the Council with a programme for developing the control documentation. That will allow the Council to mobilise to provide its input and feedback in accordance with the DCO Schedule 2. This should be provided no later than two months after commencing Preliminary Works or two months prior to site enabling commences, whichever is the sooner. That programme of consents discharge should be kept up to date on a monthly basis until all parties agree it is no longer relevant. In addition to responding to complaints and feedback on the project helpline, as set out at Section 5.2.7 to 5.2.10, the applicant and its Contractors must provide a suitably redacted report of comments from the public and wider stakeholders to each TMF for review alongside the considerations of general performance and compliance. The CoCP must extend its definition of the preparation of Construction Logistics Planning (CLP) to include the provision of works profiling for materials, plant and equipment movements and the challenges that are to be addressed for each compound. The applicant must set out that the CLPs will be an integral part of the EMP2 and directly aligned to and maintained with the TMPs, MHPs, SWMPs and SSCTPs. By being a defined subset of the EMP2 the LHA will be a consultee to the CLPs and not, as stated at Section 6.1.8, which proposes they are approved by the applicant in isolation. It is essential that the CLPs are reviewed by the LHA alongside the other control documents. As part their regular planning, the Contractors and their sub-contractors must provide to the LHA a weekly look ahead for all works either within compound or for works outside those compounds including utilities works. That will allow the LHA to understand the anticipated effects during the coming week and with a longer look ahead provided through the phasing in the CLPs. The CoCP must stipulate that Contractors must set out in their CLPs how they have taken opportunities to minimise network impacts; to restate that they commit to using the agreed access routeing; and, that they are engaging with their supply chain to ensure wider compliance with the project commitments. Reporting on innovation and proactive minimisation of impacts should be provided at each TMF. CoCP Section 6 on CLP states that Contractors and their suppliers/hauliers must meet CLOCS, FORS Silver and Driving for Better Business or equivalent. The document must also stipulate that all Contractors, hauliers and suppliers must meet these requirements by the third visit to any part of the project or sooner. Non-compliance will result in removal from the project.

ExQ1	Question to:	Question:

Sections 6.5 and 6.6 covers good housekeeping. The CoCP should be updated to include the management of parking in and around the compounds and other working areas. There should be no project vehicles waiting outside the confines of the works and where complaints are received and founded regarding project related parking within the adjacent communities these must be actively researched and remediated, especially where that parking is illegal, inconsiderate and / or causing undue parking stress in local roads. The resolution of the reported or observed problems must be carried out in collaboration with the LHA.

oTMPfC (REP3-120)

The following amendments should made to the oTMPfC to align with and complement the wider control document suite.

The document should set out the full constitution of the TMF and stipulate that the client Traffic Manager (TM) must have a minimum specification of a Chartered Engineer or equivalent to give the gravitas to the role. Similarly, the Contractor's TM must be equally as competent and subcontractor with 25 staff or more must provide a suitably competent TM. The LHA representative on the TMF must be empowered within the constitution to be able to require resolution of issues to be escalated to the JOF and the ability to then represent that issue at the JOF.

The oTMPfC must specific clearly that access by construction related traffic and workforce traffic will use the routes to the compounds shown within the access plans and that the use of those routes will not exceed the peak period modelling.

Paragraph 1.1.6 needs to be amended to align with the DCO, i.e. '*No part of the authorised development is to commence until* ***a traffic management plan for the construction of that part*****.'** The current wording does not have that specification.

Paragraph 1.1.7 must set out how the TMPs will be co-ordinated across the project to maximise management and mitigation of the effects. The current document does not describe that.

It must be specified within the oTMPfC that road closures and temporary traffic management must substantially accord with the programmed periods set out in the approved TMP for that part of the project which must be broadly in line with the oTMPfC. The oTMPfC must further state that Contractors must justify to the TMF any extensions to programme or coverage no less than two weeks prior to the required extension.

At paragraph 2.1.2 and other points in the document the text should be adjusted to show that there will be a series of TMPs all of which will need to be kept up to date in accordance with the specifications provided within the revised CoCP (i.e. to reflect programme slippage; phase changes, process changes.). The oTMPfC must also state that the TMPs are owned by the Contractors but overseen and co-ordinated by NH Traffic Manager.

Paragraph 2.3.1 must explicitly confirm that the TMPs must include enabling, site establishment and demobilisation and commissioning works for all compounds, working areas and new infrastructure.

ExQ1	Question to:	Question:
Within Table 2.2: • Extend the text to state that the NH and its Contractors must appoint **and maintain** Traffic Managers throughout the mobilisation, construction, demobilisation and commissioning periods. This requirement should also be added to paragraph 3.3.14. • State that the TMFs must be established at least three months before construction to allow for the collaborative drafting of the TMPs prior to submission for agreement with the local authorities. • The applicant must confirm how construction HGV bans will be introduced and enforced within the Order Limits and on routes outside of its control. • In the 'West Tilbury' section replace 'avoid Gunn Hill…' with '**exclude** Gunn Hill….' The OTMPfC must stipulate at paragraph 2.4.8 the base line that is to be monitored, measured, managed and mitigated. There is currently no base line other than stated at Paragraph 2.4.22 that monitoring will commence a year before start of construction – that period must be set as the start of first construction within the northern contracts. If the baseline is to be established from observed background flows prior to construction plus an up-lift for construction activities then the contractor must reference that position relative to the Transport Assessment and the construction period modelling. The construction period modelling must be corrected prior to the end of the Examination to reflect the accurate assignment of worker traffic to the agreed routes. That revised modelling will then be updated at the time of preparing the TMPs to reflect the changes in programme, phasing and alignment across the contracts. The mechanism for apportioning ownership of the monitoring and effects across the contract must be set out in the oTMPfC. The terms of reference for the TMF / TMFs must stipulate how concerns will be considered and resolved by the responsible contractor/s and how escalated unresolved items will be determined and reported back to the TMF. It is insufficient to leave the determination of junction modelling to the contractors to decide – as is suggested at paragraph 2.4.20 of the oTMPfC. Rather than leaving the determination of which location could be modelled, as at paragraph 2.4.20, the oTMPfC must stipulate the junctions to be modelled when preparing the TMPs that must include but not necessarily be limited to: • A13/Sifford interchange and adjacent North Road / Stifford Clays junction • A126 Marshfoot Road priority junction leading to A1089 link road • A13 / Orsett Cock • A1089 / Asda Roundabout • A1013 junction with Gammonfields Way • A1013 junction with Baker Street • The Cross Keys junction The Contractor must then be required to mitigate forecast impacts.		

ExQ1	Question to:	Question:

Within Table 2.3 'Local business and residents' the applicant must add that Contractors must ensure no workforce parking within communities around the compounds and act to resolve problems that arise through direct and/or indirect engagement with those workers causing the disturbance.

Paragraph 3.1.4 must be adjusted to state that the Council can impose a moratorium in the instance of an emergency.

In paragraph 3.2.1 the text should be adjusted to note that the Council will only be able to manage its network outwith the Order Limits during the works. As stipulated within the dDCO the ability to influence the management of its network within the Order Limits will be the duty of the applicant during the life of the DCO construction period.

The DLOA (supported by an improved Side Agreement or Protective Provisions) as referenced in Paragraph 3.2.2 must set out which body will manage the applications for permits by third parties for works within the Order Limits and where those works cross the Order Limits.

The role of the Traffic Manager set at 3.3.14 f must also be responsible for the assimilation, co-ordination, analysing, sharing and reporting the data to the TMF members.

The process table at Plate 3.3 must also show that updates to the TMPs can be requested by other members of the TMF, including the Council.

Paragraph 3.4.2 does not use the formal term of Abnormal Indivisible Load (AIL). There must not the opportunity to interpret this statement as allowing abnormal traffic movements, i.e. unusual volumes or types, outside of standard hours. The statement should also be corrected to state that it is the duty of the haulier to make the AIL Movement Order submissions.

The agreed Access Routes as set out at Section 4.1 must clearly include the restriction of access for workers and other construction related traffic. It should be noted within the oTMPfC that some routes identified for use to access the compounds lie outside the Order Limits and so would not be controlled by the DCO.

The modelling of construction traffic included in the DCO evidence has not used the controls on routeing that have been proposed, i.e. construction deliveries and workforce traffic has been allowed to freely assign across the LTAM cordon, which disguises the level of impact on the network. This does not allow for accurate assessment of impacts and does not permit robust monitoring during construction against the evidence.

The Council has repeatedly questioned the assumptions of access to the compounds and has been assured by the applicant that the use of the LRN would be minimised (as referenced in paragraph 4.1.2d) and that the LTAM strategic modelling has assigned construction traffic to the agreed routeing. Contrary to those assurances, inspection of the construction period models has shown that workforce traffic does not adhere to the agreed routes and, by way of example and in the instance of the North Portal compound, workers vehicles are assigned across a number of routes leading to access to the compound from Station Road having travelled through Linford and Chadwell St Mary. The route via Asda Roundabout

ExQ1	Question to:	Question:

and St Andrews Road is not used. The assertion made in the oTMPfC and the modelled effects are not accurate or aligned. This must be rectified and reflected through the evidence and updated oTMPfC and associated control documents.

The oTMPfC should include caps for the vehicle movements to each compound which align with the 11 modelled scenarios. This will allow compliance checking to be carried out and encourage innovation by the contractor. Where a variation from those profiles is required, the contractor will need to set out its justification and report that through the TMF and include that within the TMP.

Furthermore, paragraph 4.1.7d does not stipulate a frequency and quantum of use of the 'secondary' routes. A cap on their use must be assigned and agreed with the Council.

Table 4.1 states that Stifford Clays Road (East and West), Medebridge Road and the Mardyke compounds are to be accessed via the private Medebridge Road. This is contrary to statements made by the applicant and so modelling of the A13/North Stifford/North Road and Stifford Clays Road must be carried out to demonstrate the effects of those movements on that interchange.

It must be clarified how access to the Long Lane Compounds is to be achieved and maintained and the effect on the LRN at A1013. HGVs turning at that location will cause significant disruption to the operation and safety of A1013, particularly reflecting the proposals for new traffic signals in the vicinity.

In defining the roles to be recruited and maintained as part of the projects traffic management resources, the oTMPfC must specify the accreditation and training requirements for on-site traffic management staff including Traffic Marshals, Banksmen, and gate-line staff. Those roles must be each given clear specification to their duties and lines of reporting. The accreditation of Traffic Management team leaders must be specified to LANTRA or equivalent minima for the duties to be undertaken and accord with the roles and responsibilities set out in Safety at Street Works and Road Works – A Code of Practice (the Red Book). The gate line and traffic management teams must be empowered and, through the Contractors' Traffic Managers, enforce the requirements of the approved TMPs. That function could include over-ruling worksite requests where those requests do not adhere to the TMP – such as rejecting un-booked and non-compliant deliveries. A safe mechanism for rejecting vehicles must be set out within the oTMPfC for each compound.

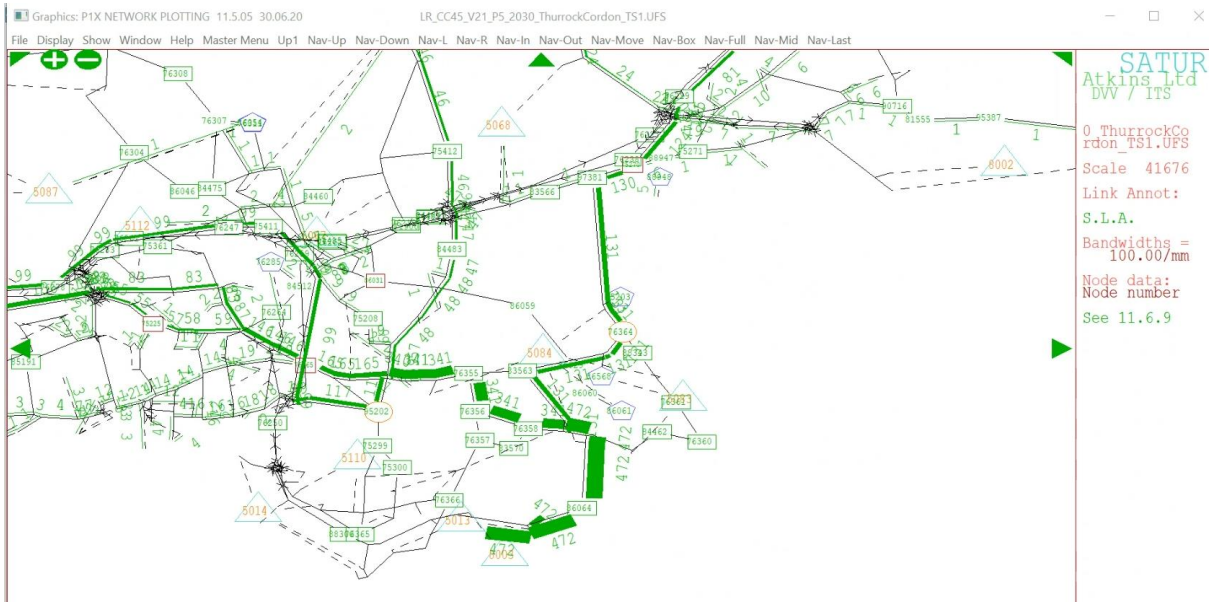
The mechanisms for informing the supply change of the EMP2, TMP and CLP requirements must be set out in the oTMPfC, such that Contractors adopt that into the TMPs and co-ordinate that information across contracts.

FCTP (APP-546)

Paragraph 2.1.3 of the FCTP states the '*aim of the FCTP is to minimise adverse local disruption or traffic on the highway network from worker and visitor travel.....by reducing the number of single-occupancy vehicle trips and encouraging the take up of sustainable and active modes of travel*.' The Council contends that the FCTP does not provide a robust framework to achieve that aim. It is not sufficient for the applicant to propose weak 'obligations', as at paragraph 3.2.4, that simply require the development and monitoring of the SSTPs, which are a Requirement of the DCO

ExQ1	Question to:	Question:
anyway. The obligations should be set so that the Contractors propose and provide realistic and realisable mechanisms to mitigate the impacts of workforce travel, as forecast through the updated construction phase modelling, such that communities do not experience severance and harm from workforce travel. At paragraphs 1.1.10 and 4.2.1g the applicant implies that the FCTP would be developed and updated post consent. The strengthened framework must be set by the end of the Examination, such that it would then be used in an un-adapted way to inform the development of SSTPs by contractors. In turn the FCTP must stipulate that SSTPs must be applied to all Contractors and sub-contractors and consultant teams with greater than 25 people engaged on-site (including in compound offices) on the project. Those SSTPs should be regularly reviewed and updated. Paragraph 4.2.1g proposes a review period of monthly for the FCTP, however, that paragraph should be changed so that it applies to instead to the SSTPs. Section 9.3 then proposes funding for the FCTP, however, the FCTP is the framework and so any funding commitment should be for initiatives adopted by the resultant SSTPs, unless that cost is to be met by the Contractors. Before addressing the weaknesses of the FCTP, the applicant must correct its workforce traffic modelling. The modelling of workforce travel has not been carried out in line with the stated commitment for worker to adhere to defined routes and as such it is not possible for the applicant or its Contractors to assess the impacts that must be resolved. By way of example, the Select Link Analysis extract from the LTAM Thurrock Cordon for construction Phase 5 a.m. peak inbound workforce traffic at Figure 4.5.1 shows that workers are using local roads to access the North Portal Compound and not the access route designated through the Port of Tilbury. The modelling of effects must be revised and then reflected in the proposals to be incorporated into the FCTP to lead the Contractors in developer their SSTPs.		

Figure 4.5.1 - Construction Phase 5 a.m. peak inbound workforce traffic to North Portal Compound



Furthermore, the applicant must explain how it is to overcome the contradiction between apparently encouraging active travel to the compounds, but recognising the concerns of access along routes that are deemed unsafe or unlit (FCTP paragraph 3.1.4a). Those criteria apply to the majority of compounds/site office in spite of the assertions made at Section 6.3 of the FCTP. In Table 6.2 the applicant apparently relying on use of the rural Mardyke path and other paths or routes themselves impacted by the works. The applicant can therefore not rely on walking and cycling as a means to mitigate the impacts of workforce travel on the road network.

The applicant also cannot rely on the proposal for shuttle buses as that process is flawed in that the timing and coverage from the selected Grays Station in Thurrock (FCTP paragraph 3.1.4c) does not meet the stated criteria for travel and transfer – paragraph 6.4.14 and 6.4.15 and within the Worker Accommodation Report.

Section 3 of the FCTP considers the broad aims and objectives to be taken into the SSTPs but does not include base targets from which the Contractors should build, instead it leaves the Contractors to select their own (paragraph 3.1.6c). Appropriate and stretching targets must be provided in the FCTP which build from the stated car mode shares within Table 5.3 with robust initiatives to achieve those.

Section 7 ‘Targets’ states that there are no targets set in the FCTP. If nothing more the FCTP should state that the Contractors must adopt as a maximum the percentage car mode shares within Table 5.3 for each compound at first occupation. That single occupancy car mode share should then be reduced annually by a further 5% as a proportion of the workforce employed at the compound at the time of monitoring. Where that target is met a stretched target should be proposed during reviews. Whilst Section 7.1.10 refers to monitoring surveys it does not stipulate when the

ExQ1	Question to:	Question:
baseline survey should be carried out. This should be set as within two months of establishing the workforce at a compound. The survey should be repeated every quarter for the first year and then six monthly thereafter. The FCTP indicates a short series of activities that the applicant proposes that Contractors might wish to adopt, however, there is no requirement for them to be adopted and those listed would be typically provided as part of welfare facilities or are ineffectual and bear little relevance to the impacts that would be created by workforce travel. There is no reason why the Tier 2 proposals at paragraph 8.2.6 are not required at all sites. Other initiatives need to be included, such as prioritising on-site parking on a needs basis and committing to providing incentivised access to public transport rather than stating 'exploration of' (paragraph 8.2.5d). The idea of the 'Worker responsibilities' stated at Section 4.5 is a good idea in principle, but it holds no weight as it simply suggests that workers 'think' about their options. There is no encouragement or incentivisation to reduce their impact. This weakness directly aligns with the over-provision of on-site parking at compounds. Parking has been set by the number of workers expected to be based at the compounds it has no reference to the accessibility of those compounds or the desire to minimise car-based travel. The applicant proposes no proactive or physical mitigation measures to enable safe, reliable and direct connectivity to its compounds by active travel, but proposes instead that such measures might be considered in due course (paragraphs 10.4.5 and 10.5.3). The review of accessibility to compounds should have been carried out prior to submission and not as an afterthought years into the construction process. There can be no certainty that such physical measures could be introduced as many corridors will be outside the Order Limits and could require land outside the public highway. The applicant must revisit the initiatives to be proposed through the FCTP as a minimum base from which Contractors can innovate and improve. If this process had been developed sooner the applicant could have developed a robust system based around well connected travel hubs, which could have even created a legacy post construction. This is unlikely to be possible without changes to the Order Limits. Plate 4.1 of the FCTP shows no linkage to the oTMPfC or the CoCP or the subsequent TMPs and EMP2. Neither is there a linkage between the Travel Plan Liaison Group and the Traffic Management Forum. The Travel Plan Manager must co-ordinate with the Traffic Manager such that the Travel Plan Liaison Group and TMF align and maximise the shared benefit – this must be stated in the FCTP. It is essential that those linkages are recognised and implemented. It is not adequate that the SSTPs are reported back to the JOF, as proposed at paragraph 4.2.3 and 4.2.4. The Council is not represented on that forum. The SSTPs should instead be reported to the TMFs. The action plan set at Table 9.1 is inappropriate as it states the start of the plan as 'One month within DCO grant' whether that is one month prior to or one month post, it should instead be linked to the appointment and mobilisation of the Contractors. The 'Project action plan' only includes reviews and reporting, etc., but does not include actions and implementation.		

ExQ1	Question to:	Question:
Critically also, the applicant must lead by example and commit to establishing its own robust Travel Plan for its staff which provides an exemplar for its Contractors to match or exceed. This will be informed by National Highways 'Home Safe and Well' Strategy, which is not currently referenced in the FCTP. **oMHP (APP-338) and oSWMP (APP-337)** The Council's opinion on the oMHP and the oSWMP is not in the detail of revisions and updates as per the other Control Documents. The position is not one of positivity, but entirely the opposite. The applicant has a single poorly structured commitment included within the oMHP, referred to as the Baseline Commitment (paragraph 6.2.9) to move bulk aggregates to the North Portal compound, which represents only 35% of bulk aggregates across the project. The applicant then states that it will request its tunnelling Contractor to '*engage with aggregate and materials suppliers*' (paragraph 6.2.11) to improve on the Baseline Commitment. This does not represent any incentivisation to improve on the Baseline Commitment and gives no certainty that any positive progress would be made to reduce the quantity of plant equipment and material to be moved by non-road transport to and from the entire project, not only the tunnelling aspects. The Council's justification for insisting on robustness around this matter is that the applicant has to rely on reducing the numbers of road movements in order to mitigate its effects on local communities and corridors. The applicant is also reliant on the performance of the road network for its construction processes, where it could increase resilience though the use of marine and rail transportation. Transferring movements from road to marine and rail must be a fundamental part of the applicant's construction period mitigation. Furthermore, increasing the use of marine and rail transportation leaves a positive legacy from the project by increasing the use of non-road transportation and demonstrating how those modes can enhance safety and reduce environmental impact. The Council accepts the broad principles set out in the applicant's oSWMP, however, that document does not reflect the complexities of the scheme's physical extent and duration of construction on the management of the wastes and excavated materials produced and the potential for this to create regulatory impact uncertainties. The Council recognises that refined detail will be developed by the Contractors as the project develops but the oSWMP should provide a robust basis for the development of the SWMP and a framework for tracking and recording the variations in the assumptions of wastes generated and their management throughout the scheme's lifetime. The approach to the use of non-road transport for NSIP projects (and other smaller projects) focused around riparian and or rail facilities has been grasped elsewhere to significantly positive effect. The applicant must adopt this same approach of positive pressure and rigour.		

ExQ1	Question to:	Question:
Summary: **The applicant relies comprehensively on the mechanisms adopted through the Control Documents to manage and mitigate the effects on local communities and networks during the construction period. The current documents are not sufficiently robust and refined and the Council has no certainty that the governance mechanisms and initiatives would mitigate the construction impacts.** **The Council therefore requires the Control Documents to be revisited and strengthened.** **Details of amendments are set out in this response above in some considerable detail.**		
4.6	**Road Safety**	
5.	**Air quality**	
5.1	**Effects on Human Receptors**	
5.2	**Effects on Ecological Receptors and Designated Habitats**	
6.	**Geology and soils**	
6.1	**Contamination**	
7.	**Tunnelling considerations**	
Questions relating to tunnelling are due to be raised orally at Issue Specific Hearing 5 (ISH5) on 5 September 2023. The ExA has no further questions on this issue at the present time.		
ExQ1	**Question to:**	**Question:**
8.	**Waste and Materials**	
8.1	**Waste and materials: General**	
Q8.1.2	Thurrock Council	**Excess Excavated Materials** With particular regard to excavated material associated with the northern tunnel portal construction compound, please indicate if/ how you consider that the applicant's strategy for handling excess waste is adequate or otherwise? What measures do you consider should be secured within a DCO to ensure any

ExQ1	Question to:	Question:
		excess excavated materials, i.e. those not re-used within the Order Limits) is handled appropriately?

Thurrock Council Response

Introduction

The management of the large amount of Excess Excavated Materials is an important consideration for the Council.

Inadequate and insufficient arrangements for management of excavated materials

The Council does not consider that the measures within the DCO for the management of the excavated materials are adequate or sufficient.

In relation to the specific management of materials and wastes from the North Portal:

- The location of the northern tunnel portal means that the excavations will impact on existing **landfilled waste materials therefore the excavated material will include material classified as a waste with potential contaminants and hazards.**
- The applicant has not undertaken sufficient intrusive investigations to enable them to robustly identify the potential contaminants present within the waste that will need to be excavated. The need for additional investigation is acknowledged by the Applicant (**Appendix 10.11 – Remediation Options Appraisal and Outline Remediation Strategy para 6.1.1** (APP-434**)**), however, there is no detail on what will be undertaken and GS001 does not require engagement and agreement with the LPA. The Council therefore requires the REAC commitments to be reworded and for additional commitments to ensure LPA engagement and agreement to all further ground conditions work including provision of a written scheme of investigation, ground investigation reports and assessments, remedial strategies and verification.
- Until the construction of the north portal has been completed it is unlikely that the excavated wastes will be able to be placed in their final positions. This means the waste will need temporary storage prior to placement but this has not been addressed by NH.
- As the material is waste the excavation, storage and placement has the potential to generate environmental impacts and the work should be undertaken under an environmental permit.

The quanta of these material is currently only estimated and so the mechanisms must be secured within the DCO Control documents regarding the way in which that material is excavated, handled, stored and moved to and from site.

The outline Materials Handling Plan (APP-338 Table 7.1) and the Excavated Materials Assessment (APP-435) indicate estimates of material to be generated by the project across the contracts and how that material would be used within the project. It does not commit to those estimates and so there is no mechanism to ensure that the contractors do not fundamentally change their approaches and export large quantities of material by road where that material is not suitable and therefore import significant quantities of material to replace that exported amount.

ExQ1	Question to:	Question:
Commitments must be included within the DCO and Control Documents to provide a suitably tight Rochdale Envelope in which the contractors must operate. This may be best achieved through amending REAC MW011, so that the commitment is made in terms of a maximum quantity of excavated material exported from site rather than a % of the total arisings. **Summary** **The Council does not consider that the measures within the DCO for the management of the excavated materials are adequate or sufficient.**		
Q8.1.3	Applicant and Thurrock Council	**Waste Quantities** Please provide an update on the preparation of the technical note being prepared by the Applicant and any on-going discussions between the parties?
Thurrock Council Response **Introduction** The applicant has produced the Technical Note and it was issued at D2 (REP2-076). **Comments on Technical Note** The Technical Note provides the process that the applicant has followed in identifying the volumes of excavated materials generated, and used, within the Order Limits. Whilst the Technical Note does not provide specific modelling outputs the description of the process provides sufficient context to provide the Council with comfort on the figures contained within the oMHP and oSWMP for the excavated materials at the preliminary design stage. This data will need to be revisited and reported through the approved Material Handling Plan and Site Waste Management Plan, which must be developed in consultation with the Local Planning Authority and the Local Highway Authority. **Summary** **The Technical Note provides the Council with comfort on the figures contained within the oMHP and oSWMP for the excavated materials at the preliminary design stage. Further reviews of the data will be required during the further development of the scheme.**		

ExQ1	Question to:	Question:
Q8.1.4	LPAs	**Waste Management** Can the Local Authorities set out whether you consider: • The measures in the dDCO, specifically the commitments in the Register of Environmental Actions and Commitments (REAC) [REP1-157] (e.g. Commitment MW007) to adhere to the waste hierarchy, are adequate in terms of waste management? • If not, please identify what alterations or additions you would consider to be necessary?

Thurrock Council Response

Introduction

Commitments to the management of waste are an important aspect of the scheme given the potential for negative impacts on Thurrock residents.

Inadequate measures in the REAC

The Council does not consider that the measures within the REAC are adequate in terms of the waste management hierarchy. Within the DCO the Council considers that the commitments to the waste hierarchy should be better specified, either within the extension of the REAC or through appropriate commitments/specifications within the oSWMP.

The following points specifically highlight the lack of certainty and commitment to the hierarchy within the REAC:

- MW007 provides a general statement of compliance with the waste hierarchy, however, it only commits to complying with the waste hierarchy insofar as '**Preference would be given to appropriate reuse, recycling and/or recovery before disposal where feasible and permitted by the design**'. Preference being given where feasible and permitted by design is a passive position where there is no requirement to comply with the intended outcome and no requirement to demonstrate that the waste hierarchy has been considered.
- The targets within MW013 group reuse, recycling and recovery within a single target to be achieved which actively contradicts the aim of the waste hierarchy by treating every level of the hierarchy except reduction and disposal as a single action.

ExQ1	Question to:	Question:
• Furthermore, setting overarching weight-based targets within MW013 (70% min and 90% target) for non-hazardous excavated materials and non-hazardous C&D wastes does not adequately incentivise performance as these could be achieved through diversion of a small number of high-weight material streams. The Council believe that the DCO commitments to delivering the waste hierarchy can and should be improved through the strengthening of the following REAC commitments: • The Council believes a more robust commitment could be made within MW007 along the lines of *'All Reasonable Endeavours will be made to ensure that the Works comply with the waste hierarchy and that disposal of waste is reduced, where materials are recovered or disposed of it should be evidenced that no practicable alternative management route was available.'* • Within MW013 the Council believes that the applicant should set individual, material-level targets for re-use and recycling (combined with the additional MW007 drafting) would more effectively incentivise compliance with the waste hierarchy. **Summary** **The Council considers that the measures within the REAC for waste management are inadequate and that more robust commitments are required to ensure the Works comply with the waste hierarchy and that disposal of waste is reduced. The Council considers that targets should be set at an individual and material level to incentivise compliance with the waste hierarchy.**		
Q8.1.6	LPAs and Environment Agency	**Waste Management** Beyond the matters secured by the dDCO as currently drafted, and the consenting/ environmental permitting requirements that will apply, are there other matters in terms of waste management that you consider need to be clarified/secured?
Thurrock Council Response **Introduction** The Council considers there are several areas associated with waste management that need further clarification. **Lack of information in oSWMP** The oSWMP does not provide any indication of the expected activities to achieve the diversion from landfill (MW011) or reuse (MW013), including identifying whether any processing or sorting is expected to be undertaken within the waste compounds. The applicant should either amend the		

ExQ1	Question to:	Question:

drafting of MW011 and MW 013 as proposed within our responses to Q8.1.2 and Q8.1.4 or clarify their proposals within the oSWMP to providing greater detail.

The oSWMP does not provide any expectation on the requirement for monitoring waste arisings from the compounds to allow the contractor to comply with the requirements of paragraph 6.2.6.f. Furthermore, there is no specified requirement for how the information recorded for each load consigned under the requirements of paragraph 6.2.6 are recorded and reported to the applicant by the contractor to demonstrate compliance with MW011 & MW013. The applicant should clarify the required approach of the contractors to the monitoring and reporting of the waste generated/exported from the Order Limits within the drafting of the oSWMP.

Need for updates to oSWMP and oMHP

The applicant should amend the drafting of the oSWMP and oMHP to be cognisant of the temporal phasing of the works and the spatial distribution of the arisings as the duration and extent of the works are too extensive to be covered by a basic structure SWMP provided. The extended storage of excavated materials prior to placement or the movement of materials between Sites (as defined by the EA) has the potential to lead to the reclassification of this material as waste bringing a requirement to manage it in a different manner. The applicant must commit within the oMHP that the Excavated Material that is projected to be moved from the Roads North contract to the Tunnelling works contract that the material should be moved within the trace as soon as the Tilbury Viaduct is structurally complete to carry the associated loads. That will remove the movement of that material from the local road network.

The applicant should commit to placing all sites storing, processing or consigning waste under an environmental permit, by committing to doing so it will ensure that all activities will be subjected to monitoring and auditing by the Environment Agency, the use of alternative routes means that activities are self-regulating. Within their response to Thurrock's LIR (REP2-062 – REP2-066) the applicant stated that due to the quantities of waste being managed they expected that the sites would be managed under an environmental permit.

The applicant must require and incentive its contractors along the principles of the waste hierarchy and having exhausted 'remove' and 'reduce' that the contractors should minimise the movement of material and the distance carried for reuse within the project.

Summary

The Council considers that there is a lack of information in the oSWMP and that further amendments are required to help mitigate impacts and to incentivise its contractors.

ExQ1	Question to:	Question:
Q8.1.7	Applicant and LPAs	**Materials Handling** Please could the Parties provide comments on what, if any, further use of wharves close to the Order Limits for the delivery of materials, particularly aggregates, could be utilised? If so, how should the Outline Materials Handling Plan [APP-338] be updated?

Thurrock Council Response

Introduction

Wharves/jetties close to the Order Limits have the potential to be used for the delivery of material and particularly aggregates.

Missed opportunities to use wharves

The Council has engaged with the Port of London Authority (PLA) and the Port of Tilbury London Limited (PoTL). All three parties seek to minimise the use of the road network to move plant, materials and equipment for the project where that derives an equivalent reduction in road mileage travelled by those elements. That strategy is in part optimised by the maximisation of the use of riparian facilities. The Council has provided a comprehensive joint Technical Note between it and the PLA at Appendix C Annex 4 of its LIR (REP1-281) and has given evidence on this aspect at ISH5.

That joint response gave a substantial list of the types of material and equipment that should be investigated for movement by marine transport an that evidence should be provided as to why marine transport was not the favoured option. The applicant has consistently dismissed this point seeking to defer any thought to its contractors.

The Council cannot directly influence the use of wharves, piers and jetties, but strongly encourages their use as part of a strategy to minimise environmental effects; minimise the distance travelled by plant, materials and equipment; minimise road network impacts and remove safety impacts.

The Council has expressed its disappointment that the existing jetties at Tilbury have been removed from the Order Limits and the justification provided by the applicant is incorrect. The uses quoted by the applicant of being by the Tideway Tunnel and Silvertown Tunnel projects is incorrect as both projects will have completed their use of those jetties by the time tunnelling could commence on LTC – indeed they are already largely ended. The applicant has not sought to maximise the use of riparian facilities and instead merely requests that the contractors investigate opportunities, providing no apparent incentivisation to do so.

The oMHP includes a single commitment to import 80% of bulk aggregates to the North Portal works by marine transport, without stipulating what that quantum is by weight or volume. It then allows contractors to self-regulate under the ‘exceptions’ set in Section 6 of the oMHP. A Better-than-baseline is mentioned within the oMHP, but again this is not incentivised or required beyond ‘engagement’ with suppliers (oMHP paragraph 1.3.7 APP-338).

ExQ1	Question to:	Question:
oMHP must be updated The oMHP must be updated to provide the comprehensive review of where marine transport is the favoured and required means of transport for the project and if not to specify the reasoning. The oMHP must then be updated to include commitments that the contractors must adhere to (or exceed) and a process by which those commitments are monitored, measured and governed. The governance must include a rigorous analysis of any proposed road-based derogation operations. The contractors cannot be left to self-govern. **Summary** **The Council considers that wharves have great potential to support the delivery of materials and particularly aggregates to the LTC scheme. The Council considers that the applicant is missing opportunities to include wharves in its materials strategy and that its analysis is based on incorrect information concerning the use of wharves by the Tideway Tunnel and Silvertown Tunnel projects. The Council considers that the oMHP must be updated to include strong commitments to the use wharves.**		
Q8.1.9	LPAs and Environment Agency	**Monitoring Consultation/ Approval/ Timescales** Section 11.8 of ES Chapter 11 – Noise and Vibration [APP-149] deals with monitoring. Can you provide your views on: • The Applicant's strategy for waste and material management during construction? • The Applicant's strategy for waste and material management during the operational phase? • The Applicant's suggested approach to consultation and approval of these matters through the dDCO [REP2-004], as currently drafted, and the associated REAC within the CoCP [REP1-157]?
Thurrock Council Response **Introduction** The question posed by the Examining Authority refers to ES Chapter 11 – Noise and Vibration. ES Chapter 11 relates to Material Assets and Waste and as such the Council has responded on that topic.		

ExQ1	Question to:	Question:
Lack of a specification for waste measurements Section 8 does not set out a specification for how waste quantities should be recorded during the construction phase only that it should. It leaves uncertainty over whether material quantities could be recorded by volume or weight, where the classification is to take place (compound limits, Order Limits, receiving site, etc.), which leaves potential for DoC non-compliance. If weights are to be used and a weighbridge provided (this is not specified but would be considered good practice), there is no specification of a requirement for monitoring or calibration of the weighbridge throughout the works period. The applicant should revise the oSWMP to make their positions on these issues clear. Within the oSWMP there is a high-level specification of the information to be recorded (although this is statutory minimum to comply with DoC) and a suggestion that electronic delivery notes could be recorded, but no specification provided of how the applicant requires the information to be provided or evidenced. The scale of waste movements out of the Order Limits is comparable to a large-scale waste site where good practice would include live electronic recording of waste movements with immediate access to quantities as opposed to the quarterly reporting proposed within the oSWMP. The applicant should revise the oSWMP to make their positions on these issues clear. The approach for the monitoring (and management) of operational phase waste arisings is very limited to the extent that it is not possible to make comment on the applicability of the applicant's proposals. **Summary** **Arrangements for the measuring of waste quantities are inadequate and the oSWMP needs further refinement to ensure good practice is followed.**		
9.	**Noise and vibration**	
9.1	**Baseline**	
9.2	**Methodology**	
Q9.2.5	Applicant and Local Authorities	**Duration of Effects** ES Chapter 12 – Noise and Vibration [APP-150] utilises guidance in respect of the duration of an effect contained within the Design Manual for Roads and Bridges (DMRB), (i.e. 10 or more days in a consecutive 15 day period, or more than 15 days in a six-month period). • Please indicate how/ why you could be confident that the duration of effects would

ExQ1	Question to:	Question:
		not be greater than those predicted in the ES? • Please indicate if any measures would be necessary to monitor any exceedances and, if so, whether any associated reactive mitigation measures would be necessary?

Thurrock Council Response

Introduction

This question concerns the construction phase and potential effects on noise sensitive receptors. The first part of the question concerns the duration of effects and if LPA's agree with those predicted in the ES. The second part queries if monitoring is required and whether reactive mitigation measures are required for the construction phase.

Duration of Effects

The ES Chapter – Noise and Vibration (APP-150) references DMRB in paragraph 12.3.115 and states that construction noise and construction traffic noise shall constitute a significant effect where moderate or higher magnitude of impacts are occurring for a period of 10 or more days or night in any 15 consecutive days or nights, or a total number of days exceeding 40 in any consecutive months. The Council cannot comment on the duration of effects and will be led by the applicant confirming the timings of their construction activities.

Need for monitoring and mitigation

The Council would expect monitoring of exceedances and associated reactive mitigation measures to be in place. It is noted that REAC NV009 commits to noise and vibration monitoring during the construction phase and this is welcomed. However, the Council would like to understand how the project will ensure good effective two-way communication with local communities.

In the event of exceedances of noise limits during the construction phase, REAC NV015 states that these will be investigated by the contractor and mitigation put in place. However, in the event that construction techniques to develop the project that reduce noise are not possible, the Council would query what other mitigation measures will be employed to reduce the potential exceedances. The extent to which the mitigation is likely to be achievable in practice needs to be considered now by the applicant to minimise the risk of mitigation not being achievable and rectifying the impacts. As per guidance in BS 5228:1-2009 a1 2014 where all reasonable measures have been taken to reduce the noise levels, but levels are still such that widespread community disturbance or interference with activities or sleep is likely to occur additional provisions can be made. These include options for noise insulation to be provided to noise sensitive receptors effected or temporary re-housing. These options should be included in the REAC.

ExQ1	Question to:	Question:
Significant adverse effects have been identified relating to construction traffic in the years 2025 – 2029, with receptors subject to a moderate or more increase in noise levels in 2025 and in 2028. It is unclear from the DCO application what the construction traffic mitigation will be and what resulting noise impacts will be after mitigation. The Council expects additional assessments to be undertaken to determine the impacts with a mitigation scheme in place. If this is to entail a construction traffic management plan, then acoustic modelling with revised flows shall be presented to the Council to confirm the suitability of the mitigation measure. The Council welcomes the measures outlined in REAC NV001 and NV007, which state that best practicable measures will be applied. However, the Council also expects that low noise equipment is used wherever possible, alongside use of greener, cleaner equipment to help alleviate noise, but also other impacts such as air quality, and human health. A REAC measure specifically stating the use of low noise equipment alongside use of greener cleaner equipment will be utilised would be expected from the Council. **Summary** **The Council cannot comment on the duration of effects and will be led by the applicant confirming the timings of their construction activities.** **It is noted that monitoring is to be undertaken and this is welcomed. However, the council needs more information to be included in a REAC as to how the project will ensure good effective two-way communication.** **With regards to exceedances the Council would expect additional mitigation measures to be included in a REAC. Additional measures include noise insulation or temporary re-housing. The Council would also expect a REAC measure specifically stating the use of low noise equipment alongside use of greener cleaner equipment will be utilised.** **Construction traffic impacts remain a concern for the Council. The Council expects additional assessments to be undertaken to determine the impacts with a mitigation scheme in place. If this is to entail a construction traffic management plan, then acoustic modelling with revised flows shall be presented to the Council to confirm the suitability of the mitigation measure**		
9.3	**Construction**	
9.4	**Operation**	
Q9.4.5	All IPs	**Mitigation** ES Chapter 12 – Noise and Vibration [APP-150] contains tables with a column titled "Justification of significance conclusions". This includes mitigation secured through the robust implementation off Best Practicable Means

ExQ1	Question to:	Question:
		(BPM) to reduce noise levels below the Significant Observed Adverse Effect Level (SOAEL) with reference to a XXdB(A) figure. With regard to the mitigation methods proposed, do Ips agree that the figure indicated is achievable, if not please provide reasoning?

Thurrock Council Response

Introduction

The ES Chapter 12 – Noise and Vibration includes tables with a column titled 'Justification of significance conclusions' and includes mitigation secured through implementation of BPM. It is understood that this assessment is in regards to the potential for impacts from construction noise.

Need for additional assessments

Based on the information provided it is not possible to confirm that the noise levels will be reduced to below the SOAEL. Currently within the ES only final resulting noise levels are presented, but no detailed calculations/modelling inputs as to how these results have been derived. Provision of the following would allow a review to determine if resulting figures indicated in the ES are achievable:

- Acoustic modelling files;
- Location of plant;
- Height of source; and,
- Details on receivers including which façade/floor has been assessed

Whilst mitigation measures are proposed, these measures are very high level and non-specific. They include commentary such as up to 10 dB reduction in noise due to screening, up to 20 dB reduction in noise from static plant. However, there are no specific noise reduction calculations for specific receptors or account being taken of what façade/heights the receptors are. Subsequently, there is a risk that noise reduction levels being mentioned are not achievable.

The Council expects additional assessments to be provided for specific receptors to confirm how these mitigation measures will reduce noise levels to be below the SOAEL. The Council would want to see full calculation files or modelling files detailing:

- Plant source position;
- Plant source height,;
- Façade of receptor assessed;
- Height of receptor assessed;

ExQ1	Question to:	Question:
• Barrier/screening position; • Barrier screening height; • Barrier screening extent; and, • Resulting mitigation attenuation. **Summary** **Currently there is not enough information within the application to determine if mitigation is adequate to reduce noise levels to below the Significant Observed Adverse Effect Level.** **In order for the Council to confirm their position we would want to see full calculation files or modelling files. Currently within the ES only final resulting noise levels are presented, but no detailed calculations/modelling inputs as to how these results have been derived**		
9.5 Monitoring		
Q9.5.3	Local Authorities	**Monitoring Consultation/ Approval/ Timescales:** Section 12.8 of ES Chapter 12 – Noise and Vibration [APP-150] deals with monitoring. Can you provide your views on: • At what stage should the details for the nature/ form and locations for monitoring be settled (i.e. post consent or should a greater degree of detail/ expectations be secured within a DCO)? • The Applicant's approach to long term monitoring including considering deterioration? • Whether measures beyond those that would be secured under the REAC [REP1-157] (such as Commitment NV015) are necessary (for the preliminary works, construction and operational phases)?

ExQ1	Question to:	Question:

Thurrock Council Response

Introduction

The applicant has committed to noise and vibration monitoring in NV009 at locations as identified in consultation with relevant local planning authorities. These details can be agreed with Thurrock Council post consent.

Lack of information in the REAC

The applicant has not provided details within a REAC on the specifics of the proposed on-going maintenance relating to acoustic barriers and the low noise road surface. The Council expects that such details should include a programme of when maintenance checks will occur and a commitment to restore mitigation if required so that the adverse impacts detailed in the chapter are not increased in magnitude. The Council would want a REAC which specifically covers this so that the DCO commits to maintenance checks and restoration of noise barriers/low noise road surface as required. Clearly though, it is vital to understand who is responsible for the road in each case, i.e. LHA, National Highways or private.

With regards to additional measures, whilst the REAC NV015 states that exceedances during the construction phase will be investigated by the contractor, the Council has reservations on what this will entail in practice. The Council would firstly want to see a commitment that noise and vibration monitoring would be shared with LPA's, so that the Council has real time data and knowledge of when exceedances occur. This should be set out in REAC NV009.

There are currently no timescales set out in the REAC of when investigations into exceedances will occur. A time period should be set out in the REAC NV015. Within the REAC NV015 it is stated that best practice measures will be employed to minimise noise. However, in the event that construction techniques to develop the project that reduce noise are not possible, the Council would query what other mitigation measures will be employed to reduce the potential exceedances.

The extent to which the mitigation is likely to be achievable in practice needs to be considered now to minimise the risk of mitigation not being achievable and rectifying the impacts. As per guidance in BS 5228:1-2009 A1 2014 where all reasonable measures have been taken to reduce the noise levels, but levels are still such that widespread community disturbance or interference with activities or sleep is likely to occur additional provisions can be made. These include options for noise insulation to be provided to noise sensitive receptors effected or temporary re-housing. These options should be included in the REAC.

Summary

The REAC provided by the applicant lacks information related to the on-going maintenance of acoustic barriers and the low noise road surface. The REAC needs to be updated to reflect this requirement and to include further details concerning sharing of information with the Council, the approach to the investigation of exceedances and options for noise insultation for noise sensitive receptors.

ExQ1	Question to:	Question:
10.	**Road drainage, water environment and flooding**	
10.1	**Consultation**	
Q10.1.1	Applicant LLFAs Internal Drainage Boards (IDB)	**Consultation** Appendix 14.2 – Water Features Survey Factual Report (1 of 2) [APP-454] paragraph 1.1.1 suggests that the extent of surveys were agreed with the Environment Agency. Were other statutory bodies consulted and if not, why not? What difference would be made to the survey limits if other Flood Risk Management Authorities were consulted? And consequently, what difference if any would be made to proposed development?

Thurrock Council Response

Introduction

The Water Features Survey is intended to capture the baseline characteristics of surface water and groundwater features. The Water Features Survey Factual Report [APP-454] and [APP-455] was produced in October 2022 and is included as Appendix 14.2 of the Environmental Statement.

Lack of Study north of the River Thames

The report is clear that the extents of the Survey were agreed with the Environment Agency. Others consulted included the Internal Drainage Board, landowners, the RSPB and Natural England, as follows:

- Appendix 14.2 – Water Features Survey Factual Report (1 of 2) [APP-454] paragraph 1.1.2 and 1.2.6 states that landowners were consulted in relation to locations identified for abstraction licenses and discharge permits, as well as the location of the M25 crossing.
- Appendix 14.2 – Water Features Survey Factual Report (1 of 2) [APP-454] paragraph 1.2.4 states that the RSPB, Natural England, the North Kent Marshes Internal Drainage Board (IDB) and the Thames and Medway Canal Association were consulted in relation to the water environment and ecohydrology of the Filborough and Shorne Marshes.

A comprehensive study of the Filborough and Shorne Marshes south of the River Thames included a review of surface water level management and also water quality monitoring, which helped to determine baseline water chemistry characteristics of the watercourses. The in-depth understanding gained from this study allows a more robust approach to assessing impacts of the proposed development and also sets baseline information to inform ongoing monitoring (during and post construction).

ExQ1	Question to:	Question:
However, there was not an equivalent study north of the River Thames, which includes the Mucking Flats RAMSAR site stretching from Coalhouse Point to the London Gateway Port. The Coalhouse Fort Park includes areas designated as Site of Special Scientific Interest and a Special Protection Area. The Council request the applicant to consider extending the survey limits to include the West and East Tilbury Marshes and the Coalhouse Fort Park. The additional survey should include water level management features, as well as water quality monitoring in strategic locations. Consultation with the Lead Local Flood Authority (LLFA) is not mentioned in the Water Features Survey Factual Report. The LLFA function sits within the Local Authorities, who have been consulted on a regular basis. The Environmental Statement Chapter 14 - Road Drainage and Water Environment [APP-152] paragraph 14.3.20, Table 14.1 includes a list of stakeholder engagement undertaken between May 2017 and August 2022. In relation to flood risk and drainage principles, the ES Chapter 14 lists the following meetings: • July 2017: Meeting with all Local Authorities (Kent County Council, London Borough of Havering, Gravesham Borough Council and Thurrock Council) were consulted to agree general approach to assessing flood risk and drainage principles; • April 2020: Meeting with all Local Authorities to present the mitigation proposals; and, • June 2021: Meeting with Essex County Council and Thurrock Council to discuss drainage design and compliance with the Essex SuDS design guidance The Lead Local Flood Authority would expect to be consulted in relation to water features survey requirements. The Council requests the applicant to discuss the requirements for additional survey and address implications to drainage design and monitoring. **Summary** **Whilst a comprehensive study was completed south of the River Thames there was no equivalent study north of the River Thames. The Council requests the applicant to discuss the requirements for additional survey and address implications to drainage design and monitoring.**		
10.2	**Managing Surface Water**	
10.3	**Managing Foul Water**	
10.4	**Managing Water Supply**	
Q10.4.5	Applicant Environment Agency Lead Local Flood Authorities (LLFA)	**Site Information** In document 6.3 Appendix 14.5 – Hydrogeological Risk Assessment [APP-326] (the Council believe this should be APP-458 –

ExQ1	Question to:	Question:
		please check) (paragraph 3.6.16), it suggests that watercourse flow could be seasonal. Descriptions are not clear as to the results of the investigation. • Is this flow into ground observed or assumed? • Could it have gone anywhere else? • Could it be weather dependent and/or reactive to ground water levels? Additionally, within the submitted plans, 6.2 Environmental Statement - Figure 14.1 - Surface Water Receptors and Resources [APP-322], there are a number of 'ordinary watercourses' delineated which are isolated and connect to nothing. • Where do these watercourses discharge? • What effect could interference with these watercourses have on the ground water and biodiversity of the area? • What measures are being proposed to protect these watercourses and have these measures accommodated within the submission or what amendments will be required? In Appendix 14.2 - Water Features Survey Factual Report (2 of 2) [APP-455], it suggests in Figure 2 that the southern Ditch has "….Heavy vegetation etc…and discharge route could not be determined. Experience suggests that ditches not normally maintained from April to July or longer, dependent on a number of options. Is the provision of regular maintenance on these

ExQ1	Question to:	Question:
		ordinary watercourses etc in this location considered to be particular important? It was suggested that there was no ditch in the location. Was there culverts or other discharge arrangements? For areas where maintenance operations are not clear from the Water Features Survey, what is being proposed, particularly in areas that are proposed for biodiversity or Nitrogen deficiency mitigation? Who is expected to undertake such maintenance works both during the construction phase and during the operational phase? How has this lack of understanding been accommodated in the analysis undertaken for the submission particularly in relation to the influence on biodiversity and/or flood risk? What effect would this have on the submission if not previously considered?

Thurrock Council Response

Introduction

The Council has reviewed the Hydrogeological Risk Assessment and makes the following comments.

Ditch Survey, Manor Farm and North Ockendon

In document 6.3 Appendix 14.5 – Hydrogeological Risk Assessment [APP-458]: Section 3.6 describes Springs and Natural Discharges, paragraph 3.6.16 and 3.6.17 describes observations obtained during monthly walkovers between October 2021 and May 2022, at Manor Farm and its surrounds in North Ockendon. The description does not specify a notable seasonal variation in watercourse flow. However, the report notes that the ditch network is generally dry. The report indicates that some isolated flows were observed and appear to disappear back into the ground just a short distance downstream. The landowner asserts that a deep Victorian drainage system is the source of water that flows into ditches at the bottom of the hill, although there are no as built records or surveys of the deep drainage system. The report suggests that the deep drainage system is the source for a licensed surface water abstraction downstream.

ExQ1	Question to:	Question:

The Manor Farm and North Ockendon are outside of the Council area and the Council have no further comments or concerns related to this water feature.

In relation to document Appendix 14.2 - Water Features Survey Factual Report (2 of 2) (APP-455), the Ditch survey is described which was carried out near to North Ockendon and the project intersection with the M25. The extents of the Ditch survey are outside of the Council area.

Catchment Delineation, Coalhouse Point, West Tilbury Marsh

In relation to the ordinary watercourses shown in document 6.2 Environmental Statement - Figure 14.1 - Surface Water Receptors and Resources [APP-322];

There are a number of ordinary watercourses within the Council area (shown on page 2 of 4) that appear disconnected and do not have an obvious outfall. These include the watercourses within the West Tilbury Marshes and also the watercourses around Coalhouse Point. It is not clear from the drawing whether the Westbury Tilbury Marshes watercourses drain entirely towards the east and eventually discharge via the Bowaters Sluice. The drawing does not show the full extent of the watercourses around Coalhouse Point and does not include the detail of water features around the Coalhouse Fort moat.

The catchment delineation is described in document 6.3 Environmental Statement Appendices Appendix 14.6 – Flood Risk Assessment - Part 5 [APP-464]. Catchments have been derived from LIDAR data. Page 12- Plate 4.2 shows the final catchment delineation, from this it appears that the West Tilbury Marshes are divided between catchments 2 and 4. For these catchments 25cm LIDAR was used and it is possible that this picked up the effective watercourses and ditches in the Marshes. However, the report acknowledges that there is higher uncertainty in areas with flat gradients, this includes the eastern side of catchment 2 where Coalhouse Point is located. Section 4.1.6 states that simulated flood extents have been 'sense checked' against the local flood risk knowledge of the Council and the Environment Agency.

The post development design simulations have been compared to the pre-development simulation to understand impact to flood risk within these catchments. This is detailed in Section 7.2 of document 6.3 Environmental Statement Appendices Appendix 14.6 – Flood Risk Assessment - Part 5 [APP-464]. When the mitigation measures have been included in the simulation, the model demonstrates very little difference in flood risk depths over the majority of the flood plain. Sensitivity testing has also been carried out to understand potential impact of assumed catchment characteristics, modelled inflows as well as partial blockage of the proposed West Tilbury Main culvert.

In general, the Council recognise the detailed flood risk modelling has used high resolution LIDAR and sensitivity of the modelling has been checked in terms of impact on flood risk levels.

However, given the uncertainty of water course connectivity in some areas (West Tilbury Marshes and Coalhouse Point), as well as proposed diversions, the Council would like to understand what effect the proposed development could have on ground water and biodiversity of these areas.

ExQ1	Question to:	Question:
Summary **The Ditch Survey carried out at Manor Farm and North Ockendon showed some uncertainty in water course connectivity, notably with what has been assumed as a deep Victorian drainage system, potentially linked to a water abstraction licensed source downstream. The Council do not consider the uncertainties in this area on connectivity to have any significant impact on the catchments within the Council area and therefore no impact on biodiversity, flood risk or maintenance implications in the Council area.** **There are a number of ordinary watercourses within the Council area that appear disconnected and do not have an obvious outfall. These include the watercourses within the West Tilbury Marshes and also the watercourses around Coalhouse Point. The Council request the applicant to interrogate the sensitivity model output in relation to flood risk and long term water levels and report on the subsequent potential impact on ecology. Where risks are identified, these should be included as key indicators within a water level and quality monitoring plan, with appropriate contingency measures proposed.**		
10.5	**Water Bodies and Watercourses**	
10.6	**Water Quality and Discharges**	
Q10.6.5	Environment Agency LLFAs Natural England Wildlife Trusts Environment Agency Applicant	**Mammal Ledges** The Applicant proposes to introduce mammal ledges in culverts on watercourses that suggest that watercourses may be used by commuting or foraging mammals. • Is it expected that the culvert should be designed to the full storm design parameters (including appropriate climate change additions) with the ledge remaining “dry”? • If not to what design storm should the culvert design reach? • What reduction in capacity is appropriate if the mammal ledge is submerged?

ExQ1	Question to:	Question:
		• What changes to the submitted documents are required if the proposals do not assume the culverts are sized to meet the full design storm with the ledges remaining "dry". • What is the maximum length that it is considered that mammals will use such ledges? • What is the effect on the proposals if there are culverts longer than the longest appropriate length of culvert, or do not meet the suggested capacity for "dry" ledges, including what additional mitigation works are to be required? Do the Environmental Consultees have an opinion?

Thurrock Council Response
Introduction
The Council has considered the introduction of mammal ledges and makes the following comments.

Further information required
Section 5.8 of the document 6.3 Environmental Statement Appendix 14.6 - Flood Risk Assessment - Part 10 [APP-477] states that:

- Section 5.8: All Culverts would include a mammal ledge (or a dry culvert-overpass). Ledges will be a minimum of 500mm wide and with 600mm headroom (to soffit of culvert); and,
- Section 5.2: Culverts are sized to accommodate the 1 in 100 AP event with Climate Change. The Culverts with mammal ledges would set the level at 150mm above the design event (1:100 AP + Climate change)

The document 6.1 Environmental Statement Chapter 8 - Terrestrial Biodiversity [APP-146] Paragraph 8.5.10 states that 12 culverts on 8 watercourses will contain mammal ledges. These included 2 box culverts west of the Mardyke, 1 culvert south of Linford Pond and two culverts on the Tilbury Main river. Paragraph 8.5.11 references the relevant principles contained in the Design Principles and the Environmental Masterplan. Having reviewed these only one ecological culvert was found on 6.2 Environmental Statement Figure 2.4 Environmental Masterplan Section 9 (Sheet 2) [APP-163]. This is the only culvert specifically referenced in [APP-516] 7.5 Design Principles, Table 5.5 Clause No. S9.10. The applicant should clearly identify these other culverts.

ExQ1	Question to:	Question:

- Table 4.10 within the FRA Part 10 lists the different structures related to proposed water crossings (including box culverts, pipe culverts and viaducts).The Circular pipe culverts include 1 No. 900mm diameter and also a culvert consisting of 2 No. 300mm dia. Pipes. The applicant should confirm if the proposed 900mm dia. pipes as well as the 300mm dia. pipes are too small to accommodate a mammal ledge with the required parameters and would need the applicant to clarify if an alternative mammal crossing has been allowed for.
- It is not clear which culverts will include a mammal ledge and which ones will include a dry culvert -overpass. Where a dry overpass is required, the applicant will need to clarify this and confirm if the cover level will be sufficient if the dry overpass is to be raised above the flood levels.
- The structure lengths are shown- the longest is 178m, the applicant should confirm if additional measures are required for longer length culverts.

The Council requests the applicant to clarify the above points and update Table 4.10 in document 6.3 Environmental Statement Appendix 14.6 - Flood Risk Assessment - Part 10 (APP-477). The Table 4.10 should include specific identification of all culverts with Mammal ledges and a cross reference to the relevant drawing/figure within 6.2 Environmental Statement Figure 2.4 Environmental Masterplan Section 9 (APP-163).

Summary

Further information is required from the applicant to enable the Council to understand the proposals for mammal ledges.

ExQ1	Question to:	Question
11.	**Biodiversity**	
11.0	**Biodiversity Effects: General**	
11.1	**Species**	
11.2	**Mammals**	
11.3	**Birds & Bats**	
11.4	**Environmental Mitigation**	
11.5	**Structures**	
11.6	**Statutory Processes**	
11.7	**Intra-project effects**	
11.8	**Habitats Regulations Assessment (HRA): Overarching Questions**	

ExQ1	Question to:	Question:
11.9	**HRA: Thames Estuary and Marshes SPA and Ramsar Site**	
11.10	**HRA: Epping Forest SAC**	

ExQ1	Question to:	Question
12.	**Physical effects of development and operation**	
12.1	**Historic Environment & Archaeology**	
Q12.1.10	Applicant Local Authorities Historic England	**Waterlogged Organic Deposits** A strategy has been included in the oWSI [APP-367] to address any unexpected finds (Sections 7.1.14 and 7.3.127). Section 7.1.14 adds that if the relevant local authority finds that further investigation is needed that no construction would take place within 10m of the remains until further investigation can take place. However, if waterlogged remains are discovered, a greater stand-off may be more appropriate to ensure that the area is not accidentally dewatered before the mitigation strategy is implemented. Does the Applicant agree to amending the oWSI to allow the relevant local authority to set a greater stand-off distance for unexpected waterlogged finds? Local Authorities and Historic England shall confirm what would be sufficient to address this issue.

Thurrock Council Response

Introduction

The Council has considered the information provide in the oWSI related to unexpected finds and makes the following comments.

Requirement for a stand-off

Sections 7.1.14 and 7.3.127 of the submitted OWSI (APP-637) relates to unexpected finds made during the construction programme. It is acknowledged unexpected discoveries may occur and will need to be considered on a site-by-site basis, although hopefully the level of trial trenching will reduce the potential of this. Where waterlogged remains are identified it may be appropriate to extend the standoff that is agreed. The OWSI already identifies the role of the Local Planning Archaeological (LPA) advisors and other bodies, such as Historic England in the decision-making process and the oWSI is appropriate in that regard.

ExQ1	Question to:	Question
It is therefore suggested that a commitment from the applicant via the OWSI to ensure that a 10m standoff remains the minimum and there is a mechanism for establishing an agreement on the appropriate standoff for waterlogged organic remains should they occur with the Council's area. **Summary** **The Council request that a commitment is made on the applicant, via the OWSI, to ensure that a 10m standoff remains the minimum and there is a mechanism for establishing an agreement on the appropriate standoff for waterlogged organic remains should they occur with the Council's area.**		
12.2	**Landscape Impact including riverscapes and visual severance**	
Q12.2.5	Local Authorities Kent Downs AONB Unit Natural England	**Mitigation Planting and Photomontages** It is noted that Register of Environmental Actions and Commitments No. LV003 (contained in ES Appendix 2.2 – Code of Construction Practice, First Iteration of Environmental Management Plan) [REP1-157] states that *'the first five years of vegetation establishment would be overseen by an Environmental Clerk of Works'* and that *'failed vegetation in this period would be replaced.'* Can the **Local Authorities, Kent Downs AONB Unit and Natural England** advise whether this period of time is sufficient when landscape mitigation is so heavily relied upon to minimise adverse landscape and visual effects and air quality effects of the project?
Thurrock Council Response **Introduction** The Council has considered the information provided on mitigation planning and photo-montages and makes the following comments. **Proposed arrangements appropriate in principle** This Question references only part of LV003. The final sentence of LV003 states *'At the end of the establishment period, subsequent landscape management work would be undertaken in accordance with the LEMP.'* Table 4.1 within the oLEMP (APP-490) sets out the duration of establishment for all the habitat types with some being up to 25 years. Section 4.1.1 of the oLEMP confirms that the Contractor would be responsible for establishment for after which the ongoing management, maintenance and monitoring would be delivered by National Highways' Operational and Maintenance teams, probably through a third party. An Advisory Group, which would include LPAs, would be formed to monitor the works. Based on this the Council is satisfied in principle that there is an appropriate mechanism for ensuring the long-term establishment of the landscape and ecological mitigation measures. The oLEMP implies that management would be ongoing in perpetuity, however, this is not explicitly stated. The applicant should provide confirmation that this is the case.		

ExQ1	Question to:	Question
Summary **The Council is satisfied in principle that there is an appropriate mechanism for ensuring the long-term establishment of the landscape and ecological mitigation measures. The oLEMP implies that management would be ongoing in perpetuity, however, this is not explicitly stated. The applicant should provide confirmation that this is the case.**		
12.3	**Visual Impacts**	
Q12.3.1	Local Authorities Historic England Kent Downs AONB Unit	**Representative Viewpoints and Photomontages** Can the **Local Authorities, Historic England and the Kent Downs AONB Unit** confirm they are in agreement with the LVIA methodology including the locations of visual receptor viewpoints and photomontages? Can they also confirm if any other viewpoints have been requested from the Applicant during rounds of stakeholder consultation which have not yet been provided?
Thurrock Council Response **Introduction** The Council has stated in its LIR (REP1-281) that it is satisfied with the LVIA methodology. The Council took part in site visits in 2019 to confirm the location of viewpoints. Additional viewpoints were requested at that time and were included within the LVIA. **Summary** **No further comment.**		
13.	**Social, economic and land-use considerations**	
13.1	**Socio-Economics, Local Impacts and Health**	
Q13.1.1	Gravesham Borough Council Kent County Council Essex County Council Thurrock Council	**Community Severance - Public Rights of Way** Paragraph 13.3.25 of ES Chapter 13 – Population and Human Health [APP-151] states that baseline conditions for Public Rights of Ways were identified from definitive mapping on LPA websites. Definitive maps may only show made rights of way and village greens and not any application under consideration.

ExQ1	Question to:	Question
	London Borough of Havering Council Brentwood Borough Council	Can the **Local Authorities** advise whether there are any live applications being considered by their Public Rights of Way departments for amendments to or establishment of new rights of way or village greens that may be affected by the Project?
Thurrock Council Response **Introduction and Summary** There are no live applications to create or amend rights or way or village greens affected by the Project.		
Q13.1.4	Gravesham Borough Council Thurrock Council London Borough of Havering Thames Chase Trust	**Replacement Land** Paragraph 13.5.9 of ES Chapter 13 – Population and Human Health [APP-151] states that replacement land for affected public open space would be equal to or greater in size than the land required for the Project and similar in terms of quality and accessibility. Can **the Local Authorities and Thames Chase Trust** advise if they agree that the replacement land if of suitable size, location and purpose? It is also noted that public golf facilities in the Gravesend area are affected by the project and that the mitigation for this is not yet resolved. The ExA appreciates that the Statement of Common Ground and the Principal Areas of Disagreement Summary both note that Gravesham Borough Council are seeking replacement facilities, but can **Gravesham Borough Council** provide specific detail on what type of facilities they are seeking from the Applicant and where? The Council should refer to and provide clarification on Paragraph 2.3.77 of ES Chapter 2 – Project Description [APP-140] in its response.
Thurrock Council Response **Introduction** The ES states that replacement land for affected public open space would be equal to or greater in size than the land required for the Project and similar in terms of quality and accessibility. The Council has considered how this applies to Thurrock. **Unacceptable arrangements for provision of replacement land** Replacement land for three sites to be acquired permanently was required in Thurrock. The Council engaged with the applicant to agree the location of the replacement land. This led to a significant change in the proposal for the Ron Evans Memorial Field to create a more suitable, useable space for users. The Council can confirm it agrees that the replacement land is of suitable size, location and purpose. However, the Council is extremely concerned about the proposal from the applicant only to provide the replacement land no sooner than at least five years after **taking the existing area (with some areas to be fenced off for longer) – this is unacceptable and on the basis of the current timetable for delivery of the replacement land, it does not meet the statutory test for replacement land set out in s.131(12) PA 2008.**		

ExQ1	Question to:	Question
The applicant is taking temporary possession of a large area of the Ron Evans Memorial Field, but has not indicated for how long temporary possession will be required, how often, when the land might be returned and what condition it might be in when it is returned. The Council is extremely concerned that the applicant has failed to provide this information and that it has failed to provide temporary re-provision. The Council has set out its views on these matters in its D3 response – Section 18.13 (REP3-211) and awaits the applicant's response. This matter will further be raised in detail within its Post Event submission for CAH1 and CAH2 Hearings. **Summary** **The Council is extremely concerned that NH has failed to provide information concerning the provision of replacement land.**		
Q13.1.20	Thurrock Council Gravesham Borough Council London Borough of Havering Brentwood Borough Council	**Green Belt** The ExA acknowledges the Local Authorities' objection to the proposed development in the Green Belt. Without prejudice to those objections, the ExA would like to understand from the **Local Authorities** whether there are any particular locations within the Green Belt where the effects of the Project on openness would be particularly pronounced, and conversely, whether there are locations where effects on openness would be avoided or at the lower end of the harm scale.

Thurrock Council Response

Introduction

The Council is not in a position to provide a response based on evidence to the ExQ at present. This is because the applicant has **not** undertaken a robust Green Belt Assessment for LTC to inform the impacts of LTC. The Council has also not undertaken a full assessment of LTC within the Green Belt. However, a preliminary response is provided in following paragraphs.

Preliminary Response

At this stage, the Council is not in a position to object or support LTC being within the Green Belt. The Council's position, as set out in the Council's LIR (Appendix L Annex 1 (REP1-293) and summary in Section 15.10 (REP1-281), is that the applicant has not demonstrated 'very special circumstances (see Appendix L Annex 1 (REP1-293), because:

- The applicant has not undertaken a robust Green Belt assessment for LTC**, against the purposes of the Green Belt and impact on openness set out in the NPPF, which would robustly set out the harm in any location and for the project as a whole;**
- The applicant has not properly identified or clearly set out the level of harm to the Green Be**lt, including to its openness and the purposes of the Green Belt, to inform the selection of alternatives (at a strategic level) or for the preferred option design (at a detailed level, e.g. for the A13/A1089/LTC junction) or for the construction sites, such as construction compounds;**

ExQ1	Question to:	Question

- In terms of 'any other harm', the impacts of LTC in Thurrock on air quality, biodiversity, climate change, geology and soils, health, heritage, landscape, noise, socio economics, transport (such as PRoW, public transport, wid**er network impacts), water, etc., is significant; and,**
- In terms of 'other considerations', the applicant's evidence for the need for LTC has not been properly demonstrated (see Section 7 **in the Council's LIR (REP1-281)); the level of benefits of LTC has been overestimated (see Section 7 in the Council's LIR (REP1-281)); and, there is a lack of proper assessment of alternatives (see Section 8 in the Council's LIR (REP1-281)).**

Therefore, the applicant has not demonstrated 'very special circumstances' in the LTC DCO application. The potential harm to the Green Belt by reason of inappropriateness, and any other harm, is not clearly outweighed by other considerations. Therefore, the applicant cannot demonstrate and the ExA cannot conclude that the DCO submission complies with national policy NSPNN 5.164, 5.171 and 5.178 and NPPF:

- **NSPNN Paragraph 5.164 relates to the purposes and protection of Green Belt and cross-refers to the NPPF. T he following detailed policy guidance of relevance to the Project is provided within the NPPF.**
- **NPPF Paragraph 133 sets out the long-established policy framework in relation to Green Belts and states that their fundamental aim is to prevent urban sprawl, with their essential characteristics being their openness and permanence.**
- **NPPF Paragraph 134 presents the five purposes for including land in the Green Belt, which are: *'To check the unrestricted sprawl of large built-up areas; To prevent neighbouring town merging into one another;***

    a. *To check the unrestricted sprawl of large built-up areas;*
    b. *To prevent neighbouring town merging into one another;*
    c. *To assist in safeguarding the countryside from encroachment;*
    d. *To preserve the setting and special character of historic towns; and*
    e. *To assist in urban regeneration, by encouraging the recycling of derelict and other urban land.'*

- **NSPNN Paragraph 5.171** of the NPSNN states that *'the identification of a policy need for linear infrastructure will take account of the fact that there will be an impact on the Green Belt and as far as possible, of the need to contribute to the achievement of the objectives for the use of land in Green Belts.'*
- **NSPNN 5.178** If it is determined that a proposal would involve inappropriate development in the Green Belt, paragraph 5.178 of the NPSNN sets out the decision-making policy:

    'When located in the Green Belt national networks infrastructure projects may comprise inappropriate development. Inappropriate development is by definition harmful to the Green Belt and there is a presumption against it except in very special circumstances. The Secretary of State will need to assess whether there are very special circumstances to justify inappropriate development. Very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations. In view of the presumption against inappropriate development, the Secretary of State will attach substantial weight to the harm to the Green Belt, when considering any application for such development.'

ExQ1	Question to:	Question

NPSNN paragraph 5.178 clearly sets out that the potential harm to the Green Belt, and 'any other harm' that is caused by the development LTC, has to be outweighed by 'other considerations'. These matters are considered further in the Council's LIR in Appendix L **Annex 1** (REP1-281).

Based on the information provided by the applicant in the DCO, relating to Green Belt, it therefore extremely difficult for the Council to understand the Green Belt impacts, due to the lack of NH LTC Green Belt evidence/assessment. It is therefore difficult to make an informed response to this ExQ1. The Green Belt assessment for LTC should be clearly set out by the applicant, at each stage along the route, for both the ExA and others to review. Instead, a full and robust Green Belt assessment for LTC is simple missing. This is potentially why this ExQ1 is being asked of the local authorities.

Lack of robust Green Belt assessment

The Council refer the ExA to the Council's Green Belt response to the DCO application, in the Council's LIR in **Appendix L Annex 1** (REP1-281) and summary at Council's LIR (Section 15.10 (REP1-281). It explains clearly the Green Belt information (assessment) that is missing from the DCO application. It also sets out that, the Council have not undertaken a full Green Belt assessment of LTC, either of the alternative routes or a detailed Green Belt assessment of the preferred route. The Council would expect to see a full Green Belt assessment as part of the DCO submission. This would enable the Council to provide a robust answer the ExA's question set out in Q13.1.20. It is clear, from national policy, that the onus is on the applicant to demonstrate 'exceptional circumstances' for building in the Green Belt. It is evident to the Council (and assume to the ExA having to ask the Councils this question) that 'exceptional circumstances' has not clearly been demonstrated by the applicant.

The applicant sets out the Green Belt impacts in ES Chapter 7 'Landscape and Visual'. This is not a robust Green Belt assessment for LTC. ES Chapter 7: Landscape and Visual (APP-145) is a purely landscape and visual chapter, based on landscape assessments. Green Belt is referenced, within the Chapter 7, in relation to landscape character and visual amenity of Local Landscape Character Areas (LLCAs). Chapter 7 provides descriptions and value of each LLCA, and schedule of effects on landscape receptors during construction and operation on LLCAs. There is very little reference made to Green Belt in ES Chapter 7: Landscape and Visual (APP-145) and associated appendices.

In terms of Green Belt, the Council comments on ES Chapter 7: Landscape and Visual (APP-145) and appendices are set out below:

a. ES Appendix 7.2 – Landscape and Visual Assessment Methodology (APP-377) makes no reference to Green Belt assessment methodology. In any event, Green Belt is not a landscape or visual designation or concept, but rather a spatial concept. It would be unlikely that a Landscape and Visual assessment is appropriate for assessment of impact of development on the Green Belt.

b. Chapter 7 does not provide a full assessment of each parcel against the fundamental aim including openness or the fulfilment of Green Belt purposes, as undertaken in the Council's Strategic Green Belt Assessment Study (2019) (Annex 3 and 4). Thurrock Strategic Green Belt Assessment Study should have provided the foundation of an LTC Green Belt assessment.

c. Chapter 7 sets out the landscape effects on LLCAs within Green Belt during construction and operation. For example, in table 7.28, at Thurrock Reclaimed Fen the Magnitude and nature of the effect in Opening Year is 'Major adverse' which remains at 'Major adverse' in Design Year; and

ExQ1	Question to:	Question

Significance of Effect' at Opening Year is 'Very Large adverse' reducing to 'Large adverse' in Design Year. These landscape assessments should of fed into the individual Green Belt parcel assessments to inform LTC design. However, as submitted, Green Belt is not a landscape designation.

d. The ES chapter refers the reader to Planning Statement Appendix E (APP-500) for the separate assessment of the extent of harm to the openness of the Green Belt. The Council's review of that document is set out below.

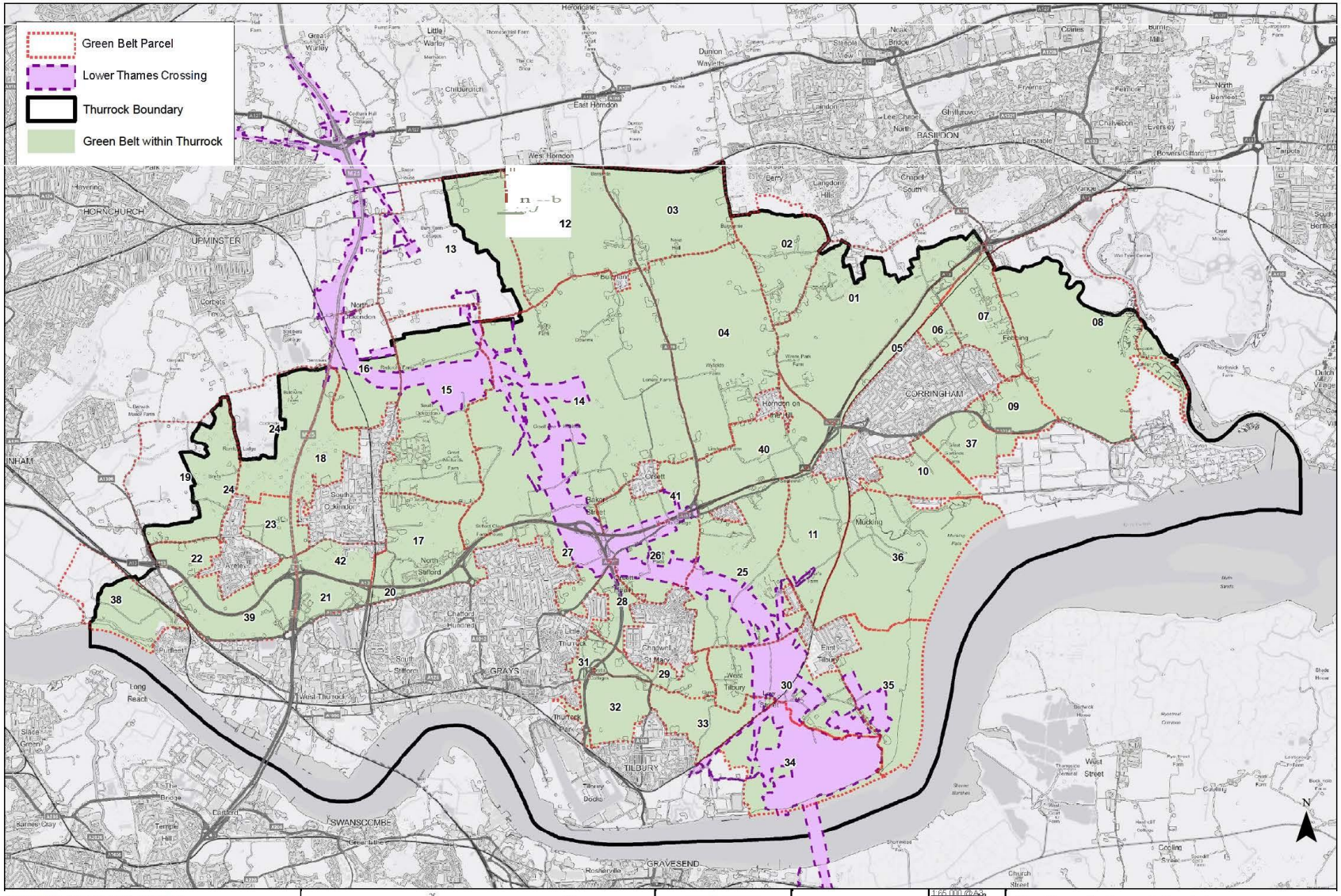
Notwithstanding the statement above, the Council sets out the following response below.

Thurrock Strategic Green Belt Assessment Study

Thurrock Strategic Green Belt Assessment Study (Appendix L, Annex 3) (REP1-293) is a robust and full assessment of the quality of the whole Green Belt in Thurrock. There is no evidence that the applicant has used the Council's Study to inform the Green Belt work undertaken for LTC. The Study does not provide a full assessment for LTC. The Study (in paragraph L.2.36) provides the following commentary on LTC by broad parcels affected on the route of LTC and the table extracts those parcels to demonstrate the likely implications/harm to those parcels. The date of the Green Belt Study is January 2019 immediately following the applicant's statutory consultation scheme from late 2018. Although the scheme at that stage is now different to the DCO submission version in many respects the implications set out in paragraph L.2.36 are broadly helpful, which is set out again below.

L.2.36: Thurrock Strategic Green Belt Assessment Study (Appendix L, Annex 3) REP1-293 provides the following commentary on LTC by broad parcels affected on the route of LTC and the table below extracts those parcels to demonstrate the likely implications/harm to those parcels. The date of the Green Belt Study is January 2019 immediately following the applicant's Statutory Consultation scheme from late 2018. Although the scheme at that stage is now different to the DCO submission version in many respects the implications set out below are broadly helpful:

a. Paragraph 3.7.4: *'As shown on the plan in Appendix F* (Appendix L, Annex 4) REP1-293*, the proposed route, which is now 3 lanes in both directions, would emerge from bored tunnel below the river within parcel 34 and then run in generally north westerly direction across parcels 30, 25, 27, 14-16 before joining the M25 just north of the borough. There would also be small incursions into the south west corner of 41 and northern part of 28 at the proposed A13/A1089 interchange.'* The plan is re-provided below.


Green Belt Parcel
Lower Thames Crossing
Thurrock Boundary
Green Belt within Thurrock
Thurrock Green Belt Review
Km
pba peterbrett
Drawn: CM/IB
Checked: SJ
The Green Belt parcels in relation to the proposed Lower Thames Crossing
Rev A

ExQ1	Question to:	Question

b. Paragraph 3.7.6: LTC *'The route will form a very clear linear boundary and, together with embankments, elevated structures, moving vehicles and signage (and lighting where this is to be provided), will form a prominent intrusive feature within much of the landscape through which it passes. In effect it would subdivide the parcels that it crosses and form a profound encroachment into and through some of the more rural parts of the borough beyond the eastern, north western and northern periphery of the Thurrock built-up area, and beyond the adjoining towns of Tilbury, Chadwell St Mary and South Ockendon, and the smaller settlements of West and East Tilbury, Linford, Orsett, and Baker Street.'*

c. Section 5 sets out the implications of the proposed LTC route on the Green Belt parcels that it crosses, as set out below (from south to north):

Thurrock Green Belt Parcel	***Initial Implications of the Proposed LTC Route on Green Belt Parcels***
Parcel 34	*The land-take indicated for the scheme would appear to occupy all but the western part of this parcel. The route would emerge from the tunnel portal within the central southern part of parcel 34 before rising onto viaduct 10-12m high and 1km long to cross above Station Road and the Tilbury Loop railway on the northern boundary of the parcel. This would introduce a prominent vertical unscreened structure within the central northern part of the open flat landscape of the Tilbury Marshes; this would appear as a clear encroachment into the open countryside (Purpose 3) of the open, flat marshland landscape. An interchange would be formed at the southern end of the viaduct with a roundabout below (Tilbury Junction, which straddles the boundary between parcels 34 and 35) and this, together with associated structures/slip roads and related earthworks will also bring about substantial change. Whilst the viaduct, being raised above the ground, will maintain a degree of openness and a connection between the landscape on either side of the junction below and the associated sloping slip roads will disrupt this. As the southern section of the route would be in tunnel, the southern part of the parcel would be unaffected.* *The route would be remote from built-up areas and towns (around 1.8km east of Tilbury). Whilst it will form a clear physical and, for much of its length, a visual boundary, and provide an opportunity to separate the parcel the contribution of the land to Green Belt purposes would remain broadly the same.*
Parcel 35	*Some areas of land-take are indicated in the adjoining western part of parcel 35; part of this is for a proposed service area south west of East Tilbury. This will form a significant encroachment into the countryside within this part of the marshland landscape and introduce development closer to the edge of East Tilbury; this may be perceived as further 'sprawl' associated with the LTC and a further encroachment into the intervening landscape. The western boundary of the parcel may require adjustment to suit the final form of the LTC, but the parcel is unlikely to require subdivision.*

ExQ1	Question to:	Question
Parcel 30		*The route would cross this parcel more or less at grade with an embankment and bridge (9.5m high) carrying Muckingford Road over the LTC on the northern boundary of the parcel; for mitigation purposes a false cutting is proposed on the western side rising to 2m above road level. The route would form a prominent new boundary cutting across the landscape between Chadwell St Mary and East Tilbury, passing only some 400-600m west of East Tilbury where there is intervisibility between the line of the route and the residential outskirts and the Bata factory. It is possible that the location of the route and the proposed service area located east of the Tilbury junction may bring about pressure for development in any remaining land between the route and south western edge of Tilbury and also within the vicinity of the junction.* *The land-take indicated extends up to the western edge of East Tilbury. As a consequence, parcel 30 would become two separate parcels with the eastern part fulfilling a greater function in respect of Purpose 3 - preventing encroachment of East Tilbury westwards to the road new boundary.*
Parcel 25		*The route would pass along the southern side of a broad valley to Brentwood Road, close to existing ground levels, crossing this area of countryside (circa 1.7km wide) that separates Linford and the eastern side of Chadwell St Mary. False cuttings to 4m above road level are proposed on both sides of the route. Hoford Road (a track) would cross over on a bridge 9m high; Brentwood Road would be carried over the road 9m above road level which would be some 2m above ground level at that point. The south western part of the parcel, which has a closer relationship with Chadwell St Mary, would be separated from the rest of the parcel. There is the prospect that this may encourage promotion of Green Belt release for development on the edges of the above two settlements; in the case of Linford there is no intermediate alternative boundary, whilst on the western side an intermediate boundary exists along High House Lane. The contribution that the land within both parts of the parcel makes to Green Belt purposes is unlikely to be altered significantly by the route.*
Parcel 26		*The route would pass through the centre of this parcel on a roughly west/east alignment, initially 2m or so above ground level at Brentwood Road then descending gradually into cutting around 4-5m deep below the A13 which forms the northern boundary of the parcel. The LTC junction with the A13 and A1013 creates a complex network of roads slip roads within the north western part of the parcel. The route would therefore form a new intermediate boundary between the north side of Chadwell St Mary and the A13 in an area where the existing Green Belt edge is not well defined on the edge of the town. It is apparent that the route in this location may form a new northern limit to Chadwell St Mary and, as such, the intervening land could be considered to provide a more limited contribution to Purpose 1.*
Parcel 27		*Part of the LTC/A13/A1013 interchange would extend into the eastern part of parcel 27 with roads on embankments and within false cuttings up to 4m above carriageway level. These roads would extend the junction to within 250-300m of the north eastern edge of Chadwell St Mary. The boundary of the town is poorly defined and the LTC would provide a more appropriate long-term Green Belt boundary in this particular location.*

ExQ1	Question to: Question
Parcel 14	*The route would pass through the western central part of this large parcel a significant part of which falls within the Bulphan Fenland LCA. From the complex interchange with the A13 and A1089 the route would be in cutting up to 5.5m deep where it continues to cross the northern ridge of the Orsett & Horndon-on-the-Hill Open Undulating Farmland with a slip road and Stifford Clays Road rising over on embankments/bridges up to 7m above existing ground level. False cuttings up to 3m above carriageway would be created between Stifford Clay Road and Green Lane. The route then runs at grade, between false cuttings before rising onto 7.5m high embankment flanked by false cuttings as it crosses the Bulphan Fenland, with a section of viaduct over Mar Dyke.* *This parcel comprises a very rural landscape that, in most parts, is perceived as being remote from the Thurrock built-up area; the route will have a significant effect on the character of this landscape and this sense of remoteness. Whilst the line of the route would justify the subdivision of this parcel, the contribution of the area to the fulfilment of Green Belt purposes is likely to remain unchanged.*
Parcel 15	*The route would cross the northern part of parcel 15, a generally rural and remote landscape of the Belhus Farmed River Terrace Gravels, passing to the north of Ockendon landfill at grade/in shallow cutting with some sections of 4m high false cutting, to the B186 which is raised over the LTC by some 8m on the boundary of the parcel. The land to the south of the route has some affinity with the northern outskirts of South Ockendon, being only some 500m beyond the northern edge of the town. Whilst sub-division of the parcel is unlikely to affect the assessment of the contribution of the intervening land to Green Belt purposes 1 and 2, it is likely to strengthen its contribution to the third purpose of preventing encroachment on the basis that the area may be viewed as having potential for release to accommodate a north eastward expansion of the town (although the heritage value associated with that area around South Ockendon Hall provides a significant constraint in this area).*
Parcel 16	*West of the B186 North Road the road crosses open farmland north of South Ockendon more or less at grade before descending into cuttings to join into the M25. The route would justify sub-division of this parcel; the southern part, which relates more closely with the northern end of South Ockendon, would continue to fulfil its fundamental contribution to the prevention of encroachment from the northern expansion of the town, although the LTC route would provide an alternative clear boundary to contain the encroachment of the town into the landscape beyond if this area were to be considered for release from the Green Belt. If release were to occur the northern part of the parcel would then provide some contribution to Purpose 2 due to the separation that it would provide between the town and Upminster to the north (although still remaining separated by around 2.6km).* *The very minor incursions of the LTC route on the edges of parcels 28 and 41 parcels would make no material difference to the existing contributions of these parcels to Green Belt purposes.*

ExQ1	Question to:	Question

d. It is clear from the Green Belt Study that it made a number of conclusions regarding the implications of LTC on the Green Belt and these are set out in Paragraph 6.2.1, as follows: *'The alignment of the LTC route through the central and western parts of the borough will undoubtedly have implications for the way in which some parts of the Green Belt within Thurrock fulfil Green Belt purposes. The most significant effect of the route on the Green Belt, other than the route being a significant encroachment into the countryside, would be the creation of a major enduring boundary within the Green Belt which is, in most areas, reasonably distant and in some cases very remote from the Thurrock built-up area and towns. In most parts of the borough this boundary will merely separate areas of similar open countryside with little to no effect on the way in which the related parts of the Green Belt contribute to the purposes. However, in parcel 26, the route would create a more enduring boundary beyond the northern edge of Chadwell St Mary than currently exists along the northern edge of the town. As a result, the intervening land may assume greater importance in terms of the constraint that it provides on preventing encroachment of the town into the intervening countryside in an area that will undoubtedly become subject to development pressures or, alternatively, the land could be considered as being less important as a more enduring boundary would exist up to which development could extend preventing encroachment into the countryside beyond. In this regard, there are similarities too with the southern part of parcel 16, eastern part of parcel 27, and land on the south western edge of East Tilbury within parcel 30.'*

The ExA question 13.1.20 relates to the Green Belt openness. The Council maintain that the Green Belt assessment should be against **both openness and three of the five purposes of the Green Belt which are most relevant**, as set out in NPPF paragraph 138 and below:

a. *To check the unrestricted sprawl of large built-up areas*

b. *To prevent neighbouring towns from merging into one another*

c. *To assist in safeguarding the countryside from encroachment*

The Council would ask the ExA, in its consideration of Green Belt impact, to also include the impact of LTC on the three purposes of the Green Belt set out above, together with the effects on openness. This would then provide a full picture of LTC Green Belt impacts in Thurrock, which reflects national policy robustly. The Council's comments on this issue is set out throughout the Council's LIR in **Appendix L Annex 1** (REP1-293).

The Council have reviewed Planning Statement Appendix E (APP-500) and 'other documents in the DCO application submission' referenced in Appendix E, listed in paragraph R.1.4. Thurrock Council can confirm that the applicant has not undertaken a clear and robust Green Belt Assessment in these documents, at either a strategic or detailed level to inform either the selection of alternative routes or in the design of the preferred route, for example, in the design of the A13/LTC junction. The Council full response is set out in the Council's LIR **Appendix L Annex 1** (REP1-293). The Council's response to Planning Statement Appendix E (APP-500) on the applicant's limited Green Belt assessment (against

ExQ1	Question to:	Question

'openness' and purposes of the Green Belt) for LTC, set out in the applicant's Planning Statement Appendix E (APP-500) is set out in paras L.3.15 – L.3.24 the Council's LIR Appendix L Annex 1 (REP1-293) and set out below:

'Planning Statement Appendix E (APP-500)

L.3.15 Planning Statement Appendix E (APP-500) paragraphs E6.8 – E.6.14 sets out the conclusions of harm to the Green Belt against the four purposes of Green Belt in just 1 page of text, for the whole LTC. Paragraphs E6.15 - E.6.23 sets the conclusions of harm to Green Belt to Green Belt openness in only 1 page of text as well. Paragraphs E.6.24 – E.6.26 sets out the 'any other harm' in just 3 paragraphs. This is the only reference made to Green Belt assessment against the purposes of the Green Belt as set out in NPPF, which is wholly insufficient. It is also unclear how these conclusions were derived at, when the Council has not been able to view a robust methodology or Green Belt assessment.

L.3.16 The complete LTC assessment against the four of the five Green Belt purposes (a, b, c and e) (paras E6.8 – E.6.14), for the whole LTC route in Thurrock, is set out in *italics* below. The Council's response to each is set out beneath each NH assessment.

a. **To check the unrestricted sprawl of large built-up areas** – 1 paragraph for Thurrock: *'The new road would be located close to the settlements of East Tilbury, Chadwell St Mary and Linford. Thurrock Council's Green Belt Assessment acknowledges that the boundary of the town to the north-east of Chadwell St Mary, around the A13/A1089 junction, is poorly defined and the road would provide a more appropriate long-term Green Belt boundary in this particular location. The Green Belt purposes are, therefore, unlikely to be altered significantly by the route.'*

   Council response:
   The applicant's Green Belt assessment for Purpose (a) does not present any Green Belt assessment for the 'large built-up areas' in Thurrock. The Council's Strategic Green Belt Assessment identifies the 'large built-up area' in Thurrock as the urban combined area of Chadwell St Mary, Chafford Hundred, Grays/Stifford Clays; Lakeside/West Thurrock, Little Thurrock/Socketts Heath, Purfleet, South Stifford Tilbury – this 'large built-up area' is located close to LTC and there is no Green Belt assessment included within the assessment for this purpose (a).

   The applicant's quote, above, is incorrect. The Council's Strategic Green Belt Assessment Study states LTC would 'create a more enduring boundary beyond the northern edge of Chadwell St Mary than currently exists along the northern edge of the town'. LTC introduces a major 3 lane road and associated development cutting through the countryside, to both the east, north-east and north of Chadwell St Mary. As stated previously, the Council's Strategic Green Belt Assessment Study was a high level assessment for the LTC element of the Study. LTC DCO should be supported by a robust detailed Green Belt assessment including areas such as Chadwell St Mary urban area and LTC, to conclude the level of harm to the Green Belt.

b. **To prevent neighbouring towns merging into one another** - 1 paragraph for Thurrock: *'The Project is for a highway scheme and to construct and operate the Project it would be necessary to install and divert multiple utilities including overhead electricity powerlines, high-pressure gas*

ExQ1	Question to:	Question

pipelines and other utility networks and their associated infrastructure (see Section 2 of this Planning Statement). The Project would not cause the merging of towns.'

Council response:
The applicant's Green Belt assessment for Purpose (b) above does not provide any Green Belt assessment of LTC against this purpose – it is simply a description LTC and an assertion. LTC is routed between settlements in Thurrock and would introduce development between settlements. Therefore, this purpose is relevant to the LTC Green Belt assessment in Thurrock. LTC would present new development in the Green Belt between the settlements, including Grays/Stifford Clays & Orsett; Chadwell St Mary and Orsett; and Chadwell St Mary and Linford. There would be harm to the Green Belt in these locations. For example, the proposed design of the A13/A1089/LTC junction provides extensive provision for vehicle movements which requires land to be taken from the Green Belt. The Council has examined the operation of the junction and prepared an alternative proposal which delivers the same operational arrangements in a smaller area. Using this alternative proposal would reduce the amount of Green Belt land required for LTC and therefore reduce the overall harm to the Green Belt. The Council is disappointed that the applicant will not consider this alternative proposal and will not provide the operational modelling details, which they have used to justify their proposed arrangement which takes excessive amounts of the Green Belt. This is an example, where a robust detailed Green Belt assessment is required, to conclude the level of harm to the Green Belt in the local area and inform the alternative selection and design process.

c. **Assist in safeguarding the countryside from encroachment** - 1 paragraph for Thurrock: *'The Project includes new public open spaces such as Tilbury Fields which is beneficial in terms of retaining the openness of the Green Belt and safeguarding the countryside from encroachment. Proposed woodland planting/restoration helps mitigate the visual impacts of the Project, provides an ecological and community resource and makes a contribution to the Green Belt objective of safeguarding the countryside from encroachment.'*

Council response:
The applicant's statement above does not summarise a Green Belt assessment for LTC against this purpose – it is a description of new open space such as Tilbury Fields. A robust detailed Green Belt assessment is required, for land around settlements within Thurrock, to conclude the level of harm to the Green Belt against this purpose and inform the alternative selection and design process. The location/area of Tilbury Fields is already land within the Green Belt and already contributes to the openness of the Green Belt.

d. **To assist in urban regeneration, by encouraging the recycling of derelict and other urban land** – *'The Project would have economic, community and transport benefits, set out in Chapter 4 of this Planning Statement, in which Table 4.2 provides a summary of how the key benefits of the Project support the Scheme Objectives. The economic growth benefits that the Project will deliver could assist in urban regeneration.'*

Council response:
The potential opportunities for the LTC to assist in linking to urban regeneration in Thurrock, have been ignored. For example, providing a junction at Tilbury and Tilbury Link Road to provide links from Kent to south of Thurrock, which includes Tilbury Port (and future expansions), Grays and potential future urban growth (1000s of new homes).

ExQ1	Question to:	Question

Potential harm to the Green Belt openness

L.3.17 The applicant's assessment of harm to the openness of the Green Belt for the whole LTC route in Thurrock is set out in *italics* below. The Council's response is set out beneath the NH conclusions.

a. Paragraph E6.18 *'Towards the A13/A1089/A122 junction some views would be restricted but the overall sense of openness would remain. There would be additional embankments and an overbridge at the A13/A1089 junction although the impact on openness would be limited due to the existing road infrastructure.'*

b. Paragraph E.6.21 *'All above-ground areas would experience some degree of loss of spatial and visual openness. This would be greatest between the South Portal and the A2/M2, and between the North Portal and A13.'*

Council response:
The Council's response set out in L.2.52 (b) above, in relation to the A13/A1089/LTC, is relevant here. The conclusions on the harm to openness in the Green Belt for LTC in Thurrock is covered in just 2 paragraphs in this document. LTC takes up 10% of Thurrock landmass which is completely within the Green Belt and this Planning Statement conclusion is completely insufficient to base a decision on 'very special circumstances'. It underplays the significance of harm to the Green Belt openness.

L.3.18 Although listed in Planning Statement Appendix E (APP-500), there has been no use of the Thurrock Strategic Green Belt Assessment to inform the LTC Green Belt assessment – in terms of:

a. *Categorisation of settlements* to align with NPPF policy wording 'large-built up areas' and 'towns'.

b. *Identifying Green Belt parcels* - LTC DCOv1 Planning Statement (Chapter 4 – Green Belt) (October 2020) (**Annex 7**) included a summary of the Green Belt assessment, where Green Belt Parcels identified in Plate 4.2 (page 97) match the parcel boundaries of the Thurrock Strategic Green Belt Assessment (2019), which was welcomed by the Council as this provides consistency. However, within this DCO, the use of Thurrock parcels has been dropped and instead Local Landscape Character Areas (LLCAs) have been used as Green Belt parcels. It is unclear why this has been changed and it makes comparison with the Thurrock Strategic Green Belt Study extremely difficult.

c. Using the results of Thurrock Green Belt assessment for parcels, to inform the assessment of LTC within the Green Belt.

L.3.19 Thurrock Strategic Green Belt Assessment is a robust assessment of the Green Belt in Thurrock. NH should have used Thurrock Strategic Green Belt Assessment as the baseline for the categorisation of settlements, identification of parcels and used the Green Belt assessment results of the Study to inform the LTC Green Belt assessment.

L.3.20 As a side note and although not part of the DCO, the Council note that the LTC DCOv1 Planning Statement (Oct 2020) (Appendix L, Annex 7) Chapter on Green Belt included a summary of the Green Belt assessment using the same parcels used in the Thurrock Strategic Green Belt. In the DCO the parcels are based on Local Landscape Character Areas (LLCAs). DCOv1 Green Belt assessment summary was based on the purposes of the Green Belt and DCO Green Belt assessment does not include any assessment of parcels against the NPPF purposes. The Council can

ExQ1	Question to:	Question

therefore conclude that the applicant has at some point undertaken a Green Belt assessment using parcels set out in the Thurrock Strategic Green Belt Assessment and they were assessed against the purposes of the Green Belt, set out in the NPPF. This was then changed to an assessment for LLCAs. The applicant has not provided a copy of the Green Belt assessment which informed the DCOv1. The DCOv1 Green Belt assessment summary seems to be taking a more suitable approach in terms of methodology for assessment, though the Council raised concerns about the accuracy of the assessment results, which were submitted to NH (Appendix L, Annex 6 - see section covering Chapter 4). At that time, Thurrock's response concluded that without a correct assessment of the Green Belt, it raises questions to whether the right option was selected in Green Belt terms, and then for the preferred route and design, and whether the right mitigation has been selected to minimise the impact on the Green Belt. The applicant's approach to Green Belt methodology and assessment is set out in full and seems to be not robust and muddled within the landscape assessment, which makes it very confusing for the reader.

L.3.21 The Council would expect to see a standalone Green Belt Assessment Study for LTC, which sets out a clear, comprehensive and robust methodology and assessment of the Green Belt, against the fundamental aim and the purposes of the Green Belt. For a project of this scale, this would be in two parts: a Strategic Green Belt Assessment Study to inform the assessment of alternatives; and, a Detailed Green Belt Assessment Study to inform the preferred route and design, as well as construction and displaced elements, such as compounds and haul roads.

L.3.22 The Council conclude that the applicant has not undertaken a robust Green Belt assessment to evidence the level of harm to the Green Belt and therefore do not have the information available to demonstrate 'very special circumstances'.

L.3.23 It is important that the applicant has undertaken a robust Green Belt assessment to evidence the level of harm to the Green Belt, so that the ExA and SoS can make an informed decision on whether 'very special circumstances' apply.

L.3.24 Therefore, the DCO submission does not comply with national policy NSPNN paragraphs 5.164, 5.170 and 5.178.

Summary

The Council sets out its full review of the applicant's Green Belt assessment work in the Council's LIR Appendix L Annex 1 (REP1-293).

The applicant should undertake a Green Belt assessment against the effects on openness and against the purposes of the Green Belt, as set out in national policy and above. The Council suggest (without prejudice) that the effects on the Green Belt, on openness and against the purposes of the Green Belt, could be particularly pronounced at the following areas:

1. **At A13/A1089/LTC junction, which covers 112 hectares to deliver this junction in the Green Belt. The junction is a complicated design layout and has a large land-take, which could be reduced through proper option appraisal (as set out in the Council's LIR Appendix L Annex 1 (REP1-293), which should be informed by a Green Belt assessment. The amount of Green Belt taken by LTC in this location could be reduced.**

ExQ1	Question to:	Question
2. Between settlements either side of LTC, e.g. Orsett and Grays Urban Area; Orsett and Chadwell St Mary; Chadwell St Mary and Linford; Tilbury and East Tilbury – where LTC is close to settlements, this may encourage development up to the road and may reduce Green Belt land between settlements. 3. There may be other locations in Thurrock, which would be identified in a full and robust Green Belt assessment for LTC, which has not been undertaken by the applicant, but should of been part of the DCO evidence base/application documentation. As stated above, the Council has not undertaken a full Green Belt assessment for LTC within Thurrock. Therefore, the above list has not been assessed by the Council. A full Green Belt assessment (against 'openness' and purposes of the Green Belt, as set out in national policy) should of been undertaken by the applicant, in terms of how LTC impacts on points 1-3 above, and made available to ExA and the Council for review. This should have informed the options for design of the preferred route. It will then be possible to answer the ExQ1 more fully. The second part of the ExQ1 asks *'whether there are locations where effects on openness would be avoided or at the lower end of the harm scale.'* It is extremely difficult for the Council to answer this question, without viewing a full Green Belt assessment for LTC, as set out above. The onus is on the applicant to set out the level of harm to the Green Belt along the LTC route through Thurrock. LTC takes up 10% of Thurrock's local authority area, all of which is within the Green Belt. The onus should be on the applicant to provide the evidence/assessment of harm to the Green Belt, which enable assessing whether 'exceptional circumstances' has been demonstrated. The Council would expect to see a robust, standalone Green Belt assessment for a scheme of this scale, both at the route selection stage and for then for the preferred route to inform the design, to be prepared by the applicant and available for the Council to review. A robust Green Belt assessment would set out the level of the harm to the Green Belt along the route, should take into account existing settlements and inform the design and mitigation for LTC.		
ExQ1	**Question to:**	**Question**
14.	**The draft Development Consent Order (dDCO), planning obligations, agreements and the adequacy of security**	
14.1	**Response to dDCO Questions Raised at ISH2**	
15.	**The acquisition and temporary possession of land and rights (CA & TP)**	
15.1	**Due Diligence**	
16.	**General and overarching questions**	
16.1	**General and overarching questions**	

ANNEX A

Lower Thames Crossing: Due Diligence and Monitoring of General CA & TP Objections

List of all objections to the grant of Compulsory Acquisition (CA) or Temporary Possession (TP) powers (ExQ1: Question 15.1.1).

In the event of a new interest in the land or Category 3 person being identified, the Applicant should inform those persons of their right to apply to become an Interested Party under s102A PA2008 and advise the ExA at the next available deadline.

Obj No.[i]	Name/ Organisation	IP/AP Ref No[ii]	RR Ref No[iii]	WR Ref No[iv]	Other Doc Ref No[v]	Interest[vi]	Permanent/ Temporary[vii]	Plot(s)	CA?[viii]	Status of objection

i Obj No = objection number. All objections listed in this table should be given a unique number in sequence.
ii Reference number assigned to each Interested Party (IP) and Affected Person (AP).
iii Reference number assigned to each Relevant Representation (RR) in the Examination library.
iv Reference number assigned to each Written Representation (WR) in the Examination library.
v Reference number assigned to any other document in the Examination library.
vi This refers to parts 1 to 3 of the Book of Reference:
- Part 1, containing the names and addresses of the owners, lessees, tenants, and occupiers of, and others with an interest in, or power to sell and convey, or release, each parcel of Order land;
- Part 2, containing the names and addresses of any persons whose land is not directly affected under the Order, but who "would or might" be entitled to make a claim under section 10 of the Compulsory Purchase Act 1965, as a result of the Order being implemented, or Part 1 of the Land Compensation Act 1973, as a result of the use of the land once the Order has been implemented;
- Part 3, containing the names and addresses of any persons who are entitled to easements or other private rights over the Order land that may be extinguished, suspended or interfered with under the Order.

vii This column indicates whether the applicant is seeking compulsory acquisition or temporary possession of land/ rights.
viii CA = compulsory acquisition. The answer is 'yes' if the land is in parts 1 or 3 of the Book of Reference and the applicant is seeking compulsory acquisition of land/ rights.