Appendix 1: Traffic Modelling

- Further investigations by HE are required into why "links" in Lambs Lane South and Noak Hill Road have been identified within the traffic forecasting shapefiles and the Lower Thames Crossing Traffic Forecasts Non-Technical Summary Report as having increased traffic volumes as a result of Lower Thames Crossing.

- The Council requires that the following junctions be included and assessed as part of the traffic modelling work:

  A12/North Street
  A12/ Pettits Lane
  A12/Harold Court Road
  A12/Gubbins Lane
  Gallows Corner
  A127/Ardleigh Green Road/Squirrels Heath
  A127/Wingletye Lane
  A127/Hall Lane
  A127 Front Lane
  Marsh Way Junction
  A13/ A1306 Wennington Road
  A124/Station Road/B1421 (Bell Corner)

Appendix 2: Local Highway Impacts

A.1 Highways

General arrangement plan (reference to sheet 18)

- The LTC will also create a second overbridge to the north of the LTC alignment which is close to the rail bridge over the Upminster and Grays Branch. Officers require further discussions with HE about the potential for this bridge to be replaced because it does not meet the 40-tonne standard. The bridge is humped and so it will be critical to understand the vertical alignment for the realigned Ockendon Road more generally.

- For the new bridges over the M25/ LTC, the Council should be involved at an early stage to ensure that our ongoing maintenance liabilities are minimised and that maintenance issues are designed out. For example, the lighting we manage on the existing Ockendon Road bridge is extremely difficult to maintain.

General arrangement plan (reference to sheet 19)

- There is a reference to a public footpath diversion. It is not clear if this is a public footpath or just a path within the Thames Chase Site.
- Further detail is required in terms of the existing structure and the new structure carrying the LTC slip road to junction 29. There are unlikely to be significant interface issues, but again, to the Council should be involved at an early stage to ensure any future liabilities for maintenance are limited and our maintenance needs designed in with the scheme. Officers note there appears to be a new access to a pond to the west of the LTC alignment.

General arrangement plan (reference to sheet 20A)

- The overhead powerline works will likely have some local impacts on roads such as Front Lane and this will need to be discussed with officers in greater detail.

General arrangement plan (reference to sheet 21)

- The existing Folkes Lane footbridge is to be replaced and the Council expects the maintenance responsibility to lie with Highways England.

Construction phase

- As the plans develop, the Council expects to be briefed on what impacts might accrue in terms of impact on the M25 and therefore the A127 and borough roads. Information on network resilience and contingency plans for incidents is also required by the Streetworks and Emergency Planning teams.

Information is required on the extent, frequency and duration of any access directly from borough roads as the design develops.

Appendix 3: Noise & vibration

- The Council has concerns that the 3dB criteria used as the threshold for the impact being perceptible for long term scenario, is too high. This conflicts with the criteria for the Noise Insulation Regulations which are aligned with the short-term criteria being used for this scheme.

Appendix 4: Geology & soils (contaminated land)

- Apart from the intrusive ground investigation, detailed human health and controlled waters risk assessments should be carried out.
- If piling techniques are used to construct structures within the project, a suitable Piling Risk Assessment should be carried out, to ensure that there will be no unacceptable risks to groundwater.
- Any reuse of soil and excavated materials on site should be carried out following advice from the Environment Agency. The CL:AIRE Definition of Waste: Code of Practice should also be used as a guide.

Appendix 5: Heritage and Archaeology

Heritage

- Within the introduction, the report correctly explains that there are expected to be interrelationships between the potential effects on cultural heritage and other disciplines reported on in the PIER. Whilst this is accurate, it is important that aspects such as the analysis and interpretation of historic landscapes is considered within both the Cultural Heritage and Landscape chapters to better inform the conclusions of each discipline.

- Similarly, potential impacts of noise and vibrations must also be analysed and interpreted within the heritage section given these have the potential to alter how we experienced and interpret heritage assets - as well as potentially cause damage to their fabric in the case of vibration. This approach is supported by Historic England's GPA3 – Note 3 (Second Edition) The Setting of Heritage Assets.

- With regards to methodology, the PIER does not appear to reference nationally recognised guidance relating to heritage such as Conservation Principles, GPA 2 – Managing Significance in Decision-Taking in the Historic Environment or GPA 3 – The Setting of Heritage Assets.

Archaeology

- The document under section 7.5.6 identifies the need for trial trenching to allow the EIA to provide a sufficient assessment of the significance of the historic environment assets along the route and as a method to check apparently blank areas. This is to be welcomed, as previously discussions had indicated that this would be left to a later date following the DCO process.

- The document states that only the setting of designated assets such as listed buildings and Scheduled Monuments will be assessed, however, it is recommended that consideration should be given to assessing the setting of significant non-designated assets such as the moated complex at North Ockendon Hall.

Appendix 6: Landscape Implications

Landscape

- The PEIR refers to appropriate Havering Local Landscape Policies; Policy 27: Landscaping and Policy 29: Green Infrastructure. As the project develops, it is important to understand how green infrastructure will play a role in the scheme's landscape and ecological mitigation design and this should be reviewed throughout the course of the development.
- Visual and landscape effects during construction and operation of the identified receptors have been suitably outlined and mitigation measures provided. However, it is unclear whether the ZTV has taken into consideration the visibility of storage land for spoil, excavation areas for balancing ponds and material storage areas, or whether it is solely based on the ZTV of the proposed crossing route. Unless clarified, it is recommended that further assessments are made for the areas that will be affected during the construction phase of the project
- A detailed study area extending up to 2km on either side of the proposed project route centre-line has been used to select 54 key visual receptors. These have been identified as part of the desk based and field survey work within the 2km ZVI.
- However, due to the extent of the site and its intrusion in the landscape, it's crucial that locations at all distances of potential visibility are assessed, even if only minimal viewpoints at the 5km extent are discovered, these views may critical in defining the overall landscape and visual impact of the proposal. It is therefore necessary that additional viewpoint locations are proposed based on the 5km ZTV and are assessed and verified as part of the winter field survey work during 2018/2019.
- Scheduled Ancient Monument designations have not been identified on the plans included in Volume 3a. Figure 8.5. The inclusion of this designation is necessary as it will be informative in understanding some of the identified receptors and viewpoints.

Appendix 7: Biodiversity

- The potential impact on all the relevant species and habitats must be effectively assessed and appropriate mitigation and compensation measures developed to minimise adverse impacts on health and the environment as agreed with DfT. In delivering new schemes, the Government expects applicants to avoid and mitigate environmental impacts in line with the principles set out in the NPPF and the Government's planning guidance.
- There will be opportunities to enhance parts of the site, by creating Priority Habitats such as hedgerows, to improve connectivity across the landscape to mitigate for disconnections caused by the new road. The Ecology chapter of the Environmental Information Report should thoroughly explore all reasonable options to enhance the development for biodiversity including Protected and Priority Species to support the Highways England Biodiversity Action Plan and in response to local conservation priorities.
- It is welcome the statement in 9.1.7 that the survey data contained within the Terrestrial Biodiversity chapter will be used to inform the separate Habitats Regulations Assessment (HRA) which is being prepared to support the project's Development Consent Order application.
- Table 9.1 of the PEIR also includes the statement that "The project must also ensure legislative compliance to legally protected species." However, there is no mention of Wildlife & Countryside Act 1981 Schedule 9 species (invasive) which require the applicant to avoid releasing or allowing to escape into the wild, any animal which is not ordinarily resident in Great Britain and is not a regular visitor to Great Britain in a wild state or is listed in Schedule 9 to the Act. It is also illegal to plant or otherwise cause to grow in the wild any plant listed in Schedule 9 to the Act.
- Although the EIA Scoping report (Section 9.4) identified the desktop assessment request would include both the Essex Recorders Partnership (ERp) co-ordinated by Essex Field Club (EFC) and Essex Wildlife Trust (EWT), we are concerned that only terrestrial data held by EWT Biological Records Centre (BRC), ecological data is included in the PEIR. There is also no reference to Greenspace Information for Greater London (GiGL) https://www.gigl.org.uk/ for records within Havering for biodiversity and geodiversity (in conjunction with London Geodiversity Partnership). There is reference to Hall Lane Road Cutting (A127) in Table 11.7 of the PEIR and para 11.4.24 refers to local geological sites in Essex and Kent, but not Greater London. If EFC and GiGL have provided this data, it is recommended that these sources are added to the PIER and added to the Environmental Constraints map (or if not, Table 9.27 for the updated desk study) to ensure additional records are available to inform the assessment of likely impacts for the ES.

- Whilst potential impacts on notable species are being noted, it is recommended that throughout the ES, the text adequately identifies all the relevant Priority (s41) habitats and species to ensure these are being effectively assessed. For example, Open Mosaic Habitat (on previously developed land), is a Priority s41 Habitat that needs to be accurately reflected in the ES, particularly as the Development Boundary includes large areas of this habitat. References to arable field margins and heath/acid grassland as habitats of principal importance (Priority Habitat) in para 9.4.23 and Slender Hare's-ear and Sea Barley as species of principal importance (Priority Species) in para 9.4.30, 9.4.34, 9.4.88, 9.4.113 and 9.4.151, are however noted. As records from the EFC data search have not been provided, the records obtained from EWT BRC may underestimate the impact of the project on Protected and Priority species.
- Havering welcomes the statement that the Northern Thames Basin National Character Area (NCA) is important for a farmland bird assemblage and farmland birds listed in Schedule 1 of Wildlife & Countryside Act 1981 - Barn Owl, Brambling, Fieldfare, Quail and Redwing - have the potential to be present within the Development Boundary, specifically to the north of the project within the Northern Thames Basin NCA, although Fieldfare is listed as a breeding species in Scotland. However, of these species, Barn Owl is resident year-round, Quail is a scarce summer visitor and the remainder are only winter visitors.
- Regarding species listed in Birds of Conservation Concern (Eaton et al., 2015) as 'red' or 'amber', it is important to note that the majority of red listed species are also listed on Section 41 of the NERC Act (2006). Please note that farmland birds listed in Table 9.22, should be identified as Priority Species where appropriate, to allow impacts to be assessed and measures identified to allow the Sec of State to demonstrate compliance with NERC duty to conserve biodiversity and deliver net gain.
- The PIER (para 9.4.116) suggests that Northern Thames Basin NCA is suboptimal for bats although it is a generalisation with respect to roosting and foraging and does not consider important migration routes for Nathusius' Pipistrelle known to use river valleys at particular times of year (see Table 9.24).
- Stands of invasive non-native plant species have been identified including Japanese Knotweed in discrete locations within the proposed Development Boundary. Appropriate procedures will need to be incorporated into the Construction Environmental Management Plan (CEMP) and Landscape & Ecology Management Plan (LEMP) for the Development.
- Opportunities to deliver enhancements need to be explored in consultation with appropriate stakeholders as a mechanism to deliver net gain for biodiversity. This is in line with The NPSNN Paragraph 5.33 and reasonable opportunities to deliver environmental benefits as part of schemes are required

under Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009.

- There will be opportunities to enhance parts of the site, by creating Priority Habitats such as hedgerows, to improve connectivity across the landscape particularly to mitigate for disconnections caused by the new road. The Ecology chapter of the ES should thoroughly explore all reasonable options to enhance the development for biodiversity including Protected and Priority species to support the Highways England Biodiversity Action Plan.
- It is considered this project will incorporate a sustainable drainage system (SuDS) to reduce hydraulic loading on sewers etc. There will therefore be scope for ecological improvements through SuDS and improved water quality where possible.