

Classification: Public

Key Decision: No

Gravesham Borough Council

Report to: Council

Date: 18 December 2018

Reporting officer: Director (Housing & Regeneration)

Subject: Lower Thames Crossing

Purpose and summary of report:

To formulate the Borough Council's response to the statutory consultation by Highways England on its proposals for a Lower Thames Crossing

Recommendations:

1. That Highways England (HE) be thanked for carrying out the statutory consultation process whilst noting that insufficient time has been allowed to properly digest and respond to it given the volume of material involved
2. That the resolutions of 8 December 2015, opposing in principle a new Lower Thames Crossing (LTC) to the east of Gravesend, be re-affirmed.
3. That the Council is of the view that LTC will only provide temporary alleviation of congestion at Dartford and will only defer a requirement to take action at that location.
4. That the Council considers the Preliminary Environment Information Report (PEIR) to be deficient in a number of areas and it fails the requirements of the relevant Regulations.
5. That the Council considers further design work, environmental assessment and consultation will need to be carried out and that this should include a reconsideration of whether the tunnel can be extended further to the south and options for mitigation in the vicinity of Riverview Park and the area around Thong.
6. That the environmental impact of the new LTC/M2 junction and works on the A2 corridor is unacceptable and further detailed work is required to provide a more acceptable solution.
7. That the Council has a general preference for the Gravesend East junction to connect direct to the A2/M2 east-bound but that it is not in a position to make a definitive judgement in the absence of a proper assessment of alternative junction designs and detailed highway modelling.
8. That the Council cannot provide a definitive view on the issue of variable charging, given the lack of transport modelling and consequential environmental impacts.
9. That, in any event, the Council considers the transport modelling needs to better reflect the development requirements of the Government for EIA purposes to allow the likely significant environment effects of the scheme to be assessed.
10. That the contents of this report, the appraisal and the responses to the consultation questions set out in App. 2 be submitted to Highways England, with the Director (Housing and Regeneration) being granted delegated authority to make minor amendments.

1. Introduction

- 1.1 Highways England commenced its Statutory consultation on its proposals for a Lower Thames Crossing on 10 October 2018. The Council needs to submit its comments by the end of 20 December 2018. The legislation does not permit late submission, however from the Borough Council point of view this does form part of an ongoing engagement process.
- 1.2 In outline the scheme is designed to be a three 3 lane 70 mph motorway running from the M2 Junction 1 to M25 Junction J29 (A127) with a total length of 31km, with an intermediate junction onto the A13 and the provision of a 'rest' area just north of the 4 km tunnel under the Thames. The cost is estimated to be in the order of £6.8bn.
- 1.3 Appendix 3 contains a technical appraisal of the material that has been published as part of the consultation. This includes the current scheme design, the results of transport modelling and the Preliminary Environmental Information Report (PEIR). It is important to note that details of the scheme continue to evolve and, in some areas, much additional work remains to be done. The scheme as consulted upon is therefore a work in progress and thus there is much that could change.
- 1.4 This appraisal is focused on the route south of the river as it affects Gravesham, plus some of the wider implications on the Kent Highway network. Some of the issues, however, will be in common over the whole route, in particular methodological matters, the transport model and there will be environmental concerns in common with Thurrock. There is also the difference between looking at the strategic transport issues in the context of the wider South East and the international links, and local environmental impacts on residents, nature conservation, landscape, historical features etc.
- 1.5 The response to this consultation is therefore intended to comment on what has been done to date and what Highways England is proposing to do. It does not represent the Council's final position on a detailed scheme, which will need to be determined when there is a final scheme to comment on and the Development Consent Order is submitted. Issues not seen currently as major concerns may emerge as such or equally vice versa.
- 1.6 This report also includes a brief outline of the Development Consent Order process (DCO) and the future timetable as currently understood.
- 1.7 Appendix 4 contains a glossary of the many terms and abbreviations used. There is some duplication of material between this report and the technical appraisal so that they can be read as independent documents.

2. Council's current position

- 2.1 The Borough Council's base position is defined in the resolution passed unanimously by Council on 8 December 2015, which said:

This Council reaffirms its opposition to the siting of a new Lower Thames Crossing to be east of Gravesend, which would have significant detrimental impacts including threatening areas of outstanding natural beauty and

internationally significant nature Conservation Areas, this threatening the biodiversity that their status seeks to protect.

Moreover, all communities in Gravesham would potentially suffer air quality issues as congestion on local roads will be exacerbated as drivers seek to avoid problems elsewhere on the highway network.

The Council calls upon the Government to reject Option C and investigate alternatives that will be less damaging and create fewer problems for communities

- 2.2 The Council's 2016 consultation response reaffirmed its opposition to a route east of Gravesend.

3. Development Consent Order Process

- 3.1 What are defined as Nationally Significant Infrastructure Projects (NSIP), as a result of the Planning Act 2008, have to go through the process of obtaining a Development Consent Order (DCO). This is a statutory instrument which not only deals with planning permission but all the other consents that are needed from other legislation, including compulsory purchase of land. It is therefore more akin to a mini Act of Parliament than a planning permission, with 'requirements' replacing normal planning conditions. Legal agreements under s.106 of the Town and Country Planning Act 1990 are permissible.
- 3.2 The DCO is written by the applicant and sets out the necessary permissions being sought – including CPO, permissions under other legislation and the temporary occupation of land required for construction. The Planning Inspectorate (PINS) has already determined that Environmental Impact Assessment (EIA) is required and its scope.
- 3.3 The Planning Inspectorate website has a series of notes explaining the process¹ and some advice notes². The information presented here is a brief summary of the process.
- 3.4 EIA scoping was carried out in autumn 2017. Highways England submitted what it thought it was going to cover to PINS, who, having consulted Local Authorities and other relevant bodies, issued an opinion. Highways England is required to respond to all the points made by the consultees as well as specific issues raised by PINS.
- 3.5 There have been a whole series of on-going meetings with Highways England to discuss a wide range of topics, which will continue. It has to be said that these have been somewhat sporadic and have not resulted in the Council receiving a great deal of information. As an example, the current A2 junction design plans were not available for consideration prior to the start of consultation. It should be noted that the Council was also asked to enter into a 'confidentiality agreement' with Highways England to allow information to be released. This is very unusual and is not considered to be a particularly satisfactory arrangement.
- 3.6 The current consultation is a 'Statutory consultation', which is required by the 2008 Act. It is left to the applicant to decide what further consultation is required,

¹ <https://infrastructure.planninginspectorate.gov.uk/application-process/the-process/>

² <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

which may be across the whole scheme or targeted on specific issues. The whole principle of the process is that issues are identified and discussed up front and, where possible, agreed before submission, leaving contentious matters for the examination. A Statement of Common Ground will need to be agreed with Highways England.

- 3.7 The Council has already had informal and formal consultation on the Statement of Community Consultation (SoCC). This sets out how the applicant intends to carry out the required consultation in terms of audiences and process. In this case there are several obvious audiences: those who wish to see additional crossing capacity, potential users and the local residents and businesses that have to live with the consequences.
- 3.8 The next formal stage is the submission of the DCO itself and all the supporting material (EIA etc.). Currently Highways England intends to do this in autumn 2019. Once the DCO is submitted, PINS then has 28 days to determine whether it is a valid application. This process includes consulting the relevant Local Authorities as to whether adequate consultation has been carried out under the terms of the SoCC.
- 3.9 If the application is accepted, members of the public and others can register an interest and make submissions on the proposal. The Local Authorities can also prepare a Local Impact Report (LIR), which sets out the implications of the project for the locality. This is a factual document as opposed to any submissions the Council may wish to make to explain its position on the proposal.
- 3.10 The next stage is for PINS to appoint an Examination Authority, which in this case can be assumed to be a Panel of Inspectors, which will hold a preliminary meeting to discuss the timetable of the examination. They will then have six months to carry out this process which is likely to include holding examination sessions.
- 3.11 Once this stage is complete the Examination Authority has three months to prepare a report to be sent to the Secretary of State (in this case for Transport). The Secretary of State then has 3 months to issue a decision, which can be subject to Judicial Review provided a claim is submitted within six weeks.
- 3.12 The scheme as submitted in the DCO is fixed, though there is a process for amending it which is not simple. On a scheme of this scale it is reasonable to assume that significant changes may be needed somewhere through the process, particularly in relation to construction.

4. Appraisal

- 4.1 Listed in appendix 2 are the various documents have been appraised in so far as has been possible in the time available. As noted above, discussions are ongoing but this report rests on the consultation material unless otherwise specifically indicated. It is considered the 10 week consultation period has been inadequate to assess this volume of material, even with employment of consultants.
- 4.2 Set out below are brief summaries of the issues arising and about which further information will be found in appendix 3. It is set out in terms of grouping the consultation documentation together. The discussion below then brings this together and informs the recommendations.

Design

- 4.3 The overall scheme links the M2 to the M25 with the clear objective of providing a strategic link, in particular bypassing the Dartford Crossing, for traffic seeking to go from mid and east Kent (including Dover and the Channel Tunnel) to East Anglia, the north side of London and further north. The same applies to traffic coming around the south side of M25 and seeking to go to Essex. It is not specifically designed to link North Kent and South Essex for local traffic, as the junction designs do not easily allow this. The best examples of this are the omission of the Tilbury link and the lack of connections to the A13 westbound.
- 4.4 The consultation in 2016 included eastern and western link options in Gravesham, with the western option designed with a 50 mph compact junction onto the A2 which just intruded into the Kent Downs Area of Outstanding Natural Beauty.
- 4.5 The scheme has now become far more complex with a four lane M2 in the centre, two lane connector roads on each side mainly for A289 and A2 traffic into or around Strood. There is also a 2-way link road from Marling Cross to Halfpence Lane. At Marling Cross connections westbound are not affected but those eastbound are.
- 4.6 The scheme impacts on the current layout of Marling Cross Junction (Gravesend East). The eastbound slip from the top of Valley Drive feeds onto the new Crossing and not the A2 as currently. As a result of this access to the M2/A2/A289 is via the Marling Cross A2 bridge, the proposed link road, Brewers Road, and onto the north side connector road. It is then possible to access A289, A2 into Strood or slip across onto the M2. This is very convoluted. The reverse route is more direct but the net result is disruption to local connections and therefore there are implications for the local road network.
- 4.7 The A2 junction is multi-level, with slip roads passing below and above the A2 (three lanes through the junction), which is itself moved slightly north. The highest slip road (LTC to A2 West) is likely to be very visible in the landscape, although this is difficult to assess given the inadequacy of the drawings. It is shown as crossing a box structure but in design terms this should be a bridge/viaduct. The slip roads combine across the land south of Riverview Park and come together at the Thong Lane north bridge, which is at a local high point, where the route enters into a cutting.
- 4.8 The cutting is around 28m deep at the southern tunnel portal, which has been moved about 600m further south than originally proposed. The road here descends at a maximum permissible 4% gradient, with the low point under the Thames as a controlling factor. The North Kent Marshes Ramsar/SPA and A226 are passed beneath in a twin bore tunnel.
- 4.9 Comments on the design being consulted on are provided later in this report.

Transport modelling

- 4.10 Since the 2016 consultation a new transport model has been built based on 2016 data (originally the model was 2009 based and is now out of date). This has used new data sources, for example mobile phone data. The outputs from the model and its validation are voluminous so it has not been possible to analyse them in great detail.

- 4.11 KCC commissioned Peter Brett Associates (PBA) to look at the validation and modelling reports and this has been very helpful in getting to the core issues. The main points are:
- The model validates well on the strategic road network
 - The number of points and accuracy of the results for the local road network are disappointing – for which reason little analysis has been done at this level to date
 - Levels of development in the forecasting reflect WEBTAG guidance for a business case but this is inadequate for assessing the Environmental Impact given the development inputs are seriously reduced
 - The modelling results show increased traffic on the M2/A2 to the crossing junction and less traffic on M20 west of A229 and A2 west
 - The A228 and A229 show increases in traffic, more especially in terms of HGV's
 - The Dartford Crossing shows some relief initially, and a reduction of HGV movements, but by 2041 this benefit has largely disappeared – particularly at the north-bound tunnel. It appears therefore that LTC does not provide a permanent solution to congestion at Dartford but only allows further time to increase capacity on the M25/A282 corridor.
- 4.12 As noted above, the forecasting report rests on a set of assumptions about development and highway schemes derived from DfT guidance (WEBTAG). However, this is primarily intended to assist in the construction of a Treasury 'Green Book' compliant business case against which differing options and schemes can be compared on a level playing field. It is not necessarily sufficient for the purposes of EIA and this is also recognised in associated guidance (DMRB). This is important because the outputs derived from the transport modelling feed directly into a number of separate EIA modules.
- 4.13 One of the key scheme objectives for LTC is to support sustainable local development and regional economic growth in the medium to long term. For housing, MHCLG now provide a methodology for calculating the objectively assessed need, which is far in excess of what has been fed into the model in a number of instances.
- 4.14 Because for EIA purposes it is necessary to look at a reasonable worst case scenario so as not to understate impacts, it is logical that the development inputs into the model should reflect the scale of development that Government demands, particularly for housing. However, this is currently not the case and this needs to be addressed. Presumably Government would also wish to know that LTC properly meets the infrastructure needs of what it wants to see when spending £6.8bn of public money.
- 4.15 Whilst there are all sorts of issues surrounding what might actually be developed and what transport infrastructure is needed to support it, the outputs from the LTC do need to provide insight on what is actually needed should such levels of development come forward. It is likely that the issue relates not only to cross-river capacity but also the capability of the rest of the strategic network to handle the traffic. Put another way, any advantages from the crossing could be nullified unless there are associated improvements elsewhere that allow that capacity to be utilised. Even if those associated improvements do not come forward at the

same time, it is still necessary to understand what else would be required and the likelihood of it coming forward.

- 4.16 A claim has been made that the LTC would improve network resilience. Whilst it is true that additional capacity provided by an additional crossing would improve flexibility, the implication of incidents at either Dartford or LTC or both has not been tested. This still needs to be done given the potential for rat-running and congestion on the local road network. It is in this scenario that the A227 might become an attractive route for traffic on the south side of the M25 at times of stress.

Preliminary Environmental Impact Report (PEIR)

- 4.17 The consultation is accompanied by a PEIR. Advice issued by PINS provides guidance on the requirements in relation to the PEIR and the role it plays in the consultation process. When preparing their Statement of Community Consultation (SoCC), the applicant is required to state whether the proposal is a development requiring EIA and, if so, how it intends to publicise and consult on the PEIR.
- 4.18 The PEIR is required to contain sufficient information that is reasonably required for consultation bodies to develop an informed view of the likely significant environmental effects and any associated development.
- 4.19 Whilst the form the PEIR takes is not prescribed and it is not expected to contain the same level of detail as the completed Environmental Statement (ES), it still has to be sufficient for the consultees to understand the likely significant environmental effects of the development so that it helps to inform their responses at the pre-application stage.
- 4.20 Unfortunately, the current PEIR lacks sufficient information, detail and analysis of the likely significant environmental effects in a number of areas. For example, whilst the way in which the development may impact upon the environment is set out, there is often no consideration of the potential severity of that impact on sensitive receptors so the reader is unable to understand whether it is significant or not. This is aside from the fact that the development assumptions fed into the transport model are very light and are likely to understate impacts arising from traffic flows.
- 4.21 Also, whilst an Outline Environmental Masterplan is provided (Figure 2.4 of PEIR) providing information on mitigation measures, there is no way of understanding how these have been developed in response to actual impacts or their severity.
- 4.22 It will be for the applicant to decide whether or not it should undertake further targeted or wider consultation on the project to rectify this, although it is at its own risk if it does not. This is clearly important because the Council is obliged at the application stage to provide its view on whether the consultation has been adequate. Because of the deficiencies in the PEIR it is arguable at this stage that the consultation has not been adequate and that the commitments set out in the SoCC have not been met.
- 4.23 However, it is in the applicant's own interest to address such issues because advice issued by PINS clearly states that should the final ES be deemed deficient, it is possible that any submission would not be allowed to proceed to examination.
- 4.24 It should be noted that there is very little discussion within the PEIR on the in-combination impacts of the scheme with other projects. This will need to be

addressed as work on the ES progresses and agreement reached on what other schemes will have to be considered.

- 4.25 The next sections provide a synopsis of outputs from the PEIR in key areas, although it should be noted that a more thorough analysis is provided in the assessment and other documents appended to this report.

Air Quality

- 4.26 Air Quality is driven by the traffic modelling data. Environmental Health and our consultants Bureau Veritas have considered the results and in general the main comment is that, on the traffic numbers used, the levels worsen considerably at some locations, including those along the A2 Trunk Road at the boundary of Gravesham and Medway. Whilst the worsening does not create any new or additional exceedances of the National Air Quality Standards outside of the current A2 Trunk Road Air Quality Management Area it does cancel out much of the improvement already achieved to date.

Cultural Heritage

- 4.27 There are concerns that the PEIR does not address impacts on heritage assets particularly well and this should be revisited in discussion with key stakeholders. It is not clear how impacts have fed into the scheme design or how mitigation has been informed. There would also appear to be inconsistencies with the work on landscape in terms of severity of the impact.

Landscape

- 4.28 The entire scheme in Gravesham is either within, or within the setting of, the Kent Downs Area of Outstanding Natural Beauty (AoNB). The current arrangement on the A2 corridor was the result of careful consideration and negotiation at the time of construction of HS1 and the A2 widening in the late 1990s. The A2 carriageways were already separated and at different level, for geological reasons, which softens their impact. Whilst not entirely successful, it attempted to maintain landscaping between the differing elements to soften impact and to provide habitat. Under the proposed scheme, the transport corridor would become far more urban in character and much of this landscaping would be lost.
- 4.29 The current junction design expands to fill the entire area between the current northern boundary of the highway and HS1. This extends west on the south side to Marling Cross junction. The actual junction would be a major intrusion to the south of Riverview Park. The LTC approach road to the southern tunnel portal would be in deep cutting from Thong Lane northwards, which would be an intrusive and jarring feature in the local landscape which would be difficult to mitigate.
- 4.30 Whilst Green Bridges are proposed at strategic crossing points it is unclear what has informed their design. Overall, these could be significantly wider to provide better mitigation in terms of landscape and nature conservation impact.
- 4.31 It has not been possible at this stage to take a view on the position of signage, gantries or lighting given the lack of information provided. This will need to be looked at very carefully given it was an issue at the time of construction of HS1 and the A2 widening in the past.

Terrestrial and Marine Biodiversity

- 4.32 There is loss of ancient woodland and intrusion into the Ashenbank and Shorne Wood SSSI. There is additional noise, poor air quality and disturbance to the area. A Habitat Regulations Assessment is also promised for DCO submission. However, overall the PEIR provides insufficient information on what the level of impact on habitats and species is likely to be and how mitigation measures have been designed to deal with this.
- 4.33 Whilst the Council would normally defer to the expertise of Natural England, the Kent Wildlife Trust and other bodies such as the RSPB on such issues, the lack of more detailed analysis at this stage is worrying. This is particularly the case as one might have expected a more thorough understanding would have informed the choice of preferred route in April 2017.
- 4.34 A key issue may be the impact of the LTC on water levels on the marshes both during construction and operation. This will need to be fully understood.

Geology and Soils

- 4.35 The Cobham/Ashenbank area is well known for geological instability which caused a number of issues for HS1 in both design and construction. In particular the cutting through Ashenbank Wood had to have much gentler slopes than originally proposed, and therefore became much wider. Work has been done on the Thames tunnel but it is not clear whether the geology in the AoNB on the A2 corridor has been fully understood. There are also deposits of geological interest in the area which were investigated at the time of building HS1/A2 widening in the 1990s and the applicant will need to consult interested parties as they would appear to extend north of the A2 in the vicinity of the Inn on the Lake and may be present elsewhere on the A2 corridor.

Materials

- 4.36 The project needs to consider both the sources of materials used to build it (cement, aggregates, steel etc.) as well as the disposal of waste. The latter includes the chalk that will come from the deep cutting leading up to the portal. There is little information on this area yet as it requires a firmer design and construction arrangements. A Site Waste Management Plan will be produced, which will need to relate to the Code of Construction Practice

Noise and vibration

- 4.37 Comments on noise and vibration are provided in the assessment appended and the consultant's report. As with air quality, noise impacts depend, to a large extent on traffic volumes, speed, composition of traffic (i.e. percentage HGV's) etc. Given the identified deficiencies in the transport modelling, this will also require an updated assessment at which time the effectiveness of mitigation measures will need to be assessed. The noise report submitted with the DCO application should include proper noise contour mapping to allow impacts to be assessed, with and without the proposed mitigation to allow its effectiveness to be assessed. Noise impacts during construction would, of course, differ from those once the scheme becomes operational.

People and Communities

- 4.38 Whilst this section of the PEIR provides background information on affected assets and the local community in general, there is very little proper analysis of actual impacts. This will need to be addressed properly at the DCO stage. There would clearly be a significant impact on public rights of way used by non-motorised users and alternative routes both during construction and subsequently will need to be carefully looked at. No information has been provided as yet on the impact of the proposals on farm businesses in the area, only on the loss of the best and most versatile agricultural soils (Grades 1, 2 & 3a). Also, it is important that the final ES provides a realistic assessment of the impact of the project on the economy and people of Gravesham during both the operational and construction phases. At the current time, the impression is one of all pain and very little gain.

Road Drainage and Water Environment

- 4.39 This section provides information on the legislative and policy background in relation to road drainage and the water environment. Broad indications are given of how these issues will be dealt with during both construction and operation, including meeting requirements in relation to the Water Framework Directive and flood risk.
- 4.40 It is anticipated that the Environment Agency will be the main lead in terms of protection of the water environment, with potential input from KCC under its SUDS remit. The water environment in the area of Shorne/Ashenbank Woods is complex given the presence of perched water tables. Care will be needed to ensure that the hydrology of water bodies in this area is understood and impacts mitigated. As noted above, the impact of the project on the water environment of the marshes also needs to be fully understood given their nature conservation interest.

Climate

- 4.41 This chapter highlights the potential impacts that the scheme will have to be designed to deal with. The NPSNN highlights that this is both the contribution to climate change due to Green House gases both from construction and the traffic that will use it over the years. There are also the impacts of more extreme weather, in particular handling water from runoff (having created a channel to underneath the Thames) and also flooding, including rising sea levels. The PEIR currently identifies issues but does not address them.

Construction

- 4.42 The construction programme is a product of the design, and is naturally less well developed at the current time. It will be a very complex process. This is a major project which has a seven year construction programme. Assuming consent is given by the end of 2020, enabling works will start in 2021. These will include utility diversions, archaeological investigations, further ecological surveys, setting the main compounds etc. In Gravesham there are major services running along the A2, as well as the high pressure gas mains and 400Kv overhead line running between Thong and Riverview Park.
- 4.43 The Thames tunnel will be bored from Thurrock, so the spoil will come out north of the river to be moved on by road, rail or water. Construction of this is likely to last from mid 2021 through to the end of 2026. At Chalk a deep cutting will have to be

excavated to accept the tunnel boring machines arriving from Thurrock, which will then need to be dismantled and removed. The spoil will need to leave via the A226. Tunnel boring at least will be a 24 hour operation, but hours of operation elsewhere will need to be discussed

- 4.44 In Gravesham two major construction sites are proposed, one wrapped round the tunnel portal (and potentially extending north of A226) and one just south of Thong to serve the works on the A2. As well as the impact of these in terms of noise and disturbance from their operation, there is also the impact of the construction works themselves.
- 4.45 On the A2 these are likely to be major because of the complex junction and alterations to existing carriageways. Overall highway construction (not just on the A2) is expected to last from 2nd quarter of 2022 to 3rd quarter of 2026. 50 mph running, narrow lanes and possible reduction in lanes are likely to be required. Brewers Road Bridge will need to be shut for an unknown period as it has to be rebuilt online, whilst the two Thong Lane bridges can be done independently.
- 4.46 There are a large number of issues that arise from the construction process, a lot of the impacts which are unknown at this stage as to nature, scale and duration of activities. There will be a Code of Construction Practice which will be a major area for further discussion with Highways England.

Business Case

- 4.47 There is a document with general statements about the advantages of the scheme but at this stage no full business case, though there is material available from previous consultations. The Borough Council has always accepted the need for additional crossing capacity, though argued that it should be located at Dartford, where the bulk of the demand is. The point is also made that the benefits frequently come from time savings. If these are substantive there is clear benefit, but aggregating large amounts of small time savings does not constitute a practical gain, especially if they are easily lost elsewhere in the highway network.

Alternatives (locations)

- 4.48 It is considered that there are a number of issues with the assessment of alternative locations to date which will need to be addressed at the application stage. These include:
- Whilst the current consultation documents do provide Highways England's reconsideration of the merits of alternative locations to the Option C, there is a lack of transparency because it has not published the results of transport modelling using the LTAM nor the full assessment checklist for each option
 - As noted elsewhere within this appraisal, the inputs into the LTAM used to inform the transport case fail to reflect the scale of development likely to take place as a result of the Government's own growth agenda for the Thames Gateway. If the LTAM modelling has been used to underpin the re-assessment of alternatives, it too is likely to be flawed because it may understate flows on the strategic road network and the environmental impacts arising therefrom
 - As noted above, it is unclear what some of the scheme objectives actually mean and what criteria have been used when assessing the performance of options against them. For example, how is the term 'viable' defined and what threshold has been used to determine 'free flowing capacity'?

- Aside from what criteria and how different options are assessed, there is the issue of when. Again, it is unclear as to whether performance against the criteria is assessed at year of opening (2026/7) or the design year (2041)
- Scheme objective 4 is that the project should minimise adverse impacts on health and the environment. However, this cannot have been considered properly at the Preferred Route Announcement stage or even in the context of the current consultation because the necessary work is either incomplete or has yet to be done
- Similarly, scheme objective 6 is that the project should improve resilience of the Thames Crossings and the major road network. However, there is nothing within the consultation material to demonstrate how LTC would perform in this respect compared to alternatives. Whilst it would add capacity and provide an alternative crossing point, this is not the same as providing additional resilience in practice – this needs to be properly tested against a range of differing scenarios agreed with stakeholders
- Policy as set out in the NPSNN (at 4.27) clearly states that viable modal split alternatives should be appraised. Rail alternatives were ruled out very early within the 2009 study and have not been revisited in the past nine years³. Should this not be subject to re-appraisal given the time that has passed? What consideration has been given to additional passenger ferry crossings across the Thames to link major areas of development and to release road crossing capacity as part of a joined up approach to transport in this part of Thames Gateway?

4.49 The re-appraisal of the location C_{variant} option at Table 9.14 in the 'Approach to Design, Construction and Operation' document also appears to be very odd because it assesses improvements on the A229 Bluebell Hill in conjunction with a crossing at Dartford. However, at the 2013 consultation the C_{variant} option was taken to be an additional improvement put in place with Option C (i.e. LTC) and not Option A (Dartford). It would therefore appear that the re-appraisal has been wrongly undertaken in this respect.

4.50 For the avoidance of doubt, it is considered that improvements to the A229 as a strategic link between the M2 and M20 are likely to be required should LTC be built and that these improvements should be included within the DCO application as associated development. The cost of these works (and any others required to make LTC work) should also be added to the overall project costs when calculating the scheme's Benefit Cost Ratio (BCR).

Alternative (Design issues)

4.51 A number of changes have been made to the scheme since the Preferred Route Announcement was made in April 2017 as a result of further design work and in response to previous consultation. For the purposes of this assessment, comments are only made in respect of those changes to the scheme to the south of the river.

4.52 Notwithstanding the Council's continued opposition to the proposal in principle, should the scheme go ahead, a number of these changes are clearly beneficial in

³ See

<https://webarchive.nationalarchives.gov.uk/20100513123749/http://www.dft.gov.uk/about/strategy/capacityrequirements/dartfordrivercrossing/>

that they reduce the environmental impact of the scheme. This includes moving the southern tunnel portal and the omission of the A226 junction.

4.53 However, it remains to be seen whether further improvement is achievable or indeed whether the final design solution will be environmentally acceptable given the overall scale of impacts. With this in mind, the following comments are made on the design as it currently stands:

- Whilst the consultation material states that consideration was given to moving the southern tunnel portal further to the south, this was ruled out because of the space needed to locate gantries and signage in advance of it and cost. However, no actual technical appraisal has been produced in support of these contentions.

It is also stated that the maximum gradient of the road has been kept at 4% instead of being reduced to 3% both because it would require a longer tunnel and a deeper and wider cutting that would impact more on properties in Thong Lane and Riverview Park. Again, no technical appraisal has been provided that allows a judgement to be made on this.

It is suggested that Highways England should be asked to produce such material to allow a focused consultation to be undertaken on the issue of whether the tunnel is capable of being or should be extended. People need to be in a position to make an informed judgement as to whether the environmental benefits of such an extension would be outweighed by any dis-benefits. Without the necessary technical material, it is not possible to make meaningful comments on this seemingly reasonable alternative.

- Similarly, Highways England has asked whether there is a local preference for the Gravesend East junction to connect onto the A2/M2 eastbound rather than the LTC. Without sight of an alternative junction design and a sufficiently detailed analysis of highway/environmental/economic impacts it is impossible to make an informed judgement. Once again, the necessary technical material needs to be produced to allow a targeted local consultation to take place.
- It should also be added that no proper justification has been provided for upgrading the A2 junction to 70mph rather than maintaining a 50mph design speed as per the original 2016 consultation. Because this may have implications in terms of junction design and its environmental impact in a particularly sensitive area, the differences between a 50 and 70mph junction should be properly assessed and consulted on. As it was assumed that the junction would be designed to work at 50mph in the original consultation, it is clearly a reasonable alternative that should be assessed.
- The changes to the A2 corridor, with its associated local feeder roads, will have a significant adverse impact on the environment – particularly as it takes away a lot of existing landscaping that was negotiated as part of the CTRL/HS1 and previous A2 widening scheme. The current consultation is poor in that there are insufficient detailed sections provided to show how the new scheme would fit into the existing corridor in conjunction with HS1.

Paradoxically, one way of softening and reducing the visual impact of the proposal could be to make this corridor marginally wider so that it allows for more landscaping between the different roads and between the two main carriageways of the A2/M2. Whilst this may involve encroaching Shorne Woods Country Park etc. and have nature conservation and other

environmental implications, it is still a reasonable alternative that needs to be properly assessed and consulted on.

- The introduction of Green Bridges is to be welcomed but these need to be of greater width to provide landscape and nature conservation connectivity. They also assist in mitigating to a limited degree the severance of the historic landscape caused by the existing A2 corridor, which is made far worse by the current proposals. Best practice as set out in Natural England and the Landscape Institute publications on the design of Green Bridges should be followed if this is to be an exemplar scheme.⁴

5. Discussion

5.1 The consultation sets out the scheme objectives and it is therefore relevant to structure comments around whether these are being met. These are:

Scheme objectives	
Economic	<ol style="list-style-type: none"> 1. To support sustainable local development and regional economic growth in the medium and long term 2. To be affordable to government and users 3. To achieve value for money
Community & environment	<ol style="list-style-type: none"> 4. To minimise adverse impacts on health and the environment
Transport	<ol style="list-style-type: none"> 5. To relieve the congested Dartford Crossing and approach roads and improve their performance by providing free-flowing north-south capacity 6. To improve the resilience of the Thames crossings and the major road network 7. To improve safety

5.2 The consultation is by Highways England, so members of the public have been encouraged to respond directly to them and not via the Borough Council. That said a number of comments and issues have been picked up from Members, direct contact and other sources:

- Borough Council should continue to oppose the Crossing and it should be located elsewhere (e.g. Swanscombe Peninsula)
- Concern on blight and impact on Riverview Park residents
- Particular concern about the implications of seven years of construction (dirt, noise, traffic etc.)
- Lack of understanding over blight, compulsory purchase etc.
- Welcome tunnel extension but it should be extended further south
- Thong Lane (north) bridge should be much wider (effectively a tunnel)
- Concern at tortuous access from Marling Cross junction onto A2/M2

⁴ See <http://publications.naturalengland.org.uk/publication/6312886965108736> and <https://www.landscapeinstitute.org/wp-content/uploads/2018/01/tgn-09-2015-green-bridges.pdf>

- Traffic impact on local roads (e.g. Thong, Shorne, Cobham, Sole Street, A227 through Meopham etc.) – both under normal circumstances but also what happens in time of disruption
 - Traffic impact on strategic and local roads when either Dartford or LTC are blocked for some reason
 - Ideally no charge at all on either crossing
 - Any charge should be uniform between Dartford and LTC
 - Gravesham residents should receive same discount as Dartford residents currently do
 - Against peak charging, as if that is when people have to travel (e.g. school run), they have to
- 5.3 In the overall process there have been alternative options both in terms of overall corridors (A – Dartford, B – Swanscombe Peninsula, C – East of Gravesend) and schemes within them (e.g. southern eastern and western options for route C in the 2016 consultation).
- 5.4 Swanscombe Peninsula (B) has a series of issues that mean it is not a practical option at present. These include the proposed DCO by London Resort, impact on permitted development in the Ebbsfleet Valley, difficulty in designing a junction on the A2 in very limited space and with some major environmental constraints, and issues on the Thurrock side.
- 5.5 An option at Dartford is still feasible, despite the buildability issues on trying to do something whilst keeping the existing crossing going. The current proposal has exactly the same construction issues at M25 junction, A13 and most of all at the proposed A2 junction. Dartford is also where most of the traffic wants to be as it is going (in some sense) round London.
- 5.6 Returning to the scheme objectives (see 5.2 above for full text of the objectives):
- Supporting economic development – since the scheme is designed to facility long distance flows the benefit essentially goes to Mid/East Kent and elsewhere. Thurrock and North Kent are not well connected by the scheme and therefore get pain without a great deal of gain
 - Affordable – a matter for judgement elsewhere but it has to be pointed out the logical implications of supporting this scheme and housing development will require significant investment in transport networks in Kent
 - Value for money – in the absence of a business case it is not clear at this stage whether the scheme does offer value
 - Impacts on health and environment – there is little information on health, though clearly there are impacts from noise and air quality, with PM2.5 being a particular concern. The other impacts are major on both people and the wider environment which point to a radical review of what is being proposed
 - Relieve Dartford Crossing – short term there is some relief but the modelling even with current levels of development in the model by 2041 this has largely disappeared

- Resilience – there is no evidence of what might happen in disruption situations to the road networks in North Kent and Thurrock. The presence of two crossings in theory gives more flexibility, but 7 lanes will not fit into 4 (in 2 tunnels) or 3. Current experience is that the strategic network is highly fragile and LTC of itself is not going to change that significantly
- Improve safety – the combination of crossing designed to modern standards and some reduction in flow, particularly HGV's, at Dartford would suggest an improvement but that would need to be balanced against the impacts on additional congestion elsewhere on the network

5.7 To restate comments on the two key pieces of evidence discussed above:

- PEIR contains a lot of information about the topics but most of it is very weak on the implications of the scheme, and how these have informed to the design. It reads as engineering design which has then been started to be assessed but has not got very far. It is preliminary but should give the reader an idea of the impacts of the scheme, not just that it is AoNB. The conclusion is that it does not provide the information required and therefore is not adequate.
- Transport model has resulted in a massive amount of data that in the time available it has not been possible to fully analyse. It validates on the strategic network but not the local, though it is an ongoing process. A major concern is the lack of future development in the model for environmental assessment purposes as opposed to business case. Further it shows a fragile network with some significant issues with some links away from Gravesham.

5.8 A further issue that arises from the current design is the question of mitigation (i.e. measures to the scheme to reduce its impact) and compensation (support for schemes elsewhere). These need to be developed from the actual proposed scheme, but both are needed. Mitigation will be developed with the design, but in the most sensitive area, the AoNB, there is very little space.

5.9 For compensation there is a clear precedent in this area of the Cobham Ashenbank Management Scheme (CAMS), which turned £0.75m (1995 prices) from CTRL (HS1) into £8m worth of projects, including restoration of the Darnley Mausoleum. A lot of work has been done on landscape, access and ecological issues in this whole area (AoNB, North Kent marshes and the area between) in the past, so there is a significant amount of basic research in existence. What is needed is the preparation by all relevant parties of an overall plan. That strategy then needs to be funded (including drawing in money from other sources) to be implemented.

5.10 A specific question is asked in the consultation not covered above is about charging for the crossing, which is seen as a traffic management tool, but must also have significant implications for the business case. In this, account also needs to be taken of the new Silvertown Crossing as Transport for London will putting a charge on that so the three major crossings east of Tower Bridge need to be viewed in the round. There is an offer by Highways England of a working group to explore the matter further.

5.11 That said there is clear preference from Member feedback for there to be no charge at all on either LTC or Dartford. If there is a charge:

- Charge at the crossings should be the same
- Same charging discount should be available to Gravesham residents as currently exists for Dartford and Thurrock residents at both crossings
- Traffic modelling is needed to understand what the traffic implications would be from differential charging, given that previous evidence suggests that demand at Dartford is relatively inelastic
- Council sees no case for additional charges at peaks as it penalises those who wish to travel
- The Council is willing to participate in a group to examine the issue in more detail
- Welcome higher charging for high emission vehicles to improve local air quality

5.12 Appendix 3 contains the suggested answers to the Highways England questions, which aim to give the headlines and then send to reader to this report, the appraisal and supporting documentation.

6. BACKGROUND PAPERS

6.1 Appendix 2 contains a list of consultation documents and links to the source on the Highways England web site. The appraisal report, Appendix 4, contains links to relevant items of policy, guidance and other documentation.

Anyone wishing to inspect background papers should, in the first place, be directed to Committee & Electoral Services who will make the necessary arrangements.

IMPLICATIONS**APPENDIX 1**

Legal	There are no direct legal implications arising from this report, but when the Development Consent Order is submitted the Council may well need legal advice on process and response.
Finance and Value for Money	Expenditure has been incurred on consultants and subject to timetable significant additional expenditure is likely to be required in 2019/20.
Risk Assessment	High
Equality Impact Assessment	Screening for Equality Impacts
	Question
	a. Does the decision being made or recommended through this paper have potential to cause adverse impact or discriminate against different groups in the community? If yes, please explain answer. No - consultation response
	b. Does the decision being made or recommended through this paper make a positive contribution to promoting equality? If yes, please explain answer. No- consultation response
	<i>In submitting this report, the Chief Officer doing so is confirming that they have given due regard to the equality impacts of the decision being considered, as noted in the table above</i>
Corporate Plan	03 Sustainable Gravesham
Crime and Disorder	Not applicable
Digital and website implications	None
Safeguarding children and vulnerable adults	None