

Lower Thames Crossing TR010032

TCAG comments on NH's submissions at Deadline 1

Thames Crossing Action Group
Unique Reference: 20035660

DEADLINE 2 (3rd August 2023) / Submitted 3rd August 2023

Introduction

Thames Crossing Action Group made an oral representation at Open Floor Hearing 2.

To avoid duplication, rather than submit a written summary of our oral rep as a post event submission by Deadline 1, our Written Representation also covered points we presented at OFH2, but with further comment and supporting evidence.

We are aware that the applicant may respond to our Written Representation, and are trying to avoid duplication, but also want to provide comment at the earliest opportunity, as we understand and appreciate the pressures on everyone, including the ExA, with such a huge and complex project and application.

We are therefore making this written submission by Deadline 2 in response to the applicant's comments on our oral representation at OFH2.

We do however note that the applicant's comments were of course only made available to us once Deadline 1 submissions were published, which only gives us a very short time to review and respond.

Since the comments included signposting to other Deadline 1 submissions from the applicant, some quite lengthy and technical, we may submit additional representation at a future appropriate deadline, once we have had more time to review said documents. We hope and trust this will be acceptable. Many thanks.

Comments on National Highways' submissions at Deadline 1

9.12 Post-event submissions, including written submission of oral comments, for OFH2 [REP1-185] in response to paragraph 5 and 5.11 – Submissions from Thames Crossing Action Group

1. For ease of reference we will refer to each response by the applicant in the order they commented.

Environmental concerns

2. In response to TCAG saying that the project is not green, the Applicant states that minimising the impacts of the project on the environment is one of the Scheme Objectives, and that they believe that efforts have been made to reduce environmental impacts. They say they have followed the mitigation hierarchy of '*avoid, minimise, restore, and compensate*'.
3. We are very aware it is one of the scheme objectives, we were highlighting that it fails to meet that objective! Making efforts to reduce environmental impacts does not make the project green.
4. We do not believe that they have done all they can to minimise the environmental impacts of the project.
5. Firstly, there were other alternatives, such as rail improvements that would negate the need for the proposed LTC, and be more sustainable.
6. How can we possibly consider they have attempted to avoid environmental impacts when for example they realigned the route to avoid a historic landfill site, at the same time as pushing ahead with the road through The Wilderness, which we deem to be an ancient/long established woodland?

7. Not only that but the applicant failed to acknowledge the importance of The Wilderness throughout the consultation process, despite our representations. As a community group we managed to locate a map showing The Wilderness dating back to 1767, which is no mean feat considering the lack of mapping back then. Further evidence was submitted on this in Appendix C of our Written Representation [[REP1-425](#)]
8. For a woodland to be named The Wilderness in 1767 it is highly unlikely it was referring to newly planted saplings either! We believe The Wilderness to be an ancient woodland even if it is proving hard to get this recognised officially.
9. However, we are aware of the new 'Long Established Woodland' status that is being introduced to ensure that long established woodland that might not have evidence to secure ancient woodland status is protected ensuring we are not losing such precious woodland. It is our understanding that The Wilderness should qualify for this new status, we are simply waiting for Natural England to advise how and when we can apply to seek this status. If Government are introducing this new status as it is seen as important and necessary, then this must add weight to our argument that The Wilderness needs to be saved and protected, and should not be destroyed simply because of the time it takes for government bodies to bring in and consider the new status that is ultimately there to offer protection to woodlands like The Wilderness.
10. How are we expected to believe the applicant is taking environmental impacts seriously, if they appear to be trying to ignore things like this, and simply push ahead as though it's business usual?
11. Or when their so called 'green' bridges guide wildlife to busy T-junctions, such as is the case with Thong Lane 'green' bridge. (*As seen in the image below*)



12. How can destroying an existing working solar farm be considered green? Particularly when the applicant has the nerve to claim the land for environmental mitigation, as is the case with Cranham Solar Farm.
13. The creative accounting of environmental mitigation and compensation, such as Hole Farm Community Woodland, is also questionable and gives no reassurances of adequate assessments and provisions being taken in regard to the green credentials of the project.
14. We were signposted to ES Chapter 4: EIA Methodology [[APP-142](#)], which refers to:
‘Good practice – standard approaches and actions commonly used on infrastructure projects to avoid or reduce environmental impacts, and typically applicable across the whole project’.
15. To us this just suggests the project is being handled as ‘business as usual’. How are we supposed to believe the proposed LTC would be ‘the greenest road ever built in the UK’? You cannot keep doing things as they are always done, as standard, and expect to get anything other than the same

standard results. Also, the bar on green road building is hardly high in the first place! Not that this has stopped the applicant attempting to greenwash the project.

16. It seems to us that the applicant wants to claim they are leading the way as a pathfinder project, whilst only following what is standard in an industry that is far from green.

17. We are also part of a conservation coalition, along with the Woodland Trust, Transport Action Network, Buglife, Kent Wildlife Trust, CPRE Kent, Community Planning Alliance, South Essex Wildlife Hospital, Essex Badger Protection Group, West Badger Group, Cycling UK, Kent County Councillor – Brian Sweetland, Froglife and Essex Wildlife Trust who wrote to Government to express our concerns about the environmental impacts of the proposed LTC. Such organisations and individuals voicing concerns does not suggest a green project.

18. The applicant suggests that the amount of carbon expected from construction has been significantly reduced. They then go on to provide an example, and say “we are considering alternatives to carbon intensive materials such as concrete and steel; and exploring removing diesel from our work sites”.

19. Indeed, in a recent consultation response to a question we submitted NH told us, *“There are a number of ways in which the Lower Thames Crossing will be the greenest road ever built in the UK. A Pathfinder scheme, the Lower Thames Crossing is exploring ways to achieve carbon neutral construction, and will pass on learnings to future major infrastructure projects. The amount of carbon expected from construction has been significantly reduced by optimising the design of the road, as well as the methods and materials used to construct it. For example, we are considering alternatives to carbon intensive materials such as concrete and steel; and exploring removing diesel from our work sites by only using hydrogen and electric powered plant.”* We have underlined what we consider to be the notable part of this statement.

20. It clearly suggests removing diesel from the work sites by **only** using hydrogen and electric powered plant.
21. Since it is known that it is not viable and has not been developed to operate a lot of construction equipment using electric due to the need for a lot of power that is often big surges to lift and move things, it is then questionable that in their recent PIN¹ for the use of hydrogen on LTC they say, *'National Highways has designated LTC a pathfinder project that will explore carbon neutral construction. Low Carbon Hydrogen is a key element in LTC's strategy to deliver its carbon reduction targets and a key objective of this procurement is to enable a significant reduction in the use of diesel on the programme by enabling the use of hydrogen powered plant, machinery and generators. The procurement covers the production, delivery and storage on site of Low Carbon Hydrogen for use by the LTC appointed Main Contractors to fuel their construction plant and equipment. Making hydrogen easily available could displace over one third of the diesel forecast to be used during construction.'* Again underlined by us to show the notable section that it **could** displace over **one third** of the diesel forecast to be used during construction. Hardly gives confidence that they are only using hydrogen and electric powered plant, as there is still the other two thirds of diesel to consider.
22. It should also be noted that the hydrogen equipment they are proposing to use is still in prototype stage, so another gamble on whether it would be truly ready and sufficient for such a huge and expensive job where the carbon emissions are so massive and questionable.
23. In an ITV News Meridian interview on NH putting their tender notice out for the hydrogen that would be needed, LTC Executive Director, Matt Palmer responded to the question on how much it would add to the cost of the LTC, by saying they did not know, but that it wouldn't push it over budget!

¹ <https://www.find-tender.service.gov.uk/Notice/016115-2023>

24. How is that even possible to make sure a statement if you don't know?!
Not to mention the fact that we have been told that contractors who have been bidding on other contracts have included the usage and associated cost of using hydrogen. If Mr Palmer doesn't know how much the use of hydrogen is going to cost, can we truly believe that contractors have been able to efficiently calculate this into their costing? Plus, we've been told that the use of hydrogen fuel is already included within the project budget.
25. We understand that the cost of hydrogen machinery is predicted to be around 3 times more expensive than more traditional fossil fuel machinery. There is also the concern and issue of costs rising due to the two year delay again.
26. The terminology of using hydrogen for the project has also not made it entirely clear whether they are referring to grey, blue, or green hydrogen, it has only been referenced as low carbon hydrogen.
27. The production of green hydrogen is extremely extensive in using electricity. It takes far more electricity energy to produce it than the actual hydrogen power that is the end result of the process. If you say electricity used is 100 then out of that 25-30 will be the resulting amount of power generated through the process from electricity to hydrogen. There is still a cost and usage of resources to make the 100 electricity, to only end up with 25-30 of hydrogen. So at a time of concerns about power supply shortages, this only adds to our concerns.
28. NH again claimed that they have an aim to be carbon neutral in construction. This again is an **aim** rather than a guarantee, which is again concerning at a time of climate emergency when the project is estimated to emit such massive amounts of carbon.
29. They also have an ambition to recruit 45% of their workforce from within 20 miles of the project, including 20% from postcodes that sit within the local authorities that the LTC impacts directly. We find it questionable as to whether this would even be possible and consider it to be intention and

speculative yet again.

30. NH also suggested that their move to hydrogen would reassure the hydrogen industry in regard to development and progress in that sector. But when questioned confirmed that NH is seeking to procure hydrogen only and that investment required by hydrogen suppliers to meet the needs of the contract would be specific to the supplier, their existing capability, business model and approach to the project. We question the impacts to those investing if the proposed LTC doesn't go ahead? It seems rather irresponsible to progress with such investment when the outcome is unknown.

31. Consideration and exploration do not guarantee anything moving forward, and certainly are not an example of how "the amount of carbon has been significantly reduced...". One is suggesting something may happen, the other claiming it has already happened, it cannot be both.

32. This is not the first instance of such claims by the applicant whereby when questioned they have been unable to back up claims with evidence. There have been questionable inconsistencies in regard to claimed carbon figures and reductions over the years.

33. On 18th July 2022 National Highways issued claims about an 80% reduction in carbon emissions for the project². However, this was claimed due to government policies including the end of sales of new petrol and diesel cars and vans.

34. The Transport Select Committee report for their Strategic Road Investment inquiry³ concluded that:

"Transport remains the biggest greenhouse gas contributor in the UK and the Government's strategy for decarbonising transport by 2050 is reliant on a rapid switch to zero emissions vehicles. However, in all future scenarios

² <https://nationalhighways.co.uk/our-roads/lower-thames-crossing/news-and-media/news/government-decarbonisation-plans-drive-down-projected-carbon-emissions/>

³ <https://committees.parliament.uk/publications/41071/documents/199999/default/>

modelled by the Department for Transport, traffic on the Strategic Road Network is forecast to increase, and there is a great risk that uptake of cleaner vehicles will not be fast enough to mitigate that increase.”

35. This shows that there are no guarantees of the claimed 80% reduction, it is purely speculation, a gamble on something as serious as decarbonisation of transport at a time of climate emergency. The Transport Select Committee’s conclusion on this is also part of the reason they are calling on Government to reconsider expensive complex road projects. They don’t come more expensive and complex than the proposed LTC.

36. Also, in regard to their 2022 claim of an 80% reduction, evidence at the time actually showed a whopping 67% increase in the estimated LTC operational traffic carbon emissions.

37. Whilst their claims use the 2016 carbon emission estimate of 5.98 million tonnes, their 2020 ‘6.3 Environmental Statement Appendices Appendix 15.1 Carbon and Energy Plan’ which was part of their failed first attempt to submit the LTC Development Consent Order (DCO) states that the total carbon emissions is estimated to be just over 5.27 million tonnes.

(paragraph 1.1.3)

38. The same document states *(paragraph 1.1.4)* that 52% of the total emissions is from operational traffic. This works out at 2.74 million tonnes.

39. Yet in the July 2022 NH press release the ‘Notes to Editors’ section details:
“A *(sic)* updated forecast of 4.6mt tonnes calculated using [Emissions Factor Toolkit](#) (EFTv11with London Adjustment). The EFT is a tool published by DEFRA to assist in calculating road vehicle pollution.”

40. This highlights the huge 67% increase in operational traffic emissions alone.

41. The estimated carbon emissions, are approximately 25% higher in this DCO application than was presented in the application documents for the first attempt of submitting the DCO. It jumped from 5.273 million tonnes in the

2020 DCO application up to 6.586 million tonnes in the 2022 application.

42. In another instance the LTC Project Director for Tunnels said that if the scheme said that if the scheme didn't achieve emissions reductions in line with the Government's legally binding net zero strategy, 'there won't be a project'. Citing various ways the project would cut emissions he said, '10-20% will be slashed through carbon capture'.
43. When we asked for further details on this, National Highways admitted that carbon capture technology was not yet available, but there was a chance it might be towards the end of the construction period.
44. Another example of intentions rather than real evidence to back up claims. When it comes to something as important as carbon emissions at a time of climate emergency we need guarantees, not intentions and hopes. Another reason why the Climate Change Committee (who have said that new roads should only be built if they can be shown not to increase emissions) have called for an urgent review of current and future road building projects in England.
45. In regard to the claim about exploring removing diesel from worksites, we respectfully signpost you to our Written Representation [[REP1-425](#)] from point 293, to avoid repetition.
46. We also question how the statement that the LTC is green by design, because 80% of the road will be in a tunnel, cutting or behind an embankment to reduce visual impact on the landscape makes the project green? Tunnelling and ground works, as well as associated construction are certainly not environmentally friendly/green. Not to mention the resulting operational impacts.
47. Similarly, the mention of two new 'parks', when it is quite clear and admitted by the applicant that the 'parks' provide somewhere to dump the spoil from tunnelling. And as mentioned in our Written Representation [[REP1-425](#)] from point 141, the parks would not be a healthy environment due to pollution from the LTC.

48. We therefore remain of the opinion that there is no evidence to back up claims of the project being green, and the claim that it would be the 'greenest road every built in the UK' is inconsequential, as the bar is so low in the first place. We fail to see how such a hugely destructive and harmful project can in any way be considered green.

49. Moving on to the second section of comments in response to: The project does not accord with the Climate Change Committee's report, published on 28 June 2023. We maintain that it doesn't matter how the applicant tries to bury their head in the sand or attempt to greenwash the project, the proposed LTC would be hugely destructive and harmful and is estimated to emit a whopping 6.6 million tonnes of carbon, and the Climate Change Committee have called for an urgent review into current and future road building in England to ensure schemes are only taken forward if they meaningfully support cost effective delivery of Net Zero and climate adaptation, which we do not believe the proposed LTC would do.

50. The next section of comments were in response to legal targets for PM2.5/air pollution, and the associated air pollution related health impacts.

51. The applicant likes to suggest that are leading the way and aiming to make the proposed LTC the 'greenest' road every built in the UK, yet in regard to air quality, which is most definitely an environmental/green issue they appear to be shying away from the impacts of LTC on air quality, including PM2.5.

52. On 16 December 2022, Lord Benyon (Minister for Biosecurity, Marine and Rural Affairs) made a statement⁴ that highlights the thirteen new legal targets for the Environment Act.

53. His statement included:

An Annual Mean Concentration Target for PM2.5 levels in England to be

⁴ <https://questions-statements.parliament.uk/written-statements/detail/2022-12-16/hlws449>

10µg/m³ or below by 2040, and
A Population Exposure Reduction Target for a reduction in PM2.5
population exposure of 35% compared to 2018 to be achieved by 2040.

54. Let's also not forget that at the time of the consultation on these targets, Government told everyone that it would not be possible to have legal targets in line with World Health Organisation, or to bring the deadline for the target to be less than 10µg/m³ by 2030 instead of 2040, as the targets needed to be ambitious but attainable. So if as NH suggest levels of PM2.5 are currently so good, why was a lower target or one that needs to be met sooner not set by Government?
55. The applicant seems to suggest that the legal targets will only be measured and assessed at monitoring stations such as Defra Automatic Urban Rural Network (ARUN), and that there is only one of these monitors within 200m of the affected road network, and is in Grays but has only been monitoring in 2023.
56. How can it be considered adequate monitoring or analysis locally with only one monitor that has been in operation less than a year?
57. The 10µg/m³ target is the same target as the World Health Organization had in 2019 when Professor Karen Lucas said that the whole project would exceed WHO's guidance, as highlighted in our Written Representation [[REP1-425](#)].
58. We also draw attention to the Environment Act requires an Annual Mean Concentration Target for PM2.5 levels in England to be 10µg/m³ **or below** by 2040.
59. The proposed LTC is not predicted to open in 2032 at the earliest, so only 8 years before this target needs to be met.
60. Since the proposed LTC is estimated to result in around a 50% increase in cross river traffic, would not solve the issue of congestion at the Dartford

Crossing, and all the congestion and chaos due to the lack of adequate connections for traffic to migrate between the two crossings when there are incidents, this would mean it is not realistic to simply assume a reduction in PM2.5 would be possible. In fact it suggests that PM2.5 levels would increase.

61. We question whether the applicant's claims about current levels of PM2.5 are a true reflection of air quality, since it appears they were assessed during the pandemic 2022 when it is known air quality improved considerably.
62. According to The Taskforce for Lung Health, before the pandemic, in 2019, over 33% of all local authorities had unsafe background levels of PM2.5 above $10\mu\text{g}/\text{m}^3$.
63. What's more, 75% of local authorities estimated they had at least one individual road over $10\mu\text{g}/\text{m}^3$.
64. They state that almost 6% of adult deaths are linked by PM2.5 each year. And that the south east of England is the worst affected region outside of London in terms of the estimated impact on mortality.
65. It should also be noted that despite frequent references to Electric Vehicles being zero emission, they still emit PM2.5, often more so due to the extra weight of the vehicles from the batteries.
66. The applicant also admits that the DCO application does not include analysis of PM2.5 levels in accordance to the new legal targets as they had not been announced at the time the DCO application was submitted. This is despite the proposed targets that were consulted on being available, and likely to be the resulting targets.
67. Since the new legal targets have now officially been confirmed surely there needs to be some official analysis added to the DCO application for examination? It is simply unacceptable to state that the assessment has

been carried out against the targets as they were then, because things have changed since then and the legal targets will need to be met, if the project goes ahead, and should not proceed if it can't meet those targets.

68. We note that just because the DMRB LA 105 (Highways England 2019) does not require PM2.5 concentrates to be modelled (as stated in paragraph 5.3.70 in 6.1 Environmental Statement Chapter 5 – Air Quality[[APP-143](#)]), doesn't mean it is acceptable to ignore the fact that there are legal targets to be met. This also highlights that the DMRB, for which the applicant is responsible, is outdated and this issue needs to be addressed as a matter of urgency.

69. Dispersion modelling is also mentioned in paragraph 5.3.48 in 6.1 Environmental Statement Chapter 5 – Air Quality[[APP-143](#)]. It is again confirmed that 'Although not explicitly modelled, the impact of the project against the PM2.5 thresholds were also assessed using the modelled PM10 annual mean concentrations. As highlighted in point 120 of our Written Representation [[REP1-425](#)] PM2.5 does not disperse within 200m of the road. Since the applicant has previously said that air pollution disperses within 200m of the road, we have to question exactly what assessment has been done and is provided in regard to PM2.5, which can travel thousands of miles, so would definitely have some kind of impact, and does not simply disperse as NH suggest.

70. Table 5.4 Air Quality Strategy objectives and Limit Values in 6.1 Environmental Statement Chapter 5 – Air Quality[[APP-143](#)] is also outdated since new legal targets have been introduced.

71. In fact, rather than detail all references to PM2.5 targets being outdated, we will simply state that it is unacceptable that all references to PM2.5 target levels are outdated and need to be reassessed with updated information provided for the examination. Guesstimates against old targets is not acceptable for something as important as deadly PM2.5.

72. Paragraph 5.4.40 suggests that the maximum PM_{2.5} concentrations are predicted as being 16.9µg/m³, which would not be compliant with new legislation.
73. Paragraph 5.4.44 claims that no exceedances of Pm₁₀ or PM_{2.5} AQS objectives have either been monitored or predicted at human health receptors across the study area. This leads to the question of whether this is simply because there has been no monitoring, and whether if there was adequate monitoring the results would be different?
74. To date we have been unable to locate any guarantees that PM_{2.5} would be monitored, particularly once the LTC is operational, if it goes ahead, which is concerning. So not only do we have concerns about the lack of info about PM_{2.5}, there are also concerns that if the LTC goes ahead there would be no info/monitoring either.
75. Since PM_{2.5} does not only pollute the air we breathe, but also water and soil we also question what assessment has been carried out in this regard?
76. We also question why the applicant did not prepare an Air Quality Quantitative Health Impact Assessment prior to submitting the application, rather than waiting to submit it at Deadline 2?
77. The next section of comments were in response to the project not meeting the new Biodiversity Net Gain legal requirements. The applicant states that the new mandated requirements for NSIPs only apply where the application is made in 2025 or afterwards, so doesn't apply to the LTC.
78. For a project that the applicant is selling as the greenest road ever built in the UK, and considering that with the start of construction being rephased by 2 years, meaning it would start no earlier than 2026, this does not seem like good practice. Why does the applicant deem it acceptable to claim they are a pathfinder project and leading the way, greenest ever built when it suits their agenda, but ok to overlook things like this?

Means of transport

79. In response to our comment that the proposed LTC offers no provision for cross river active travel, the applicant has responded to say active travel options were considered but not taken forward for a variety of reasons.

80. In June 2023 the National Audit Office published a report⁵ that highlights the fact that Government are not on track to meet its objectives to increase rates of cycling and walking.

81. The DfT's focus seems to be placing the onus on local authorities, whilst apparently ignoring their own part in meeting the objectives, else they would be doing more to support and encourage active travel on a national level rather than leaving it purely to local authorities.

82. Why does it seem the DfT feel national government bodies and companies like National Highways should be exempt from supporting and encouraging active travel, as part of the SRN and in enhancement projects?

83. As outlined in our Written Representation the walking, cycling and horse riding routes that NH include in the proposed LTC design do not largely offer real connectivity.

84. The applicant then moves on to comment in response to our comment that the lack of adequate connections would mean the LTC would not be viable for public transport/buses.

85. It is not good enough to say that the project would create opportunities for public transport operators when it is quite apparent to us and the local operators that it would not be viable, due to the lack of adequate connections.

⁵ <https://www.nao.org.uk/press-releases/active-travel-in-england/>

86. It doesn't matter whether local buses have to pay the user charges for the LTC or not, if the lack of adequate connections does not make it viable.
87. How can the applicant possibly consider it viable when any bus routes that start at or to the West or South of Orsett/Chadwell St Mary/Tilbury/Bulphan would all have to detour via the A13/A1014 Stanford junction, using what has become known as the Stanford Detour to access the LTC?
88. Similarly south of the river all routes would have to go via the A2/M2 to connect to local roads.
89. This results in additional miles and the associated time and cost associated with that. Not only does this stop it being viable for the bus companies, but is also not viable/efficient for those wishing to travel by bus.
90. The applicant's response to our comments about walking, cycling and horse riding routes being claimed as 'new' when many are existing routes that would need to be realigned due to the LTC, does not actually deny we are correct, it simply signposts to DCO application documents.
91. The image below is street view on Google Maps showing the A1013/Stanford Road.



92. The image below is a screen capture of Part E of the Project Design Report [APP-512] which details the A1013 as a proposed off road Ped/Cycle track.



93. Clearly the first of the two images shows that there is already an off road walking/cycling path alongside the A1013/Stanford Road.

94. This is just one example to show what we mean, there are others, but we hope this helps clarify what we are referring to on this aspect.

Economic growth, affordability, value for money

95. The applicant signposts us to Table 4.4 for the forecast cost of the project, and also states that cost was assured by NH in February 2022 as per paragraph 6.2.3 of the Combined Modelling and Appraisal Report Appendix D: Economic Appraisal Package: Economic Appraisal Report [APP-526].

96. Dealing with the latter first, that paragraph provides no date as to this happening.

97. We also note that 6.2.1 of the same document states that the CAPEX costs were estimated and profited over the project's planning and construction period and are based on a 2031 opening date, though the application as a whole is based on the opening year of 2030.

98. Since construction has now be rephased by two years, surely the project should be assessed taking the 2 year delay into account?
99. Going back to Table 4.4, we also note that it states that TAG data book version 1.18 has been used.
100. Version 1.18 was published in May 2022, but version 1.19 was also published in May 2022, so we wonder why the applicant chose to use v 1.18 and not v 1.19.
101. As the Tag data book is now up to v 1.21 we also wonder whether the applicant will provide an updated appraisal for the scheme?
102. On the topic of cost, let's take a look at the LTC Cost history that we presented in our representation to the Transport Select Committee's Strategic Road Investment Strategy Inquiry:

2016 Summary Business Case ⁶	£4.1bn - £5.7bn *
2016 Consultation Booklet ⁷	£4.3bn - £5.9bn (inc allowances for inflation)
2017 Preferred Route Announcement	No cost mentioned
2018 Statutory Consultation ⁸	£5.3bn - £6.8bn
2020 Spring Budget - RIS2 (March 11 th) ⁹	£6.4bn - £8.2bn
2020 Outline Business Case (August) ¹⁰	£5.27bn - £9bn
2022 Funding Statement ¹¹	£5.2bn - £9bn

⁶ https://highwaysengland.citizenspace.com/ltc/lower-thames-crossing-consultation/user_uploads/lower-thames-crossing-consultation-summary-business-case.pdf

⁷ https://highwaysengland.citizenspace.com/ltc/lower-thames-crossing-consultation/user_uploads/lower-thames-crossing-consultation-booklet.pdf

⁸

https://highwaysengland.citizenspace.com/ltc/consultation/supporting_documents/LTC%205%20The%20Case%20for%20the%20Project.pdf

⁹

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951100/road-investment-strategy-2-2020-2025.pdf

¹⁰ https://nationalhighways.co.uk/media/w3rlnonz/ltc-obc-2022-foi-3385-ic-182335-r3f3_redacted.pdf

¹¹ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010032/TR010032-001251-4.3%20Funding%20Statement.pdf>

2022 NAO Report (cost as at Aug 2020) ¹² (increase in cost since March 2020)	£5.3bn – £9bn c £1.9bn
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* *At this time LTC was Route 3 WSL*

Note how the 2022 NAO Report states the cost has risen by c £1.9bn since March 2020, yet if you add £1.9bn onto the cost in March 2020 it would be more than the cost stated in the Aug 2020 OBC.

March 2020 £6.4bn - £8.2bn + £1.9bn = **£8.3bn - £10.1bn**

Also note that this would be the cost as at Aug 2020.

Why has the cost not risen further since Aug 2020? Clearly a lot has happened in that time and inflation and costs of everything has risen considerably.

In Feb 2022 , due to changes in the way the government now calculates carbon emission costs, the proposed Lower Thames Crossing carbon costs for construction alone rose by more than 230% to almost £500million. In an article in industry publication, New Civil Engineer¹³, New Economics Foundation senior researcher has said “after factoring in the emissions over the scheme’s operational lifetime, the total climate cost is likely to rise over £1bn”. We have seen no evidence to suggest this has been represented in the current estimated cost including within the LTC Accounting Officer Assessment.

103. As can be seen above the estimated cost that is being presented in the DCO application is the same as at August 2020.

104. Our understanding is that TAG data book was updated in November 2021, to reflect considerable increases in carbon costs, which we understand quadrupled.

¹² <https://www.nao.org.uk/wp-content/uploads/2022/11/Report-Progress-with-the-second-road-investment-strategy-2020-to-2025.pdf>

¹³ <https://www.newcivilengineer.com/latest/carbon-cost-of-lower-thames-crossing-construction-rises-to-500m-02-02-2022/?tkn=1>

105. In light of the whopping estimated 6.6 million tonnes of carbon emissions for the LTC, this must surely result in a considerable increase in the estimated cost too?
106. As has been highlighted in our Written Rep, and also by others, and already covered by the ExA in hearings, the BCR is wobbly and costs of everything are rising. We do seriously question the estimated costs of the project, and feel that what is being presented is outdated and underestimated.
107. The applicant then moves on to comment in defence of the adjusted BCR dropping from 3.1 down to 1.22.
108. Of course we understand that the project changes over the years, our point is that from the time when the preferred route was decided and announced to now the project's BCR has dropped considerably.
109. What the applicant refers to as additional transport schemes, outside of the scope of the DCO application, we believe should be considered as part of the LTC project, as they are needed as a direct result of the project, so should be part of the estimated cost and BCR appraisal of the project. We have commented on this from point 246 in our Written Representation [[REP1-425](#)].

Design Capacity

110. In regard to our comment on needing at least 25% reduction in traffic to bring the Dartford Crossing back below design capacity, the applicant signposts us to Section A.2 of Annex A in Deadline 1 Submission - 9.10 Post-event submissions, including written submission of oral comments, for ISH1 [[REP1-183](#)].
111. We highlight that the applicant is very quick to state the design capacity of the Dartford Crossing, and how much traffic is regularly using it, to prove the need for a new crossing. Yet in response to us raising the design capacity and how much reduction would be needed to bring it back below

design capacity, the applicant attempts to move focus onto the am, pm and inter peak hour traffic. Is that not like comparing apples to oranges?

112. A.2.7 of the same document tells us that the applicant is suggesting that the forecast journey times for longer distance trips using the Dartford Crossing would for a considerable time, if the LTC goes ahead, be similar to as they were in 2016.

113. We draw attention to paragraph 1.15 of Chapter 1 – Executive Summary – Dartford River Crossing Study¹⁴ into capacity requirements published by the DfT in April 2009, which states *'The Dartford Crossing experiences high levels of flow and congestion on a daily basis, with typical traffic flows in the order of 145,000 to 150,00 vehicles per day.'*

114. This clearly confirms that in 2009 the Dartford Crossing was 10-15 thousand vehicles per day over the design capacity of 135,000 vehicles per day.

115. We then draw attention to paragraph 2.2.6 of the Summary Business Case from the 2016 Highways England LTC Public Consultation¹⁵ which states, *'At present the crossing handles an average daily traffic flow of about 141,000 vehicles (2014) which is greater than the design capacity of 135,000 vehicles'.*

116. As a final reference on this, we draw your attention to paragraph 3.1.1 of the Case for the Project¹⁶ from the 2018 Statutory Consultation, which states, *'Even though it was designed for 135,000 vehicles per day, it carried over 180,000 vehicles on some days in the year to September 2017.'*

¹⁴

https://webarchive.nationalarchives.gov.uk/ukgwa/20100513192540mp_/http://www.dft.gov.uk/about/strategy/capacityrequirements/dartfordrivercrossing/chap1execsummary.pdf

¹⁵ https://highwaysengland.citizenspace.com/ltc/lower-thames-crossing-consultation/user_uploads/lower-thames-crossing-consultation-summary-business-case.pdf

¹⁶

https://highwaysengland.citizenspace.com/ltc/consultation/supporting_documents/LTC%20%20The%20Case%20for%20the%20Project.pdf

117. The above clearly shows that as early as 2009 reports were showing the Dartford Crossing was considerably over design capacity, and that things were even worse by 2016.
118. Firstly, if the applicant is stating that the proposed LTC would bring the Dartford Crossing back to 2016 figures, it is admitting that the Dartford Crossing would still be over design capacity.
119. Secondly, can it truly be considered a real solution and value for money to be spending such a huge amount of public money, only to bring the current Dartford Crossing back to 2016 levels when the crossing with a design capacity of 135,000 vehicles per day was on some days taking 180,000 vehicles?
120. Moving on to comments about Thurrock Council's independent analysis of the official traffic modelling that showed the reduction in traffic at the current crossing, if the LTC goes ahead, being as low as 4% in the am peak and 11% in the pm peak hour.
121. As a member of Thurrock Council's LTC Task Force committee, we were advised that the council asked the applicant about their findings on this, and NH did not come back to the council and deny or question their findings, so it was assumed that they had been accepted. We believe it was only when the figures started being stated publicly that the applicant started to deny them. We also believe that the council have included details of their concerns about this within their submissions.
122. Regardless, as already covered the applicant's predicted 19% dropping to 13% reduction would still not be enough to bring the Dartford Crossing back below design capacity.
123. We also note that paragraph A.1.4 of 7.7 Combined Modelling and Appraisal Report - Appendix D - Economic Appraisal Package: Economic Appraisal Report [[APP-526](#)] states, "*The Lower Thames Area Model (LTAM)*

traffic model is based on 2015 trip patterns..."

124. The DfT's TAG Guidance for the Technical Project Manager (TPM)¹⁷, which provides advice for the technical project manager in charge of preparing modelling and appraisal work on behalf of the senior responsible officer, states in paragraph 3.5.1, *"As part of producing an appropriate analytical tool, it is important that models are based on up-to-date evidence and are demonstrated to produce realistic results when tested. Without this assurance, results from a model may not be sufficiently robust to be used to adequately assess impacts of a potential intervention."*
125. How can you adequately and sufficiently expect to calculate reducing current/opening year traffic levels, back to 2016 levels, by using traffic data from 2015? How much would the results change on things like estimated traffic reduction if up to date data was used?
126. At this time we would also highlight that we have previously been told by NH that when they calculate the traffic modelling they take an average month, like March and monitor the traffic. If there is anything they consider not to be normal, like incidents they remove the associated data. The thing is that what they consider to be normal and what is normal for us day to day living in the area are different, because incidents are part of the norm for us now. So the very data that reflects the problem they are supposed to be resolving is removed from the equation.
127. Next the applicant provides signposting to A3 of the same Deadline1 submission document, in regard to induced demand, or increased traffic and journey changes.
128. We were surprised to read A.3.10 [REP1-183](#), which appears to suggest that the changes in traffic levels only considers cars, not LGVs or HGVs. This is particularly concerning considering the project is about providing

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938783/tag-guidance-for-technical-project-manager.pdf

connectivity for the ports in the South East through to the Midlands and beyond, and also that we keep hearing so much about the economic benefits and growth the project would create, ie businesses that largely use LGVs and HGVs. Noting that around 42% of the traffic currently using the Dartford Crossing is goods vehicles.

129. The applicant also signposts us to Table 5.2 of the Need for the Project [[APP494](#)] saying it sets out the changes in forecast daily traffic flows. In actual fact Table 5.2 is titled 'How the Project supports the Scheme Objectives'. Clearly not the correct document.
130. However, we would like to note, in support of our previous comment about the need to include LGVs and HGVs in the calculations for induced demand, that Table 5.2 details the economic achievements of the project, including that it '..would boost the productivity of businesses in the Lower Thames area and wider region', and 'Enhanced connectivity and cross-river economic opportunities would further stimulate competition, boosting employment and increasing inward investment locally and regionally', and 'Benefits would be greatest for high value businesses, but also significant for the local area's lower value transport and construction sectors'.
131. Paragraph 7.7.34 of 7.10 Health and Equalities Impact Assessment [[APP-539](#)] states 'As a new transport corridor, the project is forecast to result in significant changes in traffic flows and speeds, and HGV use'.
132. The above clearly shows the need to include LGVs and HGVs when considering induced demand.
133. The applicant comments that the project would include junctions with key parts of the strategic road network, but doesn't identify that the junctions are inadequate and sometimes fails to include all directional options. The applicant also suggests that the number of incidents would fall.

134. If for a moment we look at the prediction by the applicant that if the LTC goes ahead the Dartford Crossing vehicles movements would be back to 2016 levels. Then look at paragraph 3.1.10 of the 2016 LTC Case for the Project¹⁸ where it states that ‘..from Sept 2015-Aug 2016 there were over 1500 incidents (during weekday charging hours) were recorded at the Dartford Crossing that resulted in single or multi-lane closures which had the effect of closing the lane for over 15 minutes. Over 400 of these incidents resulted in closures which caused delays equivalent to closing a lane for over 60 minutes. Depending on the location, timing and scale of the incident, it can take up to 5 hours for queues to clear and for journeys to return to average times’.
135. Note this is only during weekday charging hours. What would the number of incidents be including weekends and out of charging hours? It would likely be much higher!.
136. Now on top of that imagine what the results would be when as highlighted in Appendix A from point 12 in our Written Representation [REP1-425] there are not adequate connections for traffic to migrate between the two crossings.
137. Congestion not only causes delays, but also frustration when some make bad judgements, all of which result in further incidents. This is actually referenced in paragraph 7.7.7 of the Health and Equalities Impact Assessment [APP-539] The chaos would be spread throughout the region as traffic builds and incidents occur. This does not offer a solution or improve resilience on the road network.
138. Moving on to the applicant’s comments about additional accidents. And since the applicant fails to recognise the points above about high levels of incidents and lack of adequate connections for traffic to migrate we have to question whether the additional accidents reported by NH is a realistic

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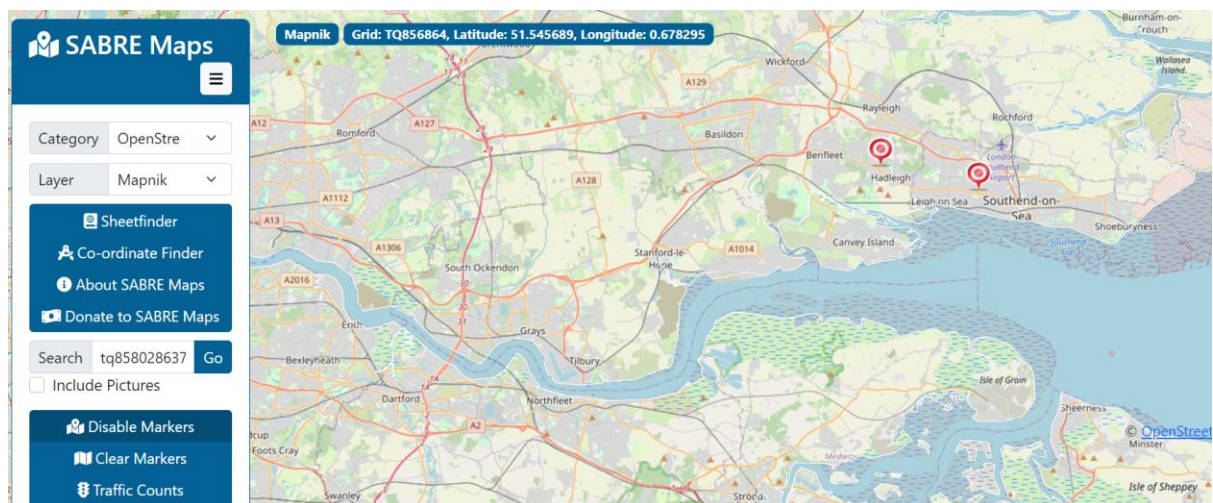
https://highwaysengland.citizenspace.com/ltc/consultation/supporting_documents/LTC%20%20The%20Case%20for%20the%20Project.pdf

prediction.

139. NH have also publicly stated they have committed to targets that mean by 2040 nobody will be killed or seriously injured on their roads and motorways. How is a project that forecasts in a 60 year period there would be an additional 26 fatalities and 220 serious injuries in keeping with such a commitment?
140. The applicant signposts us to Chapter 9 of the Transport Assessment [[APP-529](#)]. We are very concerned to learn from paragraph 9.2.5 that there project design includes several proposed departures from the standards. Also, that as far as we can see there are no further details of what these are, and that the applicant has submitted the application for examination despite not having completed the process of agreeing these departures with the NH design specialists.
141. We respectfully question whether those who carried out the Road Safety Audit (RSA), have been briefed and considered the uniqueness of the Dartford Crossing and lack of adequate connections between the two crossings when there are incidents, along with how incidents impact the local area. We assume since the applicant fails to recognise these aspects that those carrying out the RSA won't have been briefed.
142. Paragraph 9.3.1 of the same document [[APP-529](#)] details that 'In line with TAG guidance, DfT's COBALT software program (Cost and Benefits to Accidents-Light Touch version 2.3 (DfT 2022) was used to forecast the total numbers of personal injury accidents, and casualties by severity of injury (fatal, serious and slight) over the 60 year period from the opening of the project.
143. Firstly, the opening of the project would now be two years later than predicted at the time this work was carried out. Version 2.3 was used and we note that the software is now updated to version 2.5.

144. Secondly, we question what parameters were used in the running of the software. Was the project considered an All Purpose Trunk Road or a Motorway for this purpose? Because if other aspects needed to consider it a motorway then surely this should be carried through to things like this assessment? MyRIAD (Motorway Reliability Incidents And Delays appraisal software) has been mentioned in other documents such as [\[APP-526\]](#).

145. We find it strange when reviewing the data in Table 7.23 of [\[APP-539\]](#) that reference is made to a change in accidents – Link A13 London Road between A129 and A1158 (westbound) as 1% change in casualties, and Link A13 London Road between A129 and A1158 (eastbound) as 1% change in casualties. We have marked where both roads interest the A13 London Road on the map below to show locations. This is away from the proposed LTC, and we can see no direct correlation between the LTC and a reduction in accidents as a result of the project, it seems a bit random, and leads us to wonder what other strange random aspects may or may not have been included.



Road design and alternatives

146. The applicant made comments in response to our comments on the proposed LTC being a ‘smart’ motorway by stealth, and signposted us to paragraph 6.2.3 in Combined Modelling and Appraisal Report Appendix C:

Transport Forecasting Package [[APP-522](#)] where it is again confirmed that *'Notwithstanding that the project is to be designated as an all-purpose trunk road (APTR), the mainline is coded as a three-lane motorway (except for the northern section between the M25 and A13 where the southbound direction has two lanes). This is because an APTR with the same restrictions as a motorway means that this is considered the most appropriate coding'*.

147. We again question why the proposed LTC is being designated an APTR with the same restrictions as a motorway, rather than being designated a motorway?

148. The applicant's comments go on to say *'When a link is coded into the Saturn software information is provided on the distance of the link and the capacity of the link. The capacity is affected by a number of factors, such as the road type, number of lanes, the width of the lanes, the gradient of the road, and the mixture of traffic using the road. Given the prohibition of slow moving vehicles from the project, it's mainline links were coded, with the capacities and speed flow curves used to describe motorway links rather than coding for an all-purpose trunk road'*.

149. This suggests that Saturn software considers the LTC to be a motorway more than an APTR too. We are yet to find any justification as to why the proposed LTC has been designated an APTR rather than a motorway. This does nothing to reassure us that the reason is because it is a 'smart' motorway by stealth and SPTR designation is a means to disguise this fact once it became apparent the level of concern and opposition to 'smart' motorways, especially as the project was being referred to as a motorway previously.

150. Signposting is also given to paragraph 5.5.2 in Combined Modelling and Appraisal Report Appendix B: Transport Model Package [[APP-520](#)]. This covers the fact that the A2 eastbound between the M25 and M2 junction 1 was coded using a motorway capacity.

151. It appears to us that this would be because the road is largely being used by motorway traffic transitioning/connecting between the M25 and M2.
152. In a similar way traffic using the LTC would largely be transitioning/connecting from/to the M2 and M25. A road that connects motorway to motorway, and is particularly supposed to be to provide new connectivity for the Ports in the South East through to the Midlands and beyond again motorway traffic/journeys. Why would you designate that road connection an APTR rather than a motorway?
153. It is not just the instance we referred to in our oral representation, there are other examples of references to the LTC being a motorway.
154. For instance, paragraph 7.7.33 of states, 'The project would be built to current design and safety standards for motorway class roads'.
155. As mentioned above, in 7.7 Combined Modelling and Appraisal Report - Appendix D - Economic Appraisal Package: Economic Appraisal Report [[APP-526](#)] the applicant refers to using MyRIAD a number of times. The Glossary makes it clear that this stands for **Motorway** Reliability Incidents And Delays appraisal software.
156. There may be others we have not yet come across amongst the tens of thousands of pages of documentation.
157. Whilst not signposted in the applicant's response to our oral representation we feel it appropriate to also comment on Deadline 1 Submission - 9.17 Issue Specific Hearing 1 Action number 3 Design and operational distinction between an all purpose trunk road (APTR) and smart motorway [[REP1-196](#)] which is of course relevant to our comments on the proposed LTC being a 'smart' motorway by stealth.
158. The public's concerns about 'smart' motorways are over safety issues, or rather the dangers of 'smart' motorways.

159. Table 2.2 Safety and operational features descriptors lists 7 safety and operational features, and all 7 that are present for All Lane Running (ALR) Motorways ('Smart' Motorways), but not for conventional APTR, are present in the proposed LTC design.
160. 2.7.1 of the same document states, 'The A122, whilst operating as an APTR, shall operate with permitted traffic classes I and II only which is the same as ALR motorways or any other type of motorway'.
161. Table 2.3 Permitted traffic classes in the same document, lists 11 traffic classes, out of those 11 the 9 that are not permitted on motorways are also not permitted on the LTC. The other 2 of the 11 are permitted on motorways, APTR, and the proposed LTC. This again shows that the proposed LTC has all the same traffic class permissions in common.
162. Regarding comments in Section 3 of the same document relating to the Written Ministerial Statement. The applicant seems to be suggesting that since the written statement did not identify the LTC as a cancelled 'smart' motorway scheme it is not relevant. However, the fact is that Government are not identifying the proposed LTC as a 'smart' motorway, because NH are disguising it as an APTR.
163. It also refers to the fact the Government decision about 'smart' motorways is due to the current lack of public confidence felt by drivers. We point out that many members of the public have the same concerns about the proposed LTC being a 'smart' motorway by stealth.
164. Just because you give a road green signage rather than blue signage does not make people feel safer.
165. It also doesn't matter whether it is a motorway hard shoulder being converted to a ALR 'smart' motorway, or a road like the proposed LTC that is being designed as a 'smart' motorway by stealth. The risks are the same and public concerns and lack of confidence are the same.

166. With reference to paragraph 3.1.6 specifically, we maintain that the reason why the Minister for Roads and Local Transport believes the proposed LTC is an APTR is because he trusts NH disingenuous information. When you consider the evidence in Appendix B of our Written Representation [[REP1-425](#)] it highlights the fact that different parties have been provided different information in regard to the design standards and 'smart' motorway aspects of the proposed LTC.
167. We can still see no genuine explanation as to why the proposed LTC is being designated as an APTR rather than a motorway, and there appear to be more similarities between the proposed LTC and 'smart' motorways than between the LTC and APTR.
168. We again stress, the proposed LTC would have no hard shoulder, would use 'smart' technology, it is coded as a 3 lane motorway (with the exception of southbound between the M25 and A13), it is being built to current design and safety standards for motorway class roads is being assessed using MyRIAD software, is proposed to take traffic motorway to motorway, particularly for port traffic in the South East connecting to the Midlands and beyond (largely using motorway routes). 7 out of 7 safety and operational feature descriptors for ALR Motorways would be used for the LTC. The LTC would operate with permitted traffic classes I and II the same as ALR motorways or any other type of motorway. The LTC would have all the same traffic class permissions as motorways. Members of the public are concerned about safety concerns and have a lack of confidence in the proposed LTC in the same way as members of the public have in regard to 'smart' motorways.
169. As the saying goes, "if it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck". The proposed LTC is designed and analysed like a 'smart' motorway, would operate like a 'smart' motorway, and concerns people like a 'smart' motorway. Our opinion remains that evidence shows that the proposed LTC is a 'smart' motorway by stealth.

170. In response to the applicant's comments on route locations/options, please see our further comments in our Written Representation [[REP1-425](#)] from point 223.
171. In addition to those comments we highlight that several weeks in to the 2016 consultation we questioned the then Parliamentary Under Secretary of State at the DfT, Andrew Jones MP, and he told us, 'I can confirm that Option A is included within the consultation and remains an option for consideration'.
172. By this time most people had been misled by Highways England (as the applicant was then known) in to thinking Location A was no longer an option. And is it any wonder when HE/NH are still stating that '*The 2016 route options consultation contained information about why Location C was being pursued instead of Location A*'.
173. In regard to the applicant's comments on our mentioning rail improvements as a better and more sustainable alternative to the proposed LTC. We do not agree that the proposed '*LTC would not prevent such an improvement to the rail freight network being provided*'. Government funding is not a bottomless pit of money, and wasting £10bn+++ on the proposed LTC which fails to meet scheme objectives and is not fit for purpose would definitely negatively impact the possibility of rail improvements being made. We suggest this more to do with the future proofing of NH as an organisation, and the fact that they are National **Highways** not National Transport. We need more joined up thinking and actions when it comes to transport, rather than a predominant focus on roads.
174. The applicant says '*...that improvement to the rail freight network between Ashford and Reading does not currently form part of either the DfT or Network Rail's plans to increase capacity of the rail freight network, nor is the Applicant aware of any published assessment of the benefit, feasibility or cost of providing such infrastructure.*' In response to that we highlight

that Kent Country Council's rail strategy¹⁹ does include it, and is also supported by Transport for South East (TfSE). The strategy comments about Network Rail providing rail analysis to support the studies it was working on with TfSE.

175. The applicant's comments go on to signpost us to their Deadline 1 Submission - 9.10 Post-event submissions, including written submission of oral comments, for ISH1 [REP1-183] which outlines things such as a new rail freight crossing on the River Thames as not being viable or realistic as an alternative to the LTC because there are insufficient rail intermodal distribution terminals.

176. The DfT were assessing a new river crossing to the east of London in 2009²⁰. In a 2011 Government statement²¹, it was stated in regard to strategic rail freight interchanges that: *"Rail can deliver goods quickly, efficiently and reliably and help reduce both congestion on our roads and levels of carbon emissions. To secure this longer-term growth and modal shift, rail needs to be able to compete effectively with the use of road by heavy goods vehicles, and it is significant that in recent years our major retailers have been keen to choose rail over road for the long distance carriage of goods to market. However, this expansion in rail freight will be very difficult to deliver unless the industry is able to develop modern distribution centres linked into both the rail and trunk road system - 'Strategic Rail Freight Interchanges' (SRFI) - in appropriate locations to serve our major conurbations. To date, this has proved extremely problematical, especially in the south east where growing demand and increasing congestion on the road network are creating serious logistical challenges."*

177. Yet as we have stated there hasn't been adequate consideration of rail alternatives to the proposed LTC road project, despite there being rail improvements between Ashford and Reading that would negate the need

¹⁹ https://www.kent.gov.uk/_data/assets/pdf_file/0014/13811/Kent-Rail-Strategy.pdf

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

²¹ <https://www.gov.uk/government/speeches/strategic-rail-freight-interchanges>

for the proposed LTC . So long as more roads are built, induced demand will see congestion continue to rise. We need to ensure that modal shift and alternatives are properly and fully considered.

178. We believe any consideration of rail alternatives have focused on cross river options, going through an already over capacity London rail network, rather than a London orbital as Ashford to Reading would be.
179. In regard to the applicant's comments about the LTC Accounting Officer Assessment. We note that it is stated that 'As a Tier 1 scheme, the project will return to the NH investment committee and DfT IPDC at six-monthly intervals (or sooner) if factors affecting the value for money, schedule, costs and/or benefits of the scheme change'.
180. Due to the project being rephased by two years, as per the announcement in March 2023, we would ask whether the project has returned to the NH investment committee and DfT IPDC?
181. In the same line of questioning we again question the estimated costs as at August 2020, when the applicant states they have used TAG data book v1.18 which came in in May 2022, and the associated changes to carbon costs from the Sept 2021 update. The dates and estimated costs just don't add up.