

**Application by National Highways for the Lower Thames Crossing
DPWLG Response to the Examining Authority's Written Questions and Requests for Information (ExQ1)**

ExQ1 Question to: Question:

4. Traffic and transportation

4.1 Modelling

Q4.1.7	Applicant	<p>Modelled Traffic Effects: Lower Thames Area Model and the Local Road Network</p> <p>It is noted that LTAM uses an AM peak of 0700-0800 whereas the AM peak on the local road network (LRN) is 0800-0900. What are the possible implications of this in terms of the traffic forecasts particularly at those locations where LTC interfaces with the LRN?</p> <p>DPWLG Response:</p> <p>This causes a number of complications in terms of the assessment of both Orsett Cock and Manorway Interchange which have, as yet, been unresolved. The approach taken by NH thus far is to present local junction modelling (REP1-187 and REP1-189) for both AM Peak periods (with the latter hour based on forecasts arising from traffic surveys independent from LTAM).</p> <p>There are clear and significant uncertainties at present between the two models. Whilst NH has sought to compare the conclusions of two modelling approaches in REP2-050, (which is not agreed), this is not possible for the 8-9 period and therefore the robustness (and correctness) of the modelling cannot be tested. Given 8-9 is critical this is a major flaw in the approach and needs to be resolved.</p>
Q4.1.8	Applicant	<p>Modelled Traffic Effects: Thames Freeport</p> <p>Can the Applicant explain how it has modelled the impact of the Thames Freeport, the implications for the LTC and also why the results of the work have not been shared with Port of Tilbury London Limited (PoTLL)?</p> <p>DPWLG Response:</p> <p>The DPWLG site falls within the Thames Freeport Boundary. The boundary includes an additional 32 Ha of land which is additional to that currently consented on site at DPWLG. The traffic implications of its potential development have not been included in any of the modelling work for LTC.</p>

ExQ1	Question to:	Question:
Q4.1.9	Applicant	<p>Modelled Traffic Effects: Traffic Flow Simulation: Orsett Cock</p> <p>Given the use of ‘actual’ rather than ‘demand’ flows and also the omission of Freeport traffic from the Vissim modelling, is it fair to say that the Applicant’s microsimulation modelling of the Orsett Cock roundabout submitted at Deadline 1 could represent an underestimation of flows through the roundabout?</p> <p>DPWLG Response:</p> <p>Yes. This highlights the fundamental concern of DPLWG. LTAM makes certain assumptions about the possible throughput of traffic through the junction. When these flows are input into Vissim, the junction demonstrably cannot accommodate those flows. Therefore, LTAM is under-estimating the amount of traffic that would ordinarily use Orsett Cock but cannot and, therefore, diverts elsewhere. The use of actual rather than demand flows further exacerbates this and the level of wider diversion / reassignment will be higher than that which has been assessed.</p>
Q4.1.10	Applicant, Thurrock Council, PoTLL, DPWLG, LRN stakeholders	<p>Modelled Traffic Effects: Traffic Flow Simulation: Orsett Cock</p> <p>If the traffic impacts at Orsett Cock roundabout have not been fully understood and/or modelled, what are the wider implications for the Applicant’s Transport Assessment?</p> <p>DPWLG Response:</p> <p>As set out in REP1-333, REP1-187, REP1-189 and REP2-050, based on the Applicants current microsimulation (Vissim) modelling Orsett Cock is operating well over capacity in practical terms and cannot accommodate the level of traffic that the LTAM forecasts.</p> <p>The degree to which that will manifest is different between the detailed junction modelling approaches taken by DPWLG and the applicant, but both approaches confirm the junction will be well over capacity. This will mean that not all of the traffic flows forecast by the strategic modelling (LTAM) will be able to get through the junction. They will therefore be diverted elsewhere across the network.</p> <p>The implications of this in terms of the Applicant’s Transport Assessment is that it over-estimates the level of traffic than can use Orsett Cock and therefore under-estimates the level of traffic that will have to route through other junctions or inappropriate routes as a result.</p>

ExQ1	Question to:	Question:
		<p>The effects of these changes need proper and detailed assessment by the Applicant. At present the outcomes of the LTAM and local junction modelling assessments (Vissim) conflict with and contradict each other. LTAM (as a strategic model) is most likely in error and underestimates the impact of that traffic routing elsewhere and the impact of that traffic on other junctions (Manorway Interchange being of Principal Concern to DPWLG) has not been assessed.</p> <p>The approach to resolve this (significant) deficiency is to provide adequate assessment to demonstrate that the two modelling approaches converge in terms of assumed capacity for Orsett Cock. There are two options for this as described in REP3-154 Table 4. Neither of these options are disproportionate given the real potential for significant and serious impacts to arise.</p>
Q4.1.12	DPWLG	<p>Modelled Traffic Effects: Ports Access: Orsett Cock and Manorway</p> <p>DP World London Gateway (DPWLG) states that the Applicant has not submitted detailed modelling to demonstrate that the status quo in terms of access to the port will be maintained. However, additional modelling work was submitted at Deadline 1 [REP1-187]. What is DPWLG response to the additional information insofar as it relates to the Orsett Cock and Manorway junctions?</p> <p>DPWLG Response:</p> <p>Our response to REP1-187 is set out in full in REP3-154. The additional modelling submitted in REP1-187 still has fundamental failings in terms of assessing the real impact of LTC, which principally relates to the large level of Latent Demand in the model (see Table 2 of REP3-154). Once resolved, the overall delay and queuing will inevitably increase and this impact needs to be fed back into the assessment (see response at Q4.1.10).</p> <p>Furthermore, as set out in response to Q4.3.3 below there remain unexplained differences in turning movements at Orsett Cock which need to be resolved prior to any agreement on the modelling.</p>
Q4.1.14	All	<p>Modelled Traffic Effects: Lower Thames Area Model: TAG Compliance</p> <p>Does any party disagree with the Applicant's conclusion that the LTAM is TAG compliant? If so, please explain why.</p> <p>DPWLG Response:</p> <p>DPWLG is not taking issue with compliance with TAG. However, for the reasons explained orally at ISH4, there is a significant lack of convergence between the strategic and local traffic model approaches prepared by the applicant which needs explanation.</p>

ExQ1 Question to: Question:		
4.2 Mitigation		
Q4.2.5	Applicant	<p>Mitigation Security: Orsett Cock</p> <p>The Applicant's Deadline 1 submission "Localised Traffic Modelling" [REP1-187] suggests that changes to the traffic light layout, timings and sequencing would be required at Orsett Cock to optimise flows. How would this work be secured in the DCO?</p> <p>DPWLG Response:</p> <p>DPWLG position at present is that more significant works are required at Orsett Cock to accommodate future forecast flow changes, as a direct result of LTC. A process for securing this through the DCO needs to be discussed.</p> <p>Notwithstanding what is stated in REP1-187, the modelling also relies on physical changes to the junctions in terms of slip road alignments and lane allocation. Physical changes will be required to the junction and the process for securing will need to be confirmed in the DCO. As mitigation is necessary there will be a need to consider how this can be accommodated in the draft order having regard to funding, timing and delivery of the necessary works and any implications for further land take. In this context it should be remembered that Orsett Cock is a fundamental element of the scheme which forms part of the junction arrangements between LTC and the A13 and falls with the overall DCO red line.</p>
Q4.2.6	DPWLG/ PoTLL	<p>Mitigation Design: Orsett Cock and Manorway</p> <p>Is it accepted that adequate mitigation at Orsett Cock would obviate the need for the same at the Manorway junction?</p> <p>DPWLG Response:</p> <p>No. Adequate mitigation at Orsett Cock is necessary to ensure appropriate weight can be given to the conclusions of the LTAM modelling. The agreement of the modelling (with or without mitigation) is required to allow proper assessment of the performance of the Manorway Interchange. However, if LTAM is agreed to be appropriate as submitted, as set out in REP1-333 (para 2.3.30) there are residual impacts at Manorway Interchange which, whilst not affecting inbound traffic to DPWLG significantly, are likely to require mitigation by Thurrock Council (because there are significant impacts on local roads). The impact of this needs to be fully considered.</p>

ExQ1	Question to:	Question:
Q4.2.8	DPWLG	<p>Policy Approach to Maintaining Existing Network ‘Status Quo’</p> <p>Can DPWLG explain what sections of the NPSNN support its view that the ‘<i>status quo must be maintained</i>’?</p> <p>DPWLG Response:</p> <p>The operations of the Port and Logistics Park are dependent upon on the maintenance of free-flowing access to ensure ongoing efficiency, as well as operational and economic resilience.</p> <p>Prior to the Port coming into operational use in 2013, DPWLG carried out Improvements to Manorway Interchange at a cost of approximately £10m. These works were required by Schedule 6 of the London Gateway Port Harbour Empowerment Order 2008 and are listed below:</p> <ul style="list-style-type: none"> (a) widening of the entry lanes from the B1007 onto the gyratory from 2 lanes to 3 lanes; (b) widening of the entry flare from the A13 westbound off-slip onto the gyratory; (c) widening the A1014 exit arm from the gyratory from 2 lanes to 3 lanes; (d) widening the entry arm from the A1014 onto the gyratory from 2 lanes to 4 lanes; (e) widening the exit arm from the gyratory onto the A1013; (f) widening the entry arm from the A1013 onto the gyratory from 1 lane to 2 lanes; (g) minor alterations to the exit arm from the gyratory to the A13 westbound on-slip; and (h) widening the entry arm from the A13 eastbound off-slip from 2 lanes to 3 lanes <p>In addition to the above, DPWLG committed a further £7.8 million to improvements to Orsett Cock Junction and the widening of the A13 between 2016 and 2018. The access upgrades were required as part of the Port Harbour Empowerment Order (2008) to ensure free flowing and uninterrupted access to the Port, which is an essential requirement for the Port to operate and function effectively. As such, if the status quo were not maintained, there would be significant adverse impacts on the operations of the Port and the Logistics Park.</p> <p>As set out within our Written Representations [REP1-333], increased congestion at Manorway Interchange would adversely impact on the operations of the Port as HGVs would be more likely to miss pre-booked drop-off/ collection slots, which in turn would lead to additional time spent rearranging the container stack and increases to average Truck Turnaround Times. This would ultimately impact on the competitiveness and resilience of the Port. In this context, it is relevant to highlight paragraphs 3.4.13 – 3.4.15 of NPS for Ports (2012) which place particular emphasis on the resilience and competitiveness of national ports. RIS2 (2020) also confirms the importance of reliable, predictable, rapid access to ports with one of the overarching aims for the SRN being to improve links to ports.</p> <p>In considering the NPSNN, Section 2 emphasises the significant role of national networks in supporting economic growth, as well as existing economic activity and productivity. Paragraph 2.6 emphasises the economic role of development on the</p>

ExQ1	Question to:	Question:
		<p>national networks needed to “support national and local economic growth and regeneration, particularly in the most disadvantaged areas.”</p> <p>Paragraph 2.8 is particularly relevant in stating that there is a need “to improve the integration between the transport modes, including the linkages to ports and airports. Improved integration can reduce end-to-end journey times and provide users of the networks with a wider range of transport choices.”</p> <p>The general principles of assessment in section 4 of NPSNN emphasise that in considering any proposed development, the ExA and the SoS should take into account: - “its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long-term or wider benefits; its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.”</p> <p>Given DPWLG delivered the required highways mitigation and capacity to match the full development requirements of the Port, any material reduction in capacity would not be appropriate as it would adversely impact on its operations. In that context, the status quo must be maintained (through appropriate mitigation by the Applicant) to ensure the operational and economic resilience of the Port in line with relevant national guidance.</p>
4.3 Operational Traffic		
Q4.3.2	Applicant	<p>Orsett Cock - DTA Analysis</p> <p>Analysis by DPWLG indicates that extensive queuing would occur on the LTC and A13 off- slips to the Orsett Cock roundabout as well as the A128 approach. Does the Applicant agree with the findings of the DTA? If not, please provide clear reasons why.</p> <p>DPWLG Response:</p> <p>It is noted that this is intended for the Applicant but we provide the following to aid consideration of the issue.</p> <p>The modelling results of the DTA assessment are demonstrably comparable with NH’s own Vissim assessment. Following further clarification detail provided by NH at Deadline 2 (including the modelling files) and on the 1st September 2023, the input data to the DTA assessment in REP1-333 has been superseded, so a revised assessment would show different outcomes in the detail but the headline conclusion remains robust.</p>

ExQ1	Question to:	Question:
		<p>The queuing and congestion at the junction in respect of the NH modelling was discussed in detail at a meeting on 16th August 2023. NH accepted that the modelling results (Vissim) would need to be reviewed to address local model deficiencies and to address the latent demand issue. They have undertaken to update the model to reflect that and subject to that being undertaken in an agreed manner would ideally provide a single agreed model assessment which would supersede any modelling undertaken by DPWLG as an IP.</p> <p>Separately DTA have been approached by the applicant to agree a set of turning movements to allow the DTA assessment to be re-run. DTA requested confirmation of turning movements on 8th September 2023 and when that is provided by the applicant will provide an updated assessment for consideration by the panel.</p>
Q4.3.3	Applicant	<p>U-turning Vehicles at Orsett Cock</p> <p>Can the Applicant quantify the number and type of U-turning vehicles at Orsett Cock roundabout in the various assessment scenarios?</p> <p>DPWLG Response:</p> <p>The presentation provided by the applicant at ISH4 was misleading in terms of the change in movements at Orsett Cock and movements to Tilbury. Slide 32 of AS-146 shows only LTC to Tilbury Ports as movements around the junction from LTC and slide 31 of AS-146 suggests all Tilbury Traffic will arrive from the M25J30.</p> <p>In relation to the Tilbury movements, it is wrong to say (as suggested on Slide 31) that movements will use the M25 J30 to reach Tilbury. As shown at Table 8.29 – 8.31 of the TA Appendix C (Transport Forecasting Package), shows that 9% of all movements on the LTC will be routing to A1089. Furthermore Para 7.3.28 confirms that:</p> <p>7.3.28 The traffic travelling north across the River Thames on the A122 is destined as follows:</p> <ul style="list-style-type: none"> a. 80% of HGVs would continue north towards the M25. b. 20% of HGVs would turn east on to the A13. <p>7.3.29 The traffic travelling south across the River Thames on the A122 originates as follows:</p> <ul style="list-style-type: none"> a. 71% of HGVs would come from the M25. b. 18% of HGVs would come from the A13 westbound c. 13% of HGVs would come from the A1089 northbound.

ExQ1 Question to: Question:

There is clearly a heavy reliance on Orsett Cock to accommodate these movements. In addition to this are in fact three key additional movements at the junction as highlighted below.

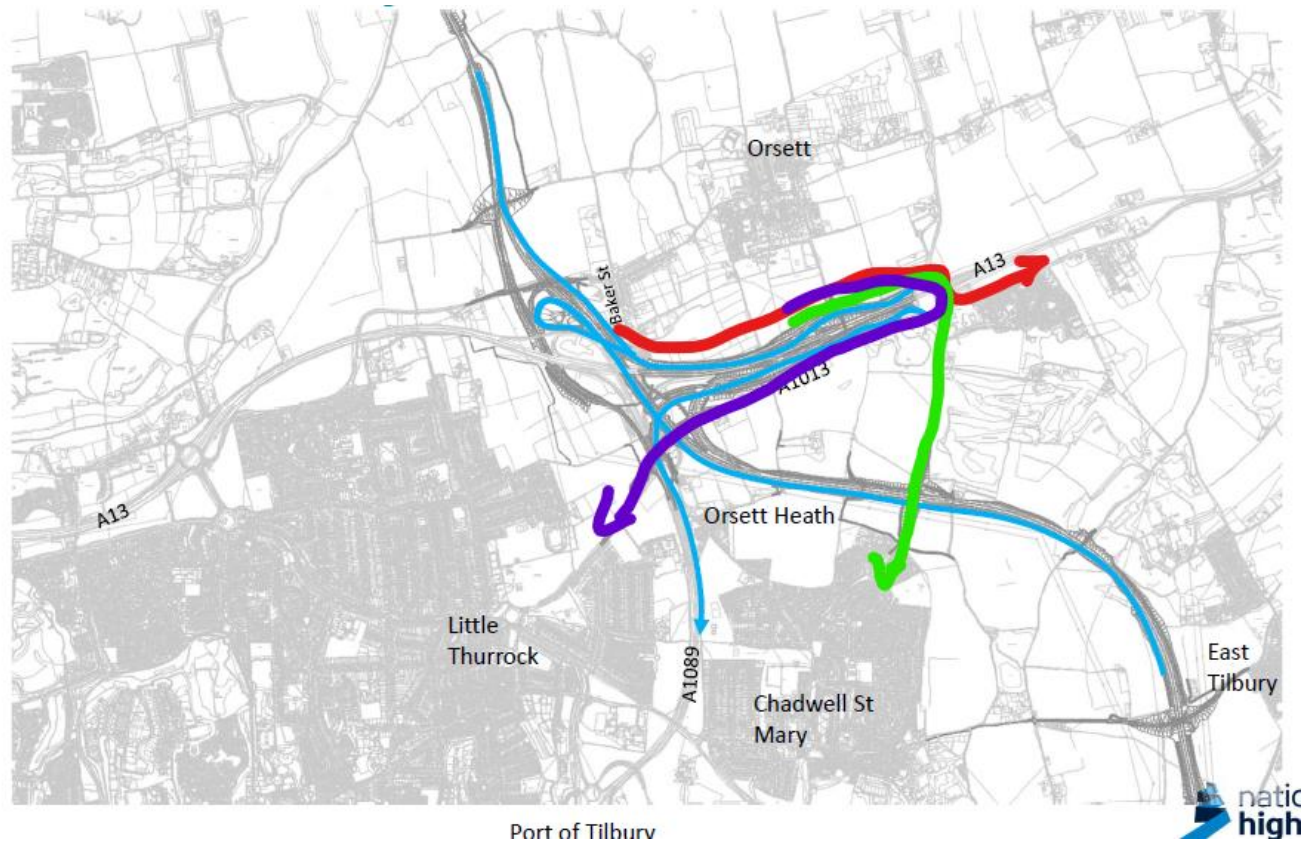
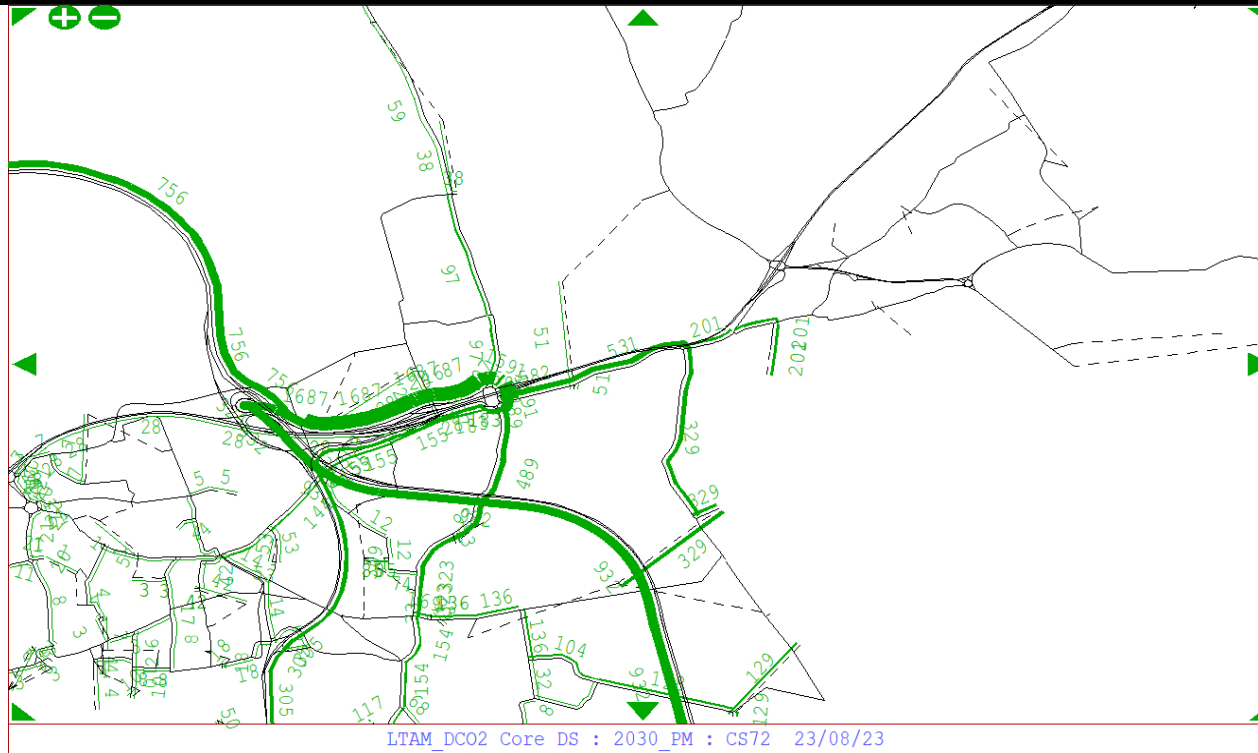


Table 1 of REP3-154 shows change in traffic inputs (as extracted from the NH Vissim model) with and without the LTC. There are significant changes to flows from LTC to the A13 and A1013 Westbound, but also to the south (Brentwood Road) and east A1013 towards Stanford Le Hope. These are significant and material changes in flows on all arms of the junction. This issue has been further clarified by data provided by the applicant in respect of the LTAM model, an extract of which is provided below which is the extract of movements to Orsett Cock from LTC in 2030 PM Peak.

ExQ1 Question to: Question:



The data shows three key issues:

- 1) The level of traffic approaching / using Orsett Cock from the LTC is in the order of **1,700** PCUs
- 2) The level of U-turning traffic (i.e A13 EB – A13 W/B) is lower than DTA had previously assumed and is around 309 PCUS.
- 3) However, in addition to this there is a significant flow from LTC to both Brentwood Road (489 PCUs), A1013 Eastbound (towards Stanford Le Hope (582 PCUS) and A1013 Westbound (183 PCUs).

ExQ1	Question to:	Question:
		<p>REP2-154 confirms the concern that congestion at Orsett Cock is likely to lead to a version or reassignment to Orsett Cock as follows:</p> <ol style="list-style-type: none"> 1) Significant queuing on the A128 southbound approach will mean traffic using this as route from the A127 to join the A13 is likely to use the B1007 and Manorway Interchange in preference. This was a concern raised in REP1-333. 2) Those travelling from the LTC to Tilbury, Little Thurrock or Chadwell St Mary, will see the existence of a lengthy queue on the approach to Orsett Cock (the junction itself will not be visible from the tail of the queue) and chose then to avoid the queue and instead U-turn at Manorway Interchange. The assessment at 2.2.34 of REP1-333 clearly shows the journey time via Manorway Interchange is clearly comparable with the applicants own Vissim assessment of movement through Orsett Cock. 3) Of further concern, now that the above information has been provided is those significant number of vehicles (nearly 600 PCUs) who are using Orsett Cock to reach Stanford Le Hope. For those movements, clearly the use of Manorway Interchange is likely to be equal in terms of journey time even without delays at Orsett Cock and there is a high chance those will route via Manorway Interchange for the same reasons as described above. A comparative assessment from google below highlights this:

ExQ1 Question to: Question:

Orsett

29 London Rd, Stanford-le-Hope SS17 0N

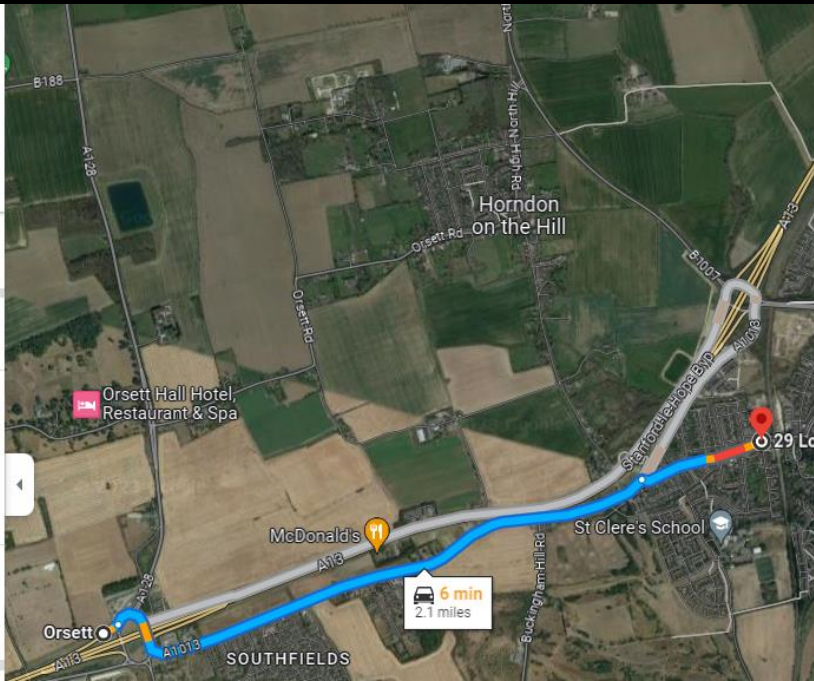
Add destination

Leave now Options

Send directions to your phone

via Stanford Rd/A1013 **6 min**
Fastest route now due to traffic conditions 2.1 miles
Details

via Stanford-le-Hope Byp/A13 **7 min**
Some traffic, as usual 3.3 miles



This new information, therefore, highlights (and heightens) the concerns raised about the potential impact of the scheme at Manorway Interchange.

Q4.3.4 Applicant

Variation in the number of A13/A1089 Turning Movements

There appears to be a very significant difference between the forecasts of the Applicant and DPWLG in respect of the number of U-turning vehicles. For example, paragraph 2.2.8 of the DTA Report [Annex A, REP1-333] refers to 1,000 and 1,300 in the AM/PM peak hours respectively while the Applicant's Deadline 2 submission [REP2-050] (Table A.2) refers to 231 and 204 PCUs. How does the Applicant explain these differences?

DPWLG Response:

The 231 and 204 relates to vehicles travelling from LTC to the A1089. It does not include other movements using Orsett Cock as a result of the LTC using other routes as described above. This has been clarified in Table 1 of REP3-154 and Para 2.1.6.

ExQ1	Question to:	Question:
		<p>Separately DTA have been approached by the applicant to agree a set of turning movements to allow the DTA assessment to be re-run. DTA requested confirmation of turning movements on 8th September 2023 and when that is provided by the applicant will provide an updated assessment for consideration by the panel.</p>
Q4.3.5	Applicant	<p>Diversion Routes</p> <p>Can the Applicant explain the strategic diversion routes in the event of a closure of the Dartford Crossing once the Lower Thames Crossing is operational?</p> <p>DPWLG Response:</p> <p>This remains a fundamental concern of DPWLG as described in Section 3.2 of REP1-333 Annex A. The impact arises not just from closure of the Dartford Crossing but the numerous other daily incidents which are likely to result in regular diversion of traffic to the new crossing (and therefore to the A13 corridor).</p>
Q4.3.9	DPLGW/ PoTLL	<p>Overall Comparison of journey times to/from Ports</p> <p>Has DPWLG carried out an overall assessment of journey times to/from the port with/ without the scheme? If so, does DPLGW agree with the Applicant's view that despite increased delays at Orsett Cock the overall effect on the port would be beneficial? (See Transport Assessment Appendices B and C).</p> <p>DPWLG Response:</p> <p>No. At present the position of DPWLG is that they have significant concerns raised about the reliability of LTAM in forecasting capacity and throughput of the local junctions. Until the known capacity issues (as highlighted by the Applicant's own assessment at Orsett Cock and Manorway Interchange) have been resolved, little weight can be given to the conclusions set out in the Transport Assessment Appendices B and C.</p> <p>The overall journey times savings reported in the TA (Appendices B and C) would be welcomed if they can be justified. At present the journey times savings resulting from removal of traffic needing to route via M25 J30 are noted. However, at present the implications of queuing and delay at Orsett Cock (and therefore also Manorway Interchange) are not properly reflected in the LTAM journey times and therefore are not considered robust.</p> <p>Furthermore, the impact of journey time reliability on the immediate approach to Manorway Interchange on the A13 (as set out in Section 301 of the written representation (REP1-333) have not been taken into account in the outputs. This is confirmed by the Applicant's own assessment (Para 7.7 of the Combined Appraisal and Modelling report) as resulting in journey times</p>

ExQ1	Question to:	Question:
		becoming “more unreliable”. The sensitivity of this needs consideration as part of any assessment of likely impacts (or indeed benefits).