

M25 junction 28 improvement scheme

TR010029

9.55 Written submission of Applicant's case put orally at Issue Specific Hearing 1 on Environmental matters held on 3 and 4 March 2021

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M25 junction 28 scheme

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ISSUE SPECIFIC HEARING 1 (ENVIRONMENTAL MATTERS) FROM 3 MARCH 2021 TO 4 MARCH 2021

1. Introduction

- 1.1.1 This document summarises the case made orally by Highways England, as the promoter of the M25 junction 28 improvement scheme (the Scheme), at the first Issue Specific Hearing (ISH1) which commenced on 3 March 2021 and reconvened on 4 March 2021.
- 1.1.2 Mark Challis (**MC**) of BDB Pitmans represented Highways England and was assisted by Steve Katesmark (traffic lead), Simon Harris (design lead), Kae Neustadt (heritage lead), Neil Hutchins (landscape lead), Evelina Maier (environment lead), Adam Lawrence (noise lead), Thomas Dale (arboriculture lead), Jane Brinkley (ecology lead), Liz Gray (waste lead) and Freya Crunden (climate change lead).
- 1.1.3 This document sets out Highways England's submissions on the points raised during the ISH1 set out in line with the Examining Authority's (**ExA**) agenda published on the Planning Inspectorate website on 24 February 2021.

2. Agenda item 1 – Welcome, introductions and arrangements for the hearing

- 2.1.1 No questions of an introductory or preliminary nature were raised by Highways England or by other attendees at the ISH1.

3. Agenda item 2 - Traffic and transport (including air quality effects)

Agenda item 2.1 - Baseline Data presented in the Transport Assessment Report [APP-089] and Transport Assessment Supplementary Information Report submitted by the Applicant at Procedural Deadline B [PDB-003].

- 3.1.1 MC introduced Steve Katesmark (**SK**) to provide the ExA with a summary of the headline problems at M25 junction 28 and the improvements that the Scheme is designed to deliver.
- 3.1.2 SK explained that the current problems at the junction are that it is running over capacity with significant peak time congestion and delay experienced at the junction on several of the off-slips from the A12 and the M25. There are also delays on the approach to the junction on Brook Street from Brentwood. SK explained that those delays are forecast to get significantly worse in the future with forecast traffic growth which will lead to extensive delays and queuing back from the junction onto the mainline carriageways on the M25 and A12 during peak periods.

- 3.1.3 SK then described how the Scheme would deliver improvements to these problems. The additional loop road proposed means that less traffic in the future would have to use the roundabout because traffic from the M25 south heading for the A12 east would be directed over the flyover on the M25 and would instead use the proposed loop road to travel east on the A12. This would eliminate one of the biggest movements currently through the roundabout, which would release additional capacity at the roundabout to accommodate forecast traffic growth. This means that the junction in the future will operate within capacity and thereby reduce congestion and delay through the junction.
- 3.1.4 The ExA queried whether SK considered road safety to be a significant issue at the junction. SK explained that there are two types of accidents that Highways England referred to in its transport assessment. These are:
- nationally recorded statistics on accidents which result in injuries; and
 - other accidents which do not involve injuries but do have implications on the operation of the junction because when they occur, they cause disruption to traffic flow and additional delay at the junction.
- 3.1.5 SK noted that the accident records show that there are a low number of accidents at junction 28 that cause injuries relative to other similar junctions on the M25.
- 3.1.6 However, there are a notable number of shunt accidents, due to congestion, which do not result in injuries. These accidents have implications for the operation of the junction as they disrupt traffic flow and cause additional delay at the junction, especially during peak periods.
- 3.1.7 SK concluded that, in terms of road safety, injury accidents are not a major concern for the junction improvement, but shunt accidents are significant in terms of the operational performance at the junction. It is important to reduce the number of shunt accidents due to their detrimental impact on the capacity and operation of the junction. SK noted that a positive side effect of the Scheme is that it would, as well as reducing congestion and delay, be likely to reduce the number of shunt accidents and therefore also reduce the number of incidents per year when there is congestion caused by those types of incidents.
- 3.1.8 The ExA requested clarification as to why the baseline data in the baseline chapter of the transport assessment (Table 4-3) differed to that presented in Section 5 (Tables 5-4 and 5-7) of the same report. SK noted that he would need to confer with colleagues but suspected the start and end points for the journey times presented in Table 4-3 are different to those used in Section 5. SK noted that Table 4-3 shows only the delays through the junction at the roundabout itself where the numbers shown in Table 5.4 are over the journey time routes presented in the Appendix B of the Transport Assessment which extend further. SK noted that whilst he thought Section 5 of the Transport Assessment was clear in relation to journey time routes with the appendix clearly showing them, the position on baseline data presented in Table 4-3 could be clearer and agreed to submit some wording to the ExA which would clarify this difference.

Action 1 – Applicant to issue a clarification on the Transport Assessment – Baseline Data chapter – to confirm that the delays recorded are at the junction (roundabout) therefore different the journey time (through time).

Response – See Highways England's response to action point 1 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Agenda item 2.2 - Whether an assessment on the Proposed Development at Gallows Corner is required and if so, the likely effects the Proposed Development would cause.

- 3.1.9 In response to submissions proposing that impacts on the borough road network are not adequately covered. SK explained that Highways England has carried out strategic modelling (noting this was a reassignment model) and that this looked at the impact of the Scheme in terms of the redistribution of traffic across the wider network. SK noted that the traffic modelling has shown that there is a minimal rerouting of traffic as a result of the Scheme and that improving capacity at the junction did not attract additional traffic from other routes on the road network. SK noted that this was shown in the figures in Section 4 of the Transport Assessment Supplementary Information Report ([PDB-003](#)). These figures demonstrate that the changes in traffic flows on the surrounding road network are very small and not significant. Accordingly, Highways England's position is that further detailed modelling is not required.
- 3.1.10 SK then explained that a more detailed operation traffic model (the VISSIM model) was built specifically to analyse the impact of the Scheme more accurately at J28 and not to look at the impacts of the Scheme on the wider road network, other than on Brook Street. The operational model did not look at those wider aspects because there was no need to because the traffic flows as a result of the change due to the Scheme are not significant enough to warrant that detailed level of modelling. SK noted it was important to bear in mind that this Scheme is aimed at reducing congestion on the strategic road network (**SRN**). It is a Highways England scheme aimed primarily at addressing issues on the SRN and it is not designed to solve all the problems of the surrounding area.
- 3.1.11 In responses to Transport for London's (**TfL**) assertion that the National Trip End Model (**NTEM**) is not suitable for forecasting traffic growth in London, SK explained that in terms of the SRN, the Department for Transport (**DfT**) give very clear guidance of the data that should be used. This guidance is the transport analysis guidance (**TAG**), which is guidance for the assessment of traffic impacts on the SRN. The recommended methodology is to adopt the national trip end model as the basis of any forecasting. Highways England has adhered to the methodology recommend by the DfT in TAG.
- 3.1.12 SK explained that this methodology was appropriate given that junction 28 is on the SRN and on the outer boundary of London. The model took account of a wide area and national level trips. Highways England consider this to be a much more appropriate forecasting tool than just to focus on London, and to model only those

trips within the M25. SK confirmed that Highways England is confident that the approach taken is the correct approach and is fully compliant with TAG from DfT.

- 3.1.13 SK noted, in response to London Borough of Havering (**LBH**) submitting that sub-regional growth should be included in the model, that TAG provides clear guidance related to assessing sub-regional growth and what development should be included and how it should be categorised. The uncertainty log ([Appendix A of REP2-012](#)) was created by Highways England in line with this guidance.
- 3.1.14 SK explained that TAG details 4 categories for future forecast developments, and it is quite clear that emerging local plans, such as LBH's, would not be categorised as certain enough to be included within the core scenario and therefore excluded. SK confirmed that sub-regional growth is not in the model explicitly as those developments are not considered certain enough as the plan is not yet adopted, and planning permission not secured for those development sites. However, TAG does provide a method to account for this growth, which Highways England has followed.
- 3.1.15 TAG suggests undertaking sensitivity tests for low and high traffic growth forecasts. This is to check the robustness of the Scheme under different scenarios. Highways England has undergone this sensitivity testing and produced low and high scenarios. SK explained that the high growth scenario takes a formula-based approach which adds on a proportion of traffic to the core scenario estimate to derive a high growth scenario. This testing does not specifically account for identified developments within LBH's emerging local plan, but the sensitivity test does capture these developments indirectly as a high level of growth is assumed within the whole area.
- 3.1.16 SK explained that Highways England considers that this sensitivity test effectively takes does account for sub-regional growth in LBH as part of the high growth scenario. The results of this modelling are shown in section 4 of the Transport Assessment Supplementary Information Report, which clearly shows that even with that high growth, the resulting changes in traffic flow on the local wider road network are still very small and not significant. The amount of released capacity at the junction due to the Scheme, under any of the scenarios, does not have a significant impact on the rerouting of traffic over the wider road network.
- 3.1.17 Highways England is comfortable that the traffic modelling and assessment of the Scheme has demonstrated robustness. In a high-growth scenario there are impacts on the junction itself, but this does not have a significant impact on the wider road network.
- 3.1.18 SK noted that the high growth scenario does alter traffic flows on some approach roads to Gallows Corner, but the overall change in traffic throughput is still minimal and insufficient to have material impact on its operational performance.
- 3.1.19 SK emphasised that it is for LBH to identify the impacts of their local plan on the road network as part of their transport assessment for their local plan. They would need to identify and implement mitigation measures for any adverse impacts of their local plan through the Local Plan Infrastructure Delivery Plan. It is not for

Highways England to resolve issues at Gallows Corner on behalf of the local authority.

- 3.1.20 SK also noted that it is evident from the sensitivity tests undertaken that the assessment is robust. Therefore, even if the London Plan growth was used instead of the national trip data, the results would be similar. SK also drew the ExA's attention to the fact that the uncertainty log did account for the London Plan.
- 3.1.21 SK confirmed again in relation to the data used for modelling that Highways England had followed guidance and used NTEM. SK noted that despite different views on the most appropriate way to derive future forecast growth on the road network, the high and low sensitivity test shows that there are no significant effects of rerouting of traffic as a result of the Scheme. Had it shown there was, there may have been a case for looking at the forecast growth in a bit more detail and doing further analysis. That would only be the case if the traffic modelling indicated that wider rerouting of traffic due to the Scheme was sensitive to high and low growth scenarios. What the sensitivity testing shows is it is not sensitive, therefore regardless of the forecasts the outcome of the Scheme is likely to be very similar i.e. very minimal changes on the wider road network.
- 3.1.22 To conclude, SK confirmed in response to the ExA question 'is it reasonable to say that Highways England's view is that had London Plan data been used the results would generally be not different' SK responded - yes. That was a matter of 1 to 2% changes in flows on the A12 and within the accuracy of traffic modelling that is not a significant change. SK advised that in his view, doing more localised modelling would not provide any more useful information about the operation of road network than that already presented. Further, the uncertainty log did take account of the London Plan in forecasting.
- 3.1.23 SK concluded by stating that the Scheme would reduce the likelihood, and therefore the frequency, of incidents at J28 that can result in significant traffic congestion and delay in the vicinity, especially on the M25, A12, A127 triangle. Consequently, an added benefit of the Scheme is that it will reduce the frequency and severity of these events.
- 3.1.24 The ExA asked in the absence of information for the Lower Thames Crossing scheme (LTC), what assessment had been made to calculate cumulative impacts with and without the LTC scheme. SK responded to this and explained that LTC had been accounted for in the operational scenarios, both Do Minimum and Do Something scenarios. Highways England has assumed that LTC is operation in the 2037 future year modelling. SK acknowledged that LTC was not included in a cumulative assessment of construction traffic impacts because information on the LTC construction traffic generation and temporary traffic management arrangements was not available when the traffic modelling for the Scheme was undertaken.
- 3.1.25 SK noted that the temporary traffic management measures proposed to construct the Scheme have been put in the traffic model and this has demonstrated that there is very little displacement of traffic onto the wider road network as a result of those temporary traffic management arrangements. SK concluded that if the LTC

scheme did result in some displacement of traffic, the construction of the Scheme would not add anything to this situation.

- 3.1.26 SK explained that the modelling used the latest available LTC modelling data when Highways England commenced assessments for the Scheme. SK noted that traffic modelling needs to be completed ahead of the environmental assessment, as these assessments utilise information from the traffic modelling. SK acknowledges that LTC have subsequently updated their data and this Scheme has not used this in their traffic modelling. However, SK considered that any increase in the data would be accounted for through the sensitivity test with a high growth scenario that was carried out for this Scheme. This sensitivity testing demonstrates minimal rerouting of traffic on the wide road network. SK explains that more importantly it also shows that this junction still performs well under that higher growth scenario, and if anything provides a higher value for money in terms of benefit cost ratio, because the congestion of the junction in the future without the Scheme is forecast to be even worse, and therefore the benefits you get from the Scheme are greater.
- 3.1.27 SK noted that the modelling in the core scenario (that includes LTC) does show that the M25 main line over the viaduct is approaching capacity in 2037. However, the loop road still provides significant journey time savings, even with the additional delay on the main line carriageway, and therefore provides benefits for traffic using the roundabout itself. SK confirmed that Highways England are aware of the wider issue relating to the LTC's wider impacts on M25, between junctions 27 and 29 and explained that Highways England are currently looking into that issue. Highways England have not yet identified any specific measures or mitigation that might be required.

Agenda item 2.3 - Extended inter-green signalling at Brook Street presented within the Transport Assessment Supplementary Information Report [PDB-003]

- 3.1.28 MC and TfL initially confirmed to the ExA the ownership of the roads surrounding the Brook Street junction. TfL's responsibilities cover the A12 main carriageway up to the point underneath the eastern arm of the Brook Street roundabout and also includes the eastbound A12 off-slip and the westbound A12 on-slip. The roundabout itself is the responsibility of Highways England. The junction of Brook Street with junction 28 is also the responsibility of Highways England. Essex County Council (**ECC**) is responsible for Brook Street.
- 3.1.29 MC confirmed that it is Highways England's intention to introduce the extended inter-green arrangement at the junction of the A12 east off-slip with the junction 28 roundabout as part of the Scheme. MC confirmed that no explicit requirement to deliver the extended inter-green as part of the Scheme is included in the draft DCO.
- 3.1.30 MC reiterated that organising signal timings at junction 28 falls within Highways England's responsibility to manage the SRN in an appropriate and responsible way. MC concluded that placing a requirement within the DCO that dictated the signal timings would be excessive and unusual. Highways England's is aware of the benefits of the extended inter-green and that is why Highways England propose to introduce it as part of the Scheme.

3.1.31 MC agreed to give some thought to how Highways England could give further assurance to the relevant local authorities and TfL that the inter-green arrangement would be implemented, including the possibility of in the traffic management plan (though this was largely for construction rather than operation so may not be the best place) or in a side agreement with TfL.

Action 2 – Applicant and TfL to issue further assurance to the interested parties (IPs) regarding the intergreen signalling at Brook Street and to explore if this can it be secured in the DCO or a separate legal agreement? Applicant is going to look to discuss with TfL to agree a provision.

Response – see Highways England's response to action point 2 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

3.1.32 SK then responded to 3 queries raised by Brentwood Borough Council (**BCC**) and confirmed that the extended inter-green is currently intended to be:

- a 3 second duration to allow traffic to leave Brook Street more easily;
- implemented prior to first use, not during construction; and
- the further designated funding for Nags Head Lane and Mascalls Lane is progressing through a separate approval process within Highways England.

Agenda item 2.4 - The absence of an outline Traffic Management Plan (TA 1.1) and whether sufficient information is contained within the Supplementary Information Reported [PDB-003].

3.1.33 MC confirmed that Highways England is currently preparing an Outline Traffic Management Plan (**OTMP**) and this will be submitted at Deadline 4.

Action 3 - Outline Traffic Management Plan to be submitted into the Examination.

Response – see Outline Traffic Management Plan (TR010029/EXAM/9.52) submitted at Deadline 4.

3.1.34 SK provided a brief outline of the topics proposed to be covered and the level of detail intended to be included in this OTMP. SK stated that in essence it will include:

- a description of proposed temporary traffic management proposals required to implement or construct the Scheme;
- outline of the durations of proposed temporary traffic management proposals and a programme; and
- include estimated construction traffic generation over the construction programme.

3.1.35 SK also confirmed to the ExA that proposed diversion routes during any closures will be identified in the OTMP. The plan will also explain the frequency and likely duration of any specific closures.

- 3.1.36 SK explained that it is unavoidable that some overnight closures of the A12 eastbound off-slip to J28 would be required. This would result in traffic diverted down to the next junction along the A12. SK acknowledged that this is a reasonable distance but equates to an additional journey time of only approximately 12 minutes for Woodstock Avenue residents wishing to travel westbound on the A12. This would be an overnight closure when there would be little traffic on the road network. This closure is therefore likely to have a minimal impact on Woodstock Avenue residents. SK stated that Highways England is committed to minimising impacts during construction of the Scheme.
- 3.1.37 SK confirmed that those in the area would be informed in advance of any planned diversion to the road network. SK explained that generally Highways England would make use of their variable message signs on the road network to keep people informed. Highways England would also use the media to ensure advanced warning of closures is circulated.
- 3.1.38 The ExA asked whether a Code of Construction Practice (**CoCP**) would be included in the Outline Traffic Management Plan.
- 3.1.39 MC responded and explained that Highways England does not intend to produce a CoCP as Highways England would be producing a Construction Environmental Management Plan (**CEMP**) which covers the same ground. MC confirmed that details such as working hours and working practices are found in the CEMP.
- 3.1.40 The ExA asked why Highways England is now producing an OTMP. MC explained that Highways England is responsive to comments made by other parties, and the ExA, and whilst Highways England does not always produce a TMP for schemes it has decided to produce an OTMP in this instance.
- 3.1.41 SK responded to comments from interested parties and explained that the intention of the OTMP is to minimise additional traffic delay construction wherever possible. SK explained that the overnight closures of the eastbound off slip to junction 28 were necessary as fairly substantial works are required which would involve a “deep dig” to tie the realigned off-slip back into the junction. This requires a full closure of that exit slip and can’t be done another way. Highways England has adopted the approach to implement lane closures rather than full closures wherever possible. Further, where there are lane closures, the intention is to use narrow lanes, so that the number of lanes through the junction is maintained as far as possible. SK explained this would be possible for the majority of works and that Highways England is committed to minimising disruption. The OTMP will detail proposals designed to ensure minimal disruption during construction.
- 3.1.42 SK explained that during the detailed design stage there would be consultation with the necessary stakeholders in accordance with the Requirements of the DCO. SK stated that this would include the Metropolitan Police, the bus operators, and the local authorities. SK confirmed that the Traffic Management Plan would be discussed with those parties prior to its finalisation and their comments would be considered. SK noted that detail on bus diversions would be unlikely to be tied down in the OTMP, instead it would be something dealt with in the detailed stage recognising it was a detail that needed to be addressed.

3.1.43 MC added that Requirement 10 of the dDCO will need to be amended to make provision for the OTMP. This amended Requirement will provide for consultation with the relevant highway authority. The Secretary of State (**SoS**) would then approve the final version and would be made aware of responses to consultation. Highways England consider the SoS to be the appropriate consenting body and Highways England is not content to be required to agree them with any other bodies other than the SoS, and MC noted that this is the position for all other Highways England DCOs. MC confirmed there would be good and full consultation with the relevant highway authorities but emphasised that Highways England does not think it is appropriate to be subject to multiple approvals from highway authorities and also from the SoS.

3.1.44 SK assured Woodstock Avenue residents and the ExA that Highways England would, as they do at all their schemes, notify the public as far as possible in advance of the works and road closures, with the aim of allowing people to make appropriate alternative arrangements. SK further noted that the modelling undertaken took no account of any suppression of traffic demand during peak periods as a result of those mitigation measures. SK explained this ensured that the modelling of the construction traffic impacts presented in the Transport Assessment Supplementary Information Report represented a worst-case scenario. SK also noted that this modelling only reflects the short period of time when several of the temporary traffic management arrangements overlap. They do not overlap for the whole of the construction period and so there would be less congestion and delay at other times other than for this 'worse period' of a couple of months when a number of temporary traffic arrangements overlap.

Agenda item 2.5 - Matters concerning connectivity to non-vehicular traffic and community severance following the Applicant's response to WQ TA 1.11 and TA 1.12.

3.1.45 SK explained that the Scheme retains the current facilities around the junction and improves them in so much as improving the surfacing and a new widened footway. SK acknowledged that the approach is to retain the non-motorised user (**NMU**) provisions that exist, but to make them more compliant with current standards.

3.1.46 In terms of a wider approach, SK identified two instances of severance that had been raised in DCO representations:

- along the A12 west of J28; and
- at the junction itself.

3.1.47 SK explained that in relation to severance along the A12, Highways England's position is that the Scheme results in insufficient changes in traffic flow along the A12 to make a material difference to severance along the A12. Therefore, the issues of severance on the A12 west of J28 are historic and it is for TfL, as highway authority, to address this issue.

3.1.48 The location of junction 28 is not on any desire line with no significant trip attractors between the urban areas of Brentwood and Harold Park. This is especially true for walking trips because the conurbations of Brentwood and Harold Park either side

of the junction are at least 2.5 kms apart, which equates to a walk time of over 40 minutes.

- 3.1.49 SK explained that the severance issues extend over a wider area than the junction in itself where there are basic NMU facilities currently provided. There are basic facilities for pedestrians and no dedicated cycle facilities on either the A1023 Brook Street into Brentwood or the A12 between J28 and Harold Park. There is only a shared use path on the southern side of the A12 to the west of junction 28.
- 3.1.50 SK concluded that improving NMU facilities at junction 28 in isolation would not adequately address the current barriers to movement for NMUs that extend into the hinterland well beyond the junction. To do this, you need to look at the network further afield and wider barriers to movement beyond junction 28. Consequently, Highways England is seeking designating funding for a more comprehensive scheme, the NMU Proposal, which is separate to the junction 28 Scheme.
- 3.1.51 With regards to the National Policy Statement (**NPS**) and views raised that Highways England could be doing more to meet the obligations in the NPS, SK confirmed that Highways England remained of the view that improving facilities in isolation at junction 28 would not result in any significant change in NMU usage due to wider barriers to movement and would not offer value for money.
- 3.1.52 SK confirmed to the ExA that Highways England has undertaken an audit of NMU facilities (e.g. pedestrians, cyclists, and horse riders) at the existing junction. In this assessment, shortcomings of the junction were identified but it also looked at the wider area and identified issues beyond junction 28. This study led Highways England to the conclusion that the appropriate approach was to deal with this as a corridor approach, not as part of the Scheme. This separate NMU proposal is subject to a designated funding application process.
- 3.1.53 The ExA requested clarification as to what was meant by the "corridor". SK clarified that this was looking at the NMU connectivity between Harold Hill and Brentwood. The assessment looked at the adequacy of existing facilities and what needs to be done along this corridor to remove existing barriers for NMUs and improve the existing situation.
- 3.1.54 SK advised that Highways England's view was that the solution to the existing issues along the corridor between Brentwood and Harold Hill was the designated fund scheme, separate to the DCO Scheme. SK explained that this proposal involves upgrading pedestrian and cycle facilities between Harold Hill and Brentwood, including improvements at junction 28. It also includes a combination of on-road and off-road cycle facilities and provides for signal control crossings at junction 28. SK described in detail the proposed NMU facilities at junction 28 included in the separate scheme for the ExA, noting that there is nothing in the Scheme which would preclude the NMU proposal being introduced.
- 3.1.55 SK explained that this was an appropriate approach by Highways England, as the designated funding scheme is specifically aimed at providing these additional benefits alongside their regular requirements for the maintenance and upgrade of the SRN. Highways England considers that this is a more appropriate, and a more

efficient use of resources, than including isolated improvements at junction 28 in this DCO application.

- 3.1.56 The ExA asked for an update of the progress of the designated funding scheme and timeframe for implementing it. SK said that the NMU proposal had been designed in detail, so had been approved in principle and is ready for implementation, which demonstrates Highways England's commitment to the scheme, subject to approval of funding. It is now going forward for approval for funding and the intention is for the proposal to be implemented fairly soon after this, subject to approval. SK agreed to the ExA's request to provide timelines for the NMU proposal.

Action 4 – Applicant to clarify anticipated timeframe for approval of proposals to integrate safe cycle and walkway routes which are currently being pursued separately to the Proposed Development.

Response – See Highways England's response to action point 4 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Agenda item 2.6 - Suggested alterations to proposed access to and egress from Grove Farm prepared by representatives of the Jones Family submitted at Deadline 2 [REP2-033].

- 3.1.57 MC introduced Simon Harris (**SH**) to respond to the ExA's request for detail in relation to the suggested alterations to the proposed access to and egress from Grove Farm.
- 3.1.58 SH explained that no alterations to the carriageway are proposed adjacent to the existing ingress to Grove Farm and consequently, no modifications had been proposed. The existing ingress is sited close to the exit from the roundabout where vehicle speeds are slower. SH noted that there is an acceptable safety record with the current layout and there are no recorded accidents at this egress location
- 3.1.59 Relocating the ingress further north along the M25 on-slip road places it where highway vehicles are accelerating towards the merge with the M25. SH explained that Highways England's road safety and operational safety specialists had raised concerns that such a relocation would be unsafe as vehicles braking to enter Grove Farm may cause collisions with vehicles accelerating to the M25. They also raised concerns that vehicles may exit Grove Farm via the ingress and turn right onto the slip road resulting in head-on collisions.
- 3.1.60 SH then explained that the existing egress from Grove Farm would be affected by the realigned A12 eastbound off-slip road. Highways England's proposal is to reconnect the egress to the realigned slip road on a similar alignment and distance from the stop line at the roundabout. SH commented that this reflects the current situation as closely as possible.
- 3.1.61 SH explained that the existing egress is located close to the stop line where vehicles are slowing down and that there are no recorded accidents on this stretch of road.

- 3.1.62 SH explained that a new ingress from the A12 would introduce an additional movement. This would create further hazards for through traffic as vehicles brake for the diverge where slip road traffic is travelling faster being further way from the stop line. This level of provision for a private access could also be confused with the M25 on slip. SH noted again that the Highways England's road safety and operational safety specialists have raised concerns that such a provision would be unsafe.
- 3.1.63 SH acknowledged that TfL had stated this and confirmed that direct accesses on slip roads are not permitted in the design standards. They would be departures from standards. Operational safety would be a material consideration in the departure approval review
- 3.1.64 SH concluded that moving the revised access from the M25 slip position as proposed by Grove Farm is less safe because vehicles are increasing their speed to merge with the M25. The existing access is close to roundabout so vehicles would be moving slowly.
- 3.1.65 SH clarified, in response to the representative of Grove Farm, that there is often confusion around the concept of the design speed and the speed limit. The design speed in this case is 70km/h but the speed limit is 70mph. SH stated that the fact is that motorists are going to be looking to accelerate to motorway speeds in the area that Grove Farm has proposed the access to be relocated to which would create a safety concern.
- 3.1.66 MC agreed to discuss with the Highways England team whether larger scale plans showing the access points to Grove Farm could be provided to the ExA.

Action 5 – Applicant to provide drawings at a larger scale (minimum 1:1000) of the area around Grove Farm dwellings.

Response – Highways England has submitted these plans at Deadline 4 (TR010029/EXAM/9.61).

- 3.1.67 The ExA asked SH for clarification in relation to statement made that vehicles would be accelerating to the M25, asking if it was not the case that vehicles would have to reduce their speed anyway here, due to the presence of vehicles using the proposed maintenance access. SH explained that use of this access would be infrequent and would be used only by maintenance personnel in liveried vehicles with flashing lights who are trained in these manoeuvres. Furthermore, there would be a hard shoulder at this location which the vehicles would use before entering the access track.
- 3.1.68 The ExA queried how the access proposed by Grove Farm (on the A12 off slip) would be secured in the DCO if the ExA is minded to propose the access relocation to the SoS. MC replied that consideration would need to be given to the land implications for this change and as such whether a change request application would be needed. MC emphasised that Highways England is opposed to making this change, in any event, on safety grounds and would not be comfortable to promote an access arrangement it believed to be unsafe.

- 3.1.69 SH concluded that Highways England does not agree that the access is no less safe. SH noted that there is a big difference in the usage of the two proposed accesses.

4. Agenda item 3 - Historic Environment

Agenda item 3.1 - *The adequacy of the baseline data and assessment of Tyler's Hall Farm and the Grove.*

- 4.1.1 LBH and MC both confirmed to the ExA that further discussions had taken place with LBH. The LBH confirmed they were satisfied with the information provided in relation to both Tyler's Hall Farm and the Grove.
- 4.1.2 MC confirmed that this agreement would be reflected in the Statement of Common Ground between Highways England and the LBH which is to be submitted at Deadline 4.

Action 6 – Applicant to submit an updated SoCG between themselves and London Borough of Havering regarding baseline data etc.

Response – An updated SoCG (TR010029/EXAM/9.8(1)) between Highways England and London Borough of Havering has been submitted at Deadline 4.

Agenda item 3.2 - *The Applicant to summarise the contents of the outline Archaeological Management Plan, submitted by the Applicant and Deadline 3A [REP3A029].*

- 4.1.3 The ExA questioned how pre-commencement works would be secured and whether any works would take place before the Archaeological Management Plan (**OAMP**) was finalised. MC explained that 'archaeological investigations and mitigation works' has been replaced with 'archaeological surveys and evaluations' in the definition of "commence" in the dDCO (REP3A-004). These are intended to be small scale activities that are not likely to have any significant environmental effects and as such do not need to be subject to an approval process under the requirements in the DCO.
- 4.1.4 The ExA asked for more details of the OAMP and MC introduced Kae Neustadt (**KN**), heritage consultant for Highways England, to provide this detail. KN explained that the OAMP is an overarching Written Scheme of Investigation (**WSI**) for archaeological evaluations (trial trenching) and recording (excavation) which also outlines the responsibilities of the Principal Contractor, archaeological contractor, client, and noted the consulting parties which will need to be engaged to ensure the appropriate and proportionate treatment of the archaeological finds.
- 4.1.5 KN explained that the OAMP is designed to deal with both the pre-commencement and the post-commencement works in terms of:
- procedures for the treatment of unanticipated discoveries at all stages of the scheme, including the potential for nationally significant (schedulable-quality remains);

- sections that allow for an update to the archaeological baseline incorporating archaeological work that has been conducted since the Environmental Statement (**ES**) and therefore unavailable to be included in that baseline; and
- sections that provide for community engagement and public benefit that are unable to be fully assessed until some level of intrusive works (trenching and excavation) are conducted.

- 4.1.6 KN explained that the overarching WSI as part of the OAMP would be developed through consultation with the Greater London Archaeological Advisory Service (**GLAAS**), Historic England and, if necessary, the local Conservation Officer. The works would be controlled through the development and implementation of tasks specific written schemes of investigation, which are required in advance of any archaeological field work or development work including the pre-commencement works.
- 4.1.7 The ExA asked KN why geophysical surveys were not considered suitable for the Scheme. KN explained that successful geophysical surveys need a clear field to enable the survey to be undertaken reliably. For example, vegetation cover and any objects causing magnetic interference would have to be removed to enable the surveys to be undertaken. The area that needs to be assessed for this Scheme is quite heavily disrupted by various service lines which makes the potential for useful geophysical surveys to be relatively limited.
- 4.1.8 The ExA then asked KN to provide more detail to the proposed approach to trial trenching and construction integrated recording and the timing of the two phases. KN confirmed that trial trenching would be completed in a separate phase to the construction integrated recording. This is because the trial trenching would inform the need and location to carry out construction integrated recording. KN confirmed a separate task specific written scheme of investigation would be required for the construction integrated recording.
- 4.1.9 KN also explained that it is anticipated that the final Archaeological Management Plan (**AMP**) would specify the extent of trial trenching evaluations as a percentage of coverage which would be developed in consultation with GLAAS and the archaeological contractor. It would then also be subject to a separate specific task specific written scheme of investigation which would identify the locations and depth of those trenches, what they are designed to test or if they are random trenching patterns. This would be further developed by the archaeological consultant during the detailed design in advance of the commencement of the construction activities.
- 4.1.10 The ExA asked whether the AMP would be produced before or after the detailed design. KN explained that the AMP would be developed during detailed design. KN clarified that the areas for survey can be identified at relatively early stages in the detailed design because the archaeological investigations cover more than just the exact specific areas of ground disturbance. Trenching would be located across the Order limits in order to address the full potential. KN explained that whilst there are some areas that might have more potential than others to result in archaeological remains, the overall site as a whole would still need to be examined. As such, this work could be done at the same time as the design is

developing. In addition, while the detailed design is being developed, any archaeological evaluations being conducted could then help in informing the detailed design.

- 4.1.11 In response to submissions made by GLAAS, KN stated that the Saxon site discovered at Oak Farm Cemetery was taken into consideration and was included in the updated information relating to historic environment in the ES. KN confirmed that Highways England considered the likelihood of significant archaeological remains at the site to be relatively low based on previous investigations.
- 4.1.12 The ExA asked KN and MC if Highways England would be able and willing to carry out trial trenching during the period of examination. The ExA asked for an answer to be provided at the beginning of the reconvened ISH1 on Thursday 4 March 2021. MC acknowledged that he would need to raise this question with the relevant personnel at Highways England and noted that trial trenching would also involve gaining consent for land access.

Action 7 – Applicant to provide confirmation of a programme of trial trenching works and to update the Archaeological Management Plan accordingly or in due course.

Response – See Highways England's response to action point 7 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

5. AOB

- 5.1.1 MC asked the ExA for clarification relating to the request in its Procedural Decision dated 26 February 2021 [PD-012] for the submission of updated documents, including the draft Development Consent Order, Land plans, Works plans, related to Changes 1 and 4. MC explained that as two of the requested changes had been accepted and two were still being considered by the ExA, it might be more useful if Highways England submitted updated documents only once a decision was reached in relation to all four requested changes, particularly given that Changes 1 and 2 are co-dependent upon one another.
- 5.1.2 The ExA expressed they were minded to agree with this approach but would confirm at the beginning of the reconvened ISH1 on Thursday 4 March 2021.

The ISH1 was adjourned here and reconvened the following morning on Thursday 4 March 2021, 10:00am.

6. The ISH1 was reconvened and the following updates were provided.

- 6.1.1 The ExA confirmed that Highways England should submit updated documents, related to Changes 1-4 only once the ExA has issued its decision as to acceptance in relation to all four requested changes.

- 6.1.2 MC confirmed that Highways England would produce and submit “zoomed-in” copies of the Works plan to show Grove Farm and related access routes to the ExA at Deadline 4.
- 6.1.3 MC also confirmed that in relation to archaeology, Highways England agreed to endeavour to undertake some trial trenching during the examination. MC noted that Highways England would report further to the ExA following discussion between Highways England and the GLAAS at an upcoming meeting.
- 6.1.4 MC further confirmed that Highways England is proposing to secure the “inter green” phase on the roundabout with TfL in an agreement, as suggested by TfL. Highways England fully intends to implement this inter-green and hopes that this agreement will give some comfort to that intention.
- 6.1.5 MC lastly confirmed that in relation to the NMU proposal, should the application be successful, the timescales of those works, and the Scheme works would be aligned to minimise disruption. MC confirmed that an update regarding the approval process of the designated funding scheme would be provided at Deadline 4.

7. Agenda item 4 – Design and Landscaping

Agenda item 4.1 - The adequacy of the design of the scheme, focussing on the bridges, following the Applicant's response to WQ LV 1.6 to 1.9 [REP2-011]

- 7.1.1 SH provided the ExA with information detailing the design process of the Scheme. SH explained that the Scheme had been developed to achieve good design as required by the NPS for National Networks (**NN NPS**). Key considerations included visual appearance, functionality, fitness for purpose, sustainability and cost.
- 7.1.2 SH highlighted the approach taken to embrace the good design requirements and described examples of how this had been achieved. SH explained that visual appearance is a key consideration and much effort has been made to harmonise the Scheme into the local landscape. The road has been designed to follow existing ground level where possible to minimise intrusion. Earth mounding and landscape planting have been designed to screen the road from adjacent properties and provide visual interest from the landscape and for motorists. The adverse visual effects upon sensitive receptors such as Maylands Cottages would be mitigated by the planting of a proposed woodland block that runs along the western periphery of the loop road. Planting would enhance the existing landscape with existing woodland and shrubs retained as far as practicable within the Scheme providing connectivity to the Ingrebourne Valley Site of Metropolitan Importance. This planting has been designed for the benefit of wildlife and biodiversity, respecting the local landscape character particularly in areas of existing woodland blocks.
- 7.1.3 SH confirmed that two main watercourses pass through this landscape. A length of the Ingrebourne River would be diverted to follow a sinuous alignment with backwaters to slow the flow, encourage shoals and support fish spawning. Flood modelling has informed the provision of flood compensation areas and waterway

areas through structures with abutments set back to the edge of the flood plain, and soffits have been set above the 100-year flood level. This allows the river and floodplain to function in a predominantly natural manner in times of flood. The location of the flood compensation was selected to offset the impact as close as possible to the area affected. Along the Weald Brook, the flood area would act as a wetland and wet grass species have been specified to enhance the aquatic environment.

- 7.1.4 Sections of the Weald Brook which are believed to have been artificially straightened and which currently follow a straight alignment are proposed to be modified to a more sinuous course. Ecological ponds will be provided for great crested newts in mitigation for the works proposed.
- 7.1.5 The mitigation measures were developed in liaison with the local authorities, the Environment Agency and Natural England to ensure that they were considered appropriate and were supported. Consultation was also undertaken with the landowners and other interested parties and their feedback was taken into consideration. This included optimising the size of the balancing pond in Grove Farm to reduce its size and impact on the land holding.
- 7.1.6 SH confirmed that Highways England has liaised with the major utility companies whose plant is affected by the Scheme to understand the impacts and agree diversionary works. Options for diversions were identified and assessed in order to identify the most appropriate solution. SH explained that there are many constraints imposed by these companies and much work has been undertaken to agree provisions which can be accommodated within the Scheme constraints, objectives and timescales.
- 7.1.7 The structures were developed by identifying a number of options and then assessing each before identifying the preferred design solutions. The designs sought to reflect the construction of existing local structures to achieve harmony with the local surroundings. However, bridge end supports and retaining walls have been designed using reinforced earth rather than concrete to reduce the use of high carbon intense materials and allow re-vegetation and planting.
- 7.1.8 The assessments included design life requirements, aesthetics, construction works/methodologies, maintenance and cost.
- 7.1.9 For the bridges, the number of spans was optimised to reduce the elevation of the bridge and minimise deck thickness whilst achieving headroom requirements to achieve a balanced appearance. The spans were designed to accommodate the features crossed including watercourses, utilities plant and access routes.
- 7.1.10 Proposals for the structures have been shared with interested parties including the local authorities, utility companies, landowners and environmental bodies during the development of the preliminary design.
- 7.1.11 Provisions made include mammal ledges in the Grove culvert extensions and in the existing culverts, minimising hard banks in watercourses and ensuring continuity of bat foraging routes. Adjacent to the A12, a balance had to be achieved to accommodate the clearance to National Grid's overhead power lines, the

realignment of the confluence of the two watercourses, the realigned A12 eastbound off-slip road and the merge of the loop road. This constrained location requires the provision of two new bridges and a retained embankment to minimise the impact on Grove Wood and includes an ecological mitigation area.

- 7.1.12 The extension to Grove culvert was adopted following an initial option to realign the Ingrebourne River in an open channel. This work is located between Grove Farm and the realigned A12 eastbound off-slip road. Space constraints meant that the channel would be straight and hardened and unattractive for biodiversity. This was considered undesirable and an extended culvert solution was negotiated with the Environment Agency and given the net benefits, this was supported. Steepened earthworks will also be used to reduce construction impacts and disturbance on neighbouring Grove Farm.
- 7.1.13 SH concluded that the evolution of the design highlighted the considerations given to the environment, the options considered for design elements and the adjustments made to incorporate the feedback received to develop a 'good design'.
- 7.1.14 The ExA asked SH for further detail surrounding the design process and how it arrived at the aesthetic solution proposed with specific reference to the bridge designs.
- 7.1.15 SH explained that, from his engineering perspective, the choice of materials and the form of the structures had been selected to try to harmonise with the existing structures in that vicinity. SH confirmed that choices had been made to achieve a balance between purpose, buildability and cost effectiveness whilst being easy to maintain in the long term. SH confirmed that the finishes to the bridges would be important and would need to blend into the environment. SH confirmed that the Highways England landscaping team had given advice in terms of the visual aspects of the bridges.
- 7.1.16 When asked for further detail by the ExA as to the finishes of the bridges, SH explained that as well as being built for function and durability it is important that the bridges fit within the local environment. The finishes need to be self-maintaining and generally a concrete finish is used where access is difficult. The concrete is then treated as appropriate for the local environment. The specific finishes would be finalised as part of the detailed design process. SH explained that possible options included a concrete panel finish, if space is limited or, if there is space, an exposed vegetated face, which could be planted to blend into the environment.
- 7.1.17 The ExA referenced Highways England's 'The road to good design' guidance, and specifically an image of the green bridge over the A21 as an example of a high quality finish on a bridge. SH noted that the referenced bridge is an area of significant environmental sensitivity and therefore there was a particular need to deliver the finish shown. The location of the Scheme is distinct from this, not having those same environment sensitivities and having the space constraints already referenced. SH stated that he believed the proposal was an appropriate design solution in this location. The proposal had been developed through liaison with

Highways England specialists and has been developed in accordance with feedback from the local interested parties. SH confirmed that Highways England had taken into account the principles of good design in this proposal.

- 7.1.18 Neil Hutchins (**NH**), landscape consultant for Highways England, explained that the landscape design has two functions: to screen the new proposed road and to respond to the local landscape character which is partly defined by woodland blocks. NH explained that, although the Scheme is constrained by space, the proposed woodland areas have therefore been designed to reflect the ecological landscape character of the local area as well as screening the road. NH also explained that large areas of low nutrient grasslands are proposed in a response to a new aim for Highways England projects to maximise areas of species rich grassland.
- 7.1.19 In response to the ExA's request for clarification on Highways England's response to LV 1.9 relating to Alderwood Bridge, SH acknowledged that cost is a consideration and is considered in the assessment. SH explained that the original design proposed for Alderwood Bridge became complex as the design progressed and ultimately several factors, including that it would be hard to maintain, led to that design not being the preferred option. The design now proposed is for a structure commonly used across the country. EM then confirmed to the ExA that the development of the design was submitted to the Highways England design panel, and it was decided that this project did not warrant any further review. EM noted that, by this point, the proposal had gone through various design reviews with various technical specialists. EM explained that this is a rigorous process which is comparable to the independent design panel.
- 7.1.20 MC confirmed that the Highways England guidance titled 'The road to good design' would be submitted to the ExA at Deadline 4.

Action 8 – Applicant to submit its publication entitled 'The road to good design 2018' into the Examination and explain how its principles will be incorporated and the document is to be secured in the dDCO.

Response – See Highways England's response to action point 8 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Agenda item 4.2 - The Applicant's approach management and mitigation of trees and the adequacy of the Arboricultural Management Plan submitted with the outline Construction Environmental Management Plan submitted at Deadline 3A [REP3A-010].

- 7.1.21 Thomas Dale (**TD**), arboricultural consultant for Highways England, answered questions from the ExA on arboricultural matters. TD confirmed to the ExA that there are no ancient woodlands within the Order limits of the Scheme. TD agreed to clarify whether there were 17 or 18 parcels of ancient woodland within 2km of the Order Limits. TD also agreed to provide an explanation of the difference of mature woodlands and ancient woodlands and confirm whether there are mature woodlands within the Order limits.

Action 10 – Applicant to submit clarification on number of parcels of Ancient Woodlands that would be indirectly affected, 17 or 18?

Response – See Highways England's response to action point 10 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Action 11 – Applicant is to provide clarification on the terms 'mature woodland' and whether both Alder Wood and The Grove are classified as such.

Response - See Highways England's response to action point 11 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

- 7.1.22 The ExA asked TD if he could provide a figure showing the number of trees that would be removed for the implementation of the Scheme at this stage. TD explained that in line with the British Standards 5837 (2012) – Trees in Relation to Design, Demolition and Construction guidance (**British Standards 5837:2012**), the loss of trees is detailed in section 4.4 of the Arboricultural Impact Assessment (**AIA**) in terms of categories of trees and the total numbers of individually recorded specimens and areas of trees for removal in line with their different BS Categories. The ExA asked whether it would be possible to provide a figure of the exact number of individual trees to be removed. TD noted that he had not seen this approach taken in other DCO applications and that recording trees as groups is permitted under the BS5837:2012 guidance and the presentation of areas for removal seen as regular practice when large groups are to be removed as part of a scheme. To provide a figure of the number of trees to be removed will require further assessment and that this number would need to be finalised during detailed design. TD agreed to raise within Highways England whether an estimate could be provided for inclusion in the Outline Arboricultural Method Statement (**OAMS**).
- 7.1.23 The ExA asked for an explanation as to the relationship between the CEMP and the Landscape and Ecology Management and Monitoring Plan (**LEMP**) in relation to trees. EM explained that the LEMP is intended to secure the management of landscape and ecological mitigation whereas the CEMP covers how the construction will be undertaken. MC confirmed that the CEMP relates to matters, including trees under the Arboricultural Method Statement (**AMS**), during the construction phase, and that the LEMP deals with the operational phase of the Scheme. The ExA asked for clarification as to what would happen if there was conflict between the two documents. MC explained that the SoS needs to approve the final version of the CEMP and LEMP, and any overlap could be dealt with at this stage. MC noted that Highways England did not foresee any conflict as the two documents dealt with two different phases of the Scheme.
- 7.1.24 The ExA requested further details of the indirect impact upon the ancient woodlands and where any protective measures would be documented. TD confirmed that he would provide clarification on this in a written response.

Action 12 – Applicant to insert into the outline Arboricultural Method Statement how Ancient Woodlands are to be managed during construction.

Response – See Highways England's response to action point 12 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

- 7.1.25 The ExA asked for further detail in relation to the Tree Protection Order (**TPO**) trees that would need to be removed. TD confirmed, with reference to the Tree Protection Plans at Appendix C of the Arboricultural Impact Assessment [[APP-063](#)] that TPOs which are affected by the Scheme are cited as groups, woodlands or areas. Where possible, individual trees within the woodland groups have been recorded. However, to record every individual tree would make the plans illegible. The commitment to ensure the protection of TPO trees in accordance with British Standards 5387 and other best practice guidance is included in the Register of Environmental Actions and Commitments (**REAC**) ([REP3A-011](#)).
- 7.1.26 TD explained an area of TPO woodland groups has been identified as needing to be removed and that as part of detailed design and under Requirement 4 for the draft DCO, following consultation with the local authorities, those areas for removal would be confirmed.
- 7.1.27 The ExA said it was comforted by this explanation but asked whether Highways England could provide a figure for total trees lost in the final AMS. TD noted that this level of detail had not been provided in other large infrastructure projects, but he would raise this with the wider team and submit a clarification as to whether this would be possible.
- 7.1.28 MC emphasised that the Scheme is still at the preliminary design stage and that Highways England required some flexibility as regards trees until detailed design, adding that matters are controlled ultimately by the SoS who would only approval the final versions of the CEMP and the LEMP if satisfied everything is in order as regards trees and the other matters covered by those documents. This position is not uncommon in DCO schemes.

Action 13 – Applicant to respond to the ExA's request to provide the SoS with information on the maximum number of trees that would need to be removed in the outline Arboricultural Method Statement, with final numbers identified at the detailed design stage.

Response – See Highways England's response to action point 13 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

- 7.1.29 In response to points raised by the LBH and the ExA, EM explained that key personnel would be identified at the detailed design stage. The CEMP would include a section of key responsibilities and this would be updated with details of the key personnel, their qualifications, their experience and their responsibilities. This is common practice for Principal Contractors. These names would be available in the final CEMP. EM also confirmed that Highways England would involve these specialists in detailed design.

- 7.1.30 The LBH asked where the veteranisation of younger trees is references in the OAMS. EM explained that this is located in the REAC and would form part of the final AMS. EM agreed Highways England would update the OAMS to include this information.
- 7.1.31 [Post-hearing note] – Highways England will update the OAMS to include details of the veteranisation of young trees. The updated OAMS will be submitted at Deadline 5.
- 7.1.32 The ExA asked for clarification of the protection measures for veteran trees. TD explained that there are eight veteran trees that were identified within the temporary construction working areas and all will be retained during construction. These trees will have tree protection fencing to define construction exclusion zones around the trees as included within the updated Tree Protection Plans of the OAMS. The specification of this tree fencing is in the OAMS at page 9, figure 3.1. TD confirmed that the construction exclusion zones are sufficient to protect the trees.
- 7.1.33 The ExA asked whether information relating to trees could be consolidated so that the tree related measures set out in the OCEMP, OLEMP, REAC and AIA could all be included in the OAMS. TD agreed that this approach would be considered by Highways England.
- 7.1.34 [Post-hearing note] – The updated OAMS will be submitted at Deadline 5. The information from various documents, particularly the OCEMP, OLEMP, REAC and AIA, will be referred to in the revised OAMS.
- 7.1.35 The ExA then referred to the loss of two veteran trees. TD confirmed that this was unavoidable, details of which are set out within Appendix C to the Case for the Scheme ([APP-095](#)), and that these would be replaced by eight trees for each of the trees lost. TD explained that this number and the species was agreed between Highways England and Natural England ([REP1-011](#)). TD also noted that the LBH had confirmed that they agreed that this loss was unavoidable and agreed with the compensation proposed ([REP3B-006](#)).
- 7.1.36 The ExA asked for confirmation as to where the 16 replacement trees would be located. TD said that it was his understanding that they would be within the Order limits. The ExA asked for a commitment from Highways England that these replacement trees were planted within the Order limits.

Action 14 – Confirmation in the outline Arboricultural Method Statement that replacement trees which are mitigating the loss of Veteran Trees that are to be removed will be placed/planted within the Order limits.

Response – See Highways England's response to action point 14 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

- 7.1.37 The ExA asked whether the final AMS would be produced before or after the detailed design stage of the Scheme. TD confirmed that this would be produced during it, as they need to inform each other. TD also noted that the final AMS would

be consulted on during the detailed design stage. The ExA asked for confirmation that the final AMS would not include any references to any matters being subject to the detailed design stage. TD and MC confirmed that this would be the case.

7.1.38 The ExA then asked MC whether a separate requirement relating to trees and securing the AMS independent of the CEMP under Requirement 4, could be included in the dDCO. MC acknowledged that there was merit in including a separate requirement and Highways England would consider this approach.

7.1.39 Action No 8 – Applicant to insert new Requirement for Arboricultural Method Statement, separating it from the CEMP (discussed at ISH1 Day 2).

Response – Highways England has updated the draft DCO to include a standalone requirement related to trees. This is at Requirement 11 of the updated draft DCO submitted at Deadline 4 (TR010029/APP/3.1(3)).

7.1.40 In response to a question from the ExA, MC confirmed that replanting mitigation is controlled by the LEMP and that the final LEMP would be approved by the SoS, in consultation with the relevant planning authority, under requirement 5 of the DCO. MC also noted that requirement 5(3)(a) stipulates that the landscape scheme must detail the location, number, species mix, size and planting density of any proposed planting.

7.1.41 The ExA asked whether trees would be replaced on a one-to-one basis. TD confirmed that Highways England operated in hectares, so figures for loss and replacement are given in hectares.

7.1.42 [Post-hearing note] – The purpose of the LEMP is to set the aims and objectives for creation and long-term (post construction) management and monitoring of landscape, ecology and water environment features within land permanently acquired for the Scheme. This long-term management of is a key component of the mitigation/compensation required to reduce the effects of the environmental effects of the Scheme, and the LEMP demonstrates a commitment to this. The comparison between tree loss and tree planting on a one to one ratio will be covered in the updated OAMS submitted at Deadline 5.

8. Agenda item 5 – People and Communities

Agenda item 5.1 - *The effects of the Proposed Development on the living conditions of the occupiers of Grove Farm.*

8.1.1 The ExA asked for clarification from NH of the landscape and visual impacts on Grove Farm. NH confirmed that there is expected to be a very large adverse effect on Grove Farm as a result of both the construction works and the final built Scheme in relation to landscape impacts.

8.1.2 At the ExA's request, SH agreed to submit an updated engineering section DD to include the Grove Farm itself.

- 8.1.3 Adam Lawrence (**AL**), consultant for Highways England, agreed with the submissions made on behalf of Grove Farm that without any mitigation, the noise levels from construction activities would be significant. However, AL explained that this is why Highways England proposed the temporary noise barrier in the CEMP in order to reduce the impacts from construction noise. AL clarified that the numbers quoted by the Grove Farm representative were the measurements without mitigation (64 up to 79 dB and 61 up to 76dB). The implementation of the temporary noise barriers reduced noise levels by 10dB.
- 8.1.4 AL explained that as the construction activities move location as the construction programme progresses the noise will come from different directions at different times. The construction noise assessment looks at the noise levels at different times and looks at how the noise levels change over time. The temporary noise barrier therefore might be needed for one activity at one time, and then a different activity at a different time in a different place.
- 8.1.5 AL explained that Noise Important Areas (**NIA**) were defined by DEFRA as a result of their strategic noise mapping. Grove Farm was included in Highways England's assessment, as were other residential properties, but Highways England does not determine if Grove Farm is in a NIA.
- 8.1.6 The ExA asked AL to explain the differences between temporary and permanent noise barriers. AL explained that noise barriers work by interrupting the line of sight and forcing noise to travel over the top of the barrier, which is a longer distance, and so the level of the noise reduces. As such noise barriers must be of a significant mass to ensure that noise cannot travel through them easily. AL explained that for a temporary noise barrier an appropriate material would be marine ply, or some other reasonably thick timber sheet. AL also explained that a temporary noise barrier would be used during construction and would therefore be located inside the works area. AL described that a temporary noise barrier could be up to approximately 25mm deep and would only need to last the duration of the construction period, which would be 2 to 3 years. They can also be painted, and re-painted if needed, during the construction period.
- 8.1.7 AL then explained that a permanent noise barrier would need to last for 30 to 40 years. This barrier would need to stand up to weather conditions and would need to be maintained. A permanent barrier would also need larger foundations. As the permanent noise barrier would be placed on the side of the road, it would need to have all of the necessary traffic restraint systems and would also need to be assessed in terms of visual impact. AL clarified that the form would be different to that of a temporary noise barrier and its position and height would need to be determined principally by the road traffic noise that it's trying to reduce rather than the construction noise.
- 8.1.8 The ExA asked for a summary as to why Highways England considers there would not be a significant effect on Grove Farm in relation to operational noise. AL explained that the simplest thing to do is to look at the situation just before the Scheme opens and compare this to the situation just after the Scheme opens. Highways England have predicted the noise level in both situations. It is reported in the ES that the change in noise at Grove Farm is predicted to be a decrease of

just less than 1dB. This is the worst case scenario for Grove Farm. The DMRB provides categories for noise changes and it states that noise changes between nought and 1dB are negligible.

- 8.1.9 The ExA asked how this conclusion was drawn even though the proposed road was nearer to Grove Farm than the current road. AL explained that at Grove Farm there is noise from the M25 main carriageway, the A12 main carriageway, the Brook Street roundabout itself and the slip roads. AL confirmed that each of these factors were included in the noise model. AL explained that Highways England would introduce low noise surfacing on the new and altered roads which reduces the noise level on those sections of road despite the road being closer.
- 8.1.10 The ExA suggested that individual noises which would occur in closer proximity to Grove Farm were not accounted for in Highways England's assessment, for example brakes noise or car horns. AL explained that Highways England used an average over an 18 hour period and annual average of traffic from the weekday period. This is the same approach on every highway scheme, and this allows impacts to be compared between schemes on an equivalent basis. AL acknowledged that peak noise from traffic would be higher than this average and that there would also be periods where noise is lower than the average. AL stated that the low noise surfacing would not reduce the 'peak noises' such as braking noise. AL also raised that improvements realised from the Scheme are intended to aid the flow of traffic which should have the added benefit of fewer people needing to use their horns as traffic flows through the roundabout more easily.
- 8.1.11 In response to a question from Matthew Rolf, a police officer for the Metropolitan Police service, AL stated that the low noise surfacing often lasts for 10 to 12 years on a motorway.
- 8.1.12 The ExA asked AL whether he considered a permanent noise barrier necessary at Grove Farm. AL stated that the decision on mitigation is taken in terms of the overall annual average noise level. The traffic modelling shows that there is no increase in noise level, therefore it does not meet the criteria for erecting a permanent noise barrier.
- 8.1.13 In response to points raised by the LBH, AL confirmed that the standard approach for temporary noise barriers would be to have no gaps to the ground and that vehicle sizes would be considered.
- 8.1.14 The ExA noted that an updated cross-section E-E including Grove Farm would be helpful and MC agreed that this would be provided at Deadline 4.

Action 15 – The Applicant to submit a revised version of the Engineering Drawings [APP-011] to include Grove Farm; specifically, sections D-D and an extended version of section E-E. Both should show the location of the main dwelling on the Grove Farm site in section.

Response – Highways England has provided these drawings within a document submitted at Deadline 4 (TR010029/EXAM/9.65).

- 8.1.15 The ExA asked for details of any objections to moving the access from Grove Farm 10 to 15m to the west. SH explained that the overarching concern would be increased safety risks arising from the access being moved further away from the junction. SH said he would need to look at the design and seek views from road safety audit specialists to confirm whether there were any concerns with this proposal. SH explained it would depend on the distance the access would be moved. The ExA asked Grove Farm to prepare drawings illustrating the proposal for Highways England to consider.
- 8.1.16 In response to points raised by Jane Allan, AL noted that in the ES update submitted at deadline 3A additional receptors, including for Woodstock Avenue, have been added in the tables in the appendices (REP3A-009)].
- 8.1.17 The ExA asked if a requirement, detailing that a noise barrier should be provided before construction, would be appropriate. MC responded that as a matter of law, this would be possible. MC stated that a broader requirement as regards the scheme in the vicinity of Grove Farm could be problematic as changing the design could have knock-on effects to the rest of the Scheme. MC emphasised that Highways England did not consider a permanent noise barrier to be necessary.

Action 16 – Comment on a requirement being placed in the dDCO for a site-specific plan for Grove Farm.

Response – See Highways England's response to action point 16 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Agenda item 5.2 - *The effects of the Proposed Development on the operations of Maylands Golf Course.*

- 8.1.18 MC explained that whilst Highways England considered its proposal for the golf course accommodation works to be acceptable and proportionate in terms of the playability of the course, ecological matters and cost both in terms of the works themselves and compensation liabilities to Highways England, Highways England understands that the golf course operator was not content with the proposal. Highways England considers the ideal outcome to be to accommodate the wishes of the course operator, if possible. MC explained that this meant that those proposals would need to be acceptable both in terms of ecology, and cost and any other effects on the Scheme.
- 8.1.19 MC explained that until recently there had been considerable uncertainty as to the costs involved in the golf course's proposal. There have been further discussions and a good exchange of information between the parties, including as regards costs. Highways England is hopeful that it will be possible to implement a scheme of accommodation works for the golf course that is what the golf course operator wants to see.
- 8.1.20 MC acknowledged that this may mean another change request related to the golf course accommodation works would need to be submitted to the ExA. MC confirmed that there should still be time to accommodate a further change request within the examination period providing The Infrastructure Planning (Compulsory

Acquisition) Regulations 2010 are not fully engaged which is likely to be the case on the basis that the golf course owner and operator would give their consent to the change should it be required. MC noted that a targeted consultation exercise related to the change would need to be carried out and that Highways England would endeavour to submit a request for the change by mid to late April.

- 8.1.21 The ExA confirmed that they were happy for discussions to continue and asked if an intention to make a change request could be provided at Deadline 4. MC agreed that this notice of an intention of a change request would be provided.

Action 18 – Applicant to submit intention of submitting a change request as in line with Advice Note 16.

Response – Highways England submitted a notification of intention to make a request for changes to the Scheme on 10 March 2021 [AS-037]. See Highways England's response to action point 18 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4 for further detail.

Agenda item 5.3 - Any other concerns

- 8.1.22 AL addressed concerns raised by residents of Woodstock Avenue in relation to the noise impacts of the Scheme. AL confirmed that there would be no significant effects at Woodstock Avenue from operation or from construction noise. AL explained that this would be predominantly due to the distance between Woodstock Avenue and the Scheme.
- 8.1.23 AL described the houses at the southern end of Woodstock Avenue as very close to the A12 and explained that the noise Woodstock Avenue residents experience is driven predominantly by traffic on the A12. AL confirmed the Scheme would have no effect on these properties. The properties at the northern end of Woodstock Avenue are further from the A12. AL said that these properties do get a contribution of noise from the M25, the junction and would include some noise from the Scheme. The change to noise levels for properties at the northern end of Woodstock Avenue, as a result of the Scheme, is too small to make a perceptible change.
- 8.1.24 NH added that Maylands Cottages was used as visual receptor for the residents of Woodstock Avenue as the locations are on the same side of the loop road. NH confirmed that this receptor provides a cautious estimate as the receptor is approximately 160m closer to the proposed loop road than the nearest residence on Woodstock Avenue.
- 8.1.25 NH also explained that the photomontages from viewpoint D provides a good representation of the anticipated view from Maylands Cottages. As mentioned, Woodstock Avenue residents are located on the same side of the proposed loop road, so these images are indicative of their view too. The environmental bund which is proposed to be at the southwest of the loop road would act as a screening. Although the precise planting schedule of these trees would be confirmed in detailed design, the density of the screening would be similar to that in the photomontages.

9. Agenda item 6 – Matters for Clarification

Agenda item 6.1 - *Whether IPs are generally content with the outline Construction and Environmental Management Plan submitted at Deadline 3A [REP3A-010] and the inclusion of the outline Dust, Noise and Nuisance Management Plan and the outline Surface Water Management Plan, and London Borough of Havering to expand on its comments on those other Environmental Plans as listed in the draft Development Consent Order [REP3A-004].*

- 9.1.1 In response to submissions by interested parties, MC emphasised that Highways England's position is that it is not appropriate for the Construction Environmental Management Plan (**CEMP**) to be agreed with the LBH before it is submitted to the SoS for approval as this would in effect mean that the CEMP would have to be approved by both the LBH and the SoS. Highways England's position is that the SoS is the appropriate body to give the final approval. The relevant local authorities would be consulted, and their views made known to the SoS. MC explained that if there were concerns held by the local authorities then the SoS would consider these concerns in determining the approval.
- 9.1.2 MC stressed that although Highways England does not consider it appropriate for the local authorities to have the power to veto matters, Highways England does want to work collaboratively with local authorities and would hope to have most points agreed before submitting the CEMP to the SoS.
- 9.1.3 EM explained that the CEMP would need to be prepared in line with the ISO 14001 requirements. EM responded to comments questioning the wording, at paragraph 13 of the OCEMP, which states it may be reviewed as often as is necessary. EM explained that this is not unusual wording for an environmental management plan. This paragraph ensures that the CEMP is fit for purpose during the construction stage. This means that if there are going to be changes, which may need to be put in front of the SoS for approval, then the CEMP has to reflect those approved changes.
- 9.1.4 EM further explained that at this stage, Highways England has outlined some of the consents required to deliver the Scheme, but the principal contractor might require further consents to deliver the works. Consequently, it is not possible to provide a comprehensive list of consents and permits until the construction methodologies and the detailed design is fully defined. EM confirmed that Table 12.1 of the OCEMP would need to be fully populated in the detailed design construction stage and all permits would need to be obtained.
- 9.1.5 EM confirmed to the ExA that Highways England would work collaboratively, as it has been doing, throughout the detailed design stage and their input would be fully considered in the creation of the final environment management plans. EM stated that Highways England has shared draft plans with the LBH throughout this process and would continue to do this.
- 9.1.6 In response to a point raised by TfL, MC confirmed that as part of requirement 17 of the dDCO a summary report setting out the consultation undertaken would be provided to the SoS. However, MC agreed to consider how to provide further

assurance that consultees' views would be presented to the SoS and would discuss this at the ISH2 scheduled for 5 March 2021.

Agenda item 6.2 - *Applicant to update ExA on matters around ground conditions/waste/land contamination and discussions with EA and to set out when it will submit a Materials Management Plan as recommended by the Ground Investigation Report submitted by the Applicant at Deadline 1 [REP1-023, REP1-024 and REP1-025]*

9.1.7 MC invited Liz Gray (**LG**), consultant for Highways England, to respond to the ExA's question of when the Materials Management Plan (**MMP**) would be submitted. LG explained that the MMP is a document that covers the movement of materials across site as part of the earthworks for the Scheme. The MMP would not be available until detailed design is completed, because Highways England would have to understand the quantities of materials being moved, and the locations that they're being moved to, including any interim stockpiling.

9.1.8 LG confirmed that the MMP would be developed through detailed design. LG explained that Highways England is in consultation with the Environment Agency in relation to numerous matters, including the management of materials on site. There is currently discussion ongoing in relation to how the MMP should be developed and the Environment Agency would not expect to see a MMP produced until Highways England have detailed design information. MC confirmed to the ExA that the MMP would be secured as it is one of the documents listed in requirement 4(2) of the dDCO.

Agenda item 6.3 - *In response to WQ1 GQ 1.9, whether a more detailed explanation of Works Nos 11-32 would be more helpful.*

9.1.9 MC agreed to the ExA's request to provide more detailed descriptions of Works Nos. 11-32. MC also agreed, on Brentwood Borough council's request, to provide more detailed descriptions of Work Nos. 1, 3, 5 and 7.

Action 19 – *Applicant to provide more detailed explanation from Works Nos 1,3,5,7, and Works Nos 11 onward.*

Response – see Highways England's response to action point 19 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4.

Agenda item 6.4 - *In response to WQ1 GQ 1.13, the Applicant to clarify the Proposed Development's contribution to the emissions target set within the Government's fourth Carbon Budget.*

9.1.10 Freya Crunden (**FC**), consultant for Highways England, clarified the Scheme's impact on the fourth carbon budget to the ExA. FC confirmed that construction of the Scheme is expected to commence in spring 2022 and the opening year planned for autumn 2024 which is in the fourth carbon budget period (2023-2027). Construction of the scheme will therefore fall partly within the third carbon budget period and partly within the fourth carbon budget period. Operation will fall within

the fourth carbon budget period onwards. Highways England has undertaken an updated assessment based on this.

- 9.1.11 FC outlined the results of this updated assessment and explained that the Scheme's contribution to the fourth carbon budget is expected to be 0.001%. This is the contribution derived from both construction and operational emissions. This re-assessment reduces the contribution of the Scheme to the third carbon budget to 0.0005%. This does not alter the conclusion of the assessment, which is that the Scheme will not materially impact the UK's ability to meet its carbon budgets and will therefore not generate a significant effect on climate. FC noted that as construction would begin in 2022, if consent is granted, one third of construction emissions would fall in the third carbon budget and two thirds would fall into the fourth carbon budget.
- 9.1.12 In response to a question from the ExA, FC clarified that the Scheme's operational emissions are assessed on the affected road network and that all the projects funded by the Road Investment Strategy contribute to less than 0.1% of the fourth carbon budget period.

Action 9 – Applicant to submit the revised calculations regarding the Proposed Development's emissions contributions to both the third and fourth Carbon Budgets.

Response – See Highways England's response to action point 9 in its response to actions points from Issue Specific Hearing 1 (TR010029/EXAM/9.60) submitted at Deadline 4. The revised calculation is provided in the Carbon budget assessment document submitted at Deadline 4 (TR010029/EXAM/9.63)

Agenda item 6.5 - Applicant to summarise mitigation measures within the Proposed Development in response to concerns raised by IPs over flooding around the Brook Street junction.

- 9.1.13 SH stated that he was aware of comments raised in relevant representations on existing surface water flooding issues on the Brook Street roundabout.
- 9.1.14 SH confirmed that this roundabout is the responsibility of Highways England and the issue has been raised with the company who maintain the roundabout and associated drainage on Highways England's behalf, Connect Plus Services (CPS). SH explained CPS had tried to clear the drains to solve the flooding problem however, they have found that the flooding is not due to a blockage in the drains but due to damage to the drains themselves. CPS has informed Highways England that a scheme of remedial works is programmed to be implemented by summer 2022.
- 9.1.15 SH confirmed that these issues do not have a direct impact on the Scheme. However, Highways England is proposing to resurface the roundabout as part of the Scheme as revised road markings would be needed. Consequently, it is important that remedial works are undertaken before the carriageways resurfacing. SH confirmed that this had been made clear to CPS.

10. Agenda item 7 – AOB

- 10.1.1 MC invited SH to respond to concerns raised by residents of Woodstock Avenue in relation to the protection of the deer population. SH confirmed that Highways England is fully aware of the deer that live in and around the area. Highways England engaged the Forestry Commission to undertake a survey and to give advice on how best to look after the deer population. Highways England are mindful of removing impacts between travelling vehicles and the deer on the carriageways.
- 10.1.2 The Forestry Commission report has informed Highways England of the numbers of deer and the bigger movements of the deer at that location. SH confirmed that Highways England is aware of the deer population using the Grove culvert to cross the M25. The report has informed Highways England on what measures to include in the scheme design and the construction phase.
- 10.1.3 SH summarised that the main recommendation of the Forestry Commission report is to ensure that existing deer fencing is not removed and to install further fencing to ensure deer do not harm themselves near deep excavations. SH noted that Highways England would take steps to protect the welfare of the deer within the Order Limits and that mitigation measures would be considered throughout the detailed design of the Scheme.
- 10.1.4 MC agreed to the ExA's request for information as to how these protective measures for deer would be secured at Deadline 4.

Action 20 – Applicant to confirm how deer's protections are secured in DCO.

Response – Highways England has amended Requirement 13 in the updated version of the draft DCO (TR010029/APP/3.1(3)) submitted at Deadline 4 to secure the provision of deer fencing.

11. Agenda item 8 – Action Points arising from Hearing

- 11.1.1 The ExA confirmed the actions points for Highways England arising at ISH1. The action points and where Highways England's responses to these can be found has been submitted at Deadline 4 (TR010029/EXAM/9.55).

12. Agenda item 9 – close

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