



SECTION 153 OF THE PLANNING ACT 2008
PARAGRAPH 2 OF REGULATION 6 OF THE INFRASTRUCTURE
PLANNING (CHANGES TO, AND REVOCATION OF,
DEVELOPMENT CONSENT ORDERS)
REGULATIONS 2011 (AS AMENDED)

APPLICATION TO MAKE A NON-MATERIAL CHANGE
TO THE FOLLOWING DEVELOPMENT CONSENT ORDER:
M4 (Junctions 3 to 12) (Smart Motorway) Development Consent
Order 2016 SI 863

1. Application Statement

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M1

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1. Introduction

- 1.1. This non-material change application (“the Application”) seeks to facilitate a number of changes to the consented M4 Junctions 3 to 12 Smart Motorway Scheme (“the Scheme”) which have arisen during the detailed design and construction phase of the Scheme. In summary, these changes include:
- a) National Highways no longer proposes to instigate Through Junction Running (“TJR”) at Junctions 5 (Work No. 24), 6 (Work No. 16), 8/9 (Work No. 6) and 11 (Work No. 4) of the M4, as was originally proposed in the DCO (the change being “No-TJR”);
 - b) the widening of Sipson Road subway (Work No. 28) will now take place at the northern end of the subway, rather than at the southern end as previously proposed;
 - c) the following proposed structures constructed as part of the Scheme will fall slightly outside of the current limits of deviation (“LoDs”) authorised by the DCO (and in the case of Huntercombe Spur and Wood Lane bridges, are also caught by the category of changes in paragraph (d):
 - Huntercombe Spur Overbridge (Work No. 12e);
 - Oldway Lane Overbridge (Work No. 13c); and
 - Wood Lane Overbridge (Work No. 14c).
 - d) there are structures to be constructed as part of the Scheme where the 'principles set out in the Engineering and Design Report' would not allow for the detailed design proposed for those structures to be discharged pursuant to Requirement 6, these are as follows:
 - Monkey Island Lane Overbridge (Work No. 8c);
 - Lake End Road Overbridge (Work No. 11c);
 - Windsor Bridge Railway Underbridge (Work No. 17a);
 - Recreation Ground Overbridge (Work No. 20c); and
 - the culverts referred to in Work Nos. 18 and 21 and works to a culvert not originally referred to in the EDR known as 'Railway Culvert' (Work 17b); and
 - e) there are instances of acoustic barriers that were set out on the environmental masterplan that it has been established are now not required or can be reduced. This would cause an inconsistency with the provisions of Requirement 22 of the made DCO.
- 1.2. This non-material change application seeks to make amendments to the made DCO, and the documents referred to it, to allow these changes to be brought forward as part of the Scheme.

2. Background to the Scheme

- 2.1. The M4 motorway is a strategic part of both the English and Welsh road network, connecting London to South Wales. The Scheme is located on 32 miles of the M4 Motorway, between junction 3 and junction 12. It comprises of 28 miles of three-lane motorway and four miles of four-lane motorway between junction 4 and 4b. The Scheme area includes the M4 to M25 interchange; the junction for Heathrow Airport and passes by several key regional centres including Slough, Windsor, Maidenhead, Wokingham and Reading.
- 2.2. Improvement of the M4 to a smart motorway will help to relieve congestion by permanently converting the hard shoulder to a running lane and using technology to vary speed limits and manage traffic. Signs and signals will be used to inform drivers of conditions on the highway network, when and where variable speed limits are in place, and when lanes are closed.
- 2.3. The Scheme involves the following primary elements, subject to the changes sought by the Application:
 - (a) conversion of the hard shoulder to a permanent running lane and, where no hard shoulder is in place at present, the construction of a new lane (this will mainly take place between Junctions 4b and 8/9)
 - (b) replacement of overbridge structures that are too narrow to accommodate the improved motorway
 - (c) extension of underbridges and other structures such as culverts and subways to accommodate the improved motorway
 - (d) changes to junctions and slip roads needed to accommodate the improved motorway, and use of the hard shoulder as a running lane, as well as, subject to the changes allowing "through junction running"
 - (e) provision of new gantries and signs to allow the motorway to function as a smart motorway with a variable speed limit, and to provide messages to road users; and
 - (f) other infrastructure needed for the improved motorway, such as enhanced Emergency Areas ("EAs"), communication systems, closed circuit television and electrical supplies, as well as works to accommodate statutory undertakers and other parties who may be affected by the proposed scheme.
- 2.4. The Scheme is a nationally significant infrastructure project ("NSIP") to which the Planning Act 2008 ("PA 2008") applies. As such, National Highways submitted an application for a Development Consent Order ("DCO") for the Scheme to the Secretary of State on 30 March 2015 and that was granted on 2 September 2016.

3. Background to the Application

3.1. As the Scheme has progressed through the detailed design and construction phase, it has become clear that, as awareness of the detailed constraints of the Scheme have come to light, and lessons from other Smart Motorways scheme had been learned, changes to what has been consented through the DCO are necessary.

No-TJR Running Changes

3.2. A key first consideration was the Scheme proposals to bring forward TJR across the length of the Scheme, which had been proposed pursuant to Interim Advice Note ('IAN') 161/13, in light of the fact that that IAN had been superseded by IAN 161/15.

3.3. Interim Advice Note 161/15 advises Smart Motorway Schemes to implement the most appropriate junction layout (i.e. not just assuming that TJR is the appropriate layout) based on operational and safety factors for each junction (whereas the default position within 161/13 was for TJR for the entire scheme).

3.4. As a result of updated guidance in IAN 161/15, a review into the most appropriate layout for each junction across the Scheme has been undertaken. The review has considered operational and physical constraints, extensive traffic modelling/forecasting and safety assessments, along with feedback from operational SM-ALR (All Lane Running) schemes.

3.5. An operational assessment of each junction was therefore carried out. The aim of the assessment was to determine the suitability of either a TJR or No-TJR layout for each junction at the scheme design year (2037). The peak hour forecast traffic flows for 2037 have been used to determine the most appropriate operational solution for each junction (in terms of optimising the junction layout). In addition, traffic data has been plotted on charts to visualise forecast traffic growth and flows relative to the capacity of each link.

3.6. The review using the original traffic model (verified in 2018 using observed traffic volumes, as explained in **Appendix D**), considered operational, environmental and safety factors and determined that junctions 5, 6, 8/9 and 11 would operate more effectively as No-TJR. Therefore, a revised operating option (Table 1) emerged which was adopted by the Scheme. This meets the criteria set out in the scheme objectives to reduce congestion and provide capacity to meet traffic flows in the design year, 2037.

| | Junction/Access | | | | | | | | | | |
|--------|-----------------|-----|----|----|-----|---|---|---|----|---|---|
| Option | 12 | MSA | 11 | 10 | 8/9 | 7 | 6 | 5 | 4b | 4 | 3 |
| 4 | N | Y | N | N | N | Y | N | N | N | Y | N |

Table 1: Latest TJR Option Proposal

3.7. These operational assessments are explained in section 5 - Operational Review below and in **Appendices E to H** to this Statement.

Other Changes

3.8. **LoDs Changes:** The detailed design process has led to the final design for three bridges (Huntercombe Spur, Oldway Lane and Wood Lane) requiring a height that is outside of the LoDs provided for by the DCO. This is because the number of

spans and the form of the structures have changed (thus also necessitating changes to the EDR principles) and therefore the vertical alignment of these structures has changed. This is explained further in section 6 – Other Changes below and in **Appendices J to L** to this Statement.

- 3.9. **Sipson Road Subway Change:** Site constraints (in particular in relation to utility apparatus) has meant that the proposed location of the widening of the Sipson Road Subway has been proposed in the north side rather than the south side of the M4. This is explained further in **Appendix I** to this Statement.
- 3.10. **EDR Principles Changes:** Detailed design and construction constraints have also meant that the final design of a number of structures within the Scheme does not accord with the principles set out in the engineering and design report (“the EDR”) referred to in the DCO (e.g. number of spans) and therefore fall outside of the scope of Requirement 6 of the DCO. These changes are explained further in section 6 - Other Changes below.
- 3.11. **Acoustic Barriers Changes:** Finally, post consent, National Highways has continued to develop its understanding of the baseline across the Scheme. As part of this, National Highways has been able to more accurately understand the nature of existing acoustic barriers adjacent to the motorway, which has as a consequence meant that two proposed acoustic barriers within the local highways authority of Wokingham have been able to be amended. This is explained further in section 6 – Other Changes below and in **Appendix M** to this Statement.

4. Changes Requested

- 4.1. The proposed changes are brought forward as part of the Application in the context of the drafting of the DCO.
- 4.2. In particular, in relation to the No-TJR, Sipson Road Subway Change and EDR Principles Changes:
 - Requirement 6 requires the authorised development to be constructed in accordance with the plans listed in Schedule 12;
 - This is the case unless changes are approved by the Secretary of State following consultation with the relevant planning authority, but provided that the altered development accords with the principles of the engineering and design report submitted with the DCO application.
- 4.3. The No-TJR, Sipson Road Subway Change and EDR Principles Changes all involve changes to plans listed in Schedule 12, as they will involve consequential changes to gantries, earthworks, drainage, emergency areas and CCTV provision which need to be shown on these plans.
- 4.4. Similarly, changes need to be made to the Works Plans listed in Schedule 10, as some of these changes involve the deletion of Works, or development outside of current lateral LoDs.
- 4.5. Importantly though, these changes are also not consistent with the principles set out in the application EDR, necessitating changes to that EDR to ‘reset’ the principles against which the on-going construction of the Scheme will take place.
- 4.6. Furthermore, these consequential changes also involve changes to the authorised development, as the number and location of a number of assets will also change. An update to Schedule 1 of the made DCO is therefore required.
- 4.7. For the LoDs Changes, the limits of deviation set out in article 6 of the DCO relate to the engineering drawings and sections listed in Schedule 12 to the DCO. As the detailed design for the structures subject to this category of change goes beyond the limits of deviations set out in that article, new drawings are necessary to ‘reset’ the ‘levels’ against which the limits of deviations are drawn for the purposes of that article.
- 4.8. For the Acoustic Barriers Changes, Requirement 22 of the DCO requires barriers to be placed in the locations shown on the Environmental Masterplan referred to and described in Schedule 12 to the DCO. As it is now proposed to amend those locations, updates to that Masterplan are required to ensure compliance with that Requirement is able to be achieved.
- 4.9. As a result all of the above, the Application seeks changes to:
 - the EDR;
 - Schedule 1 of the DCO;
 - Schedule 10 of the DCO;
 - Schedule 12 of the DCO; and
 - the plans referred to by Schedules 10 and 12.
- 4.10. National Highways have therefore submitted with this Application:
 - clean and tracked changed version of an updated EDR;
 - a DCO Amendment Order which incorporates changes to Schedules 1, 10

and 12 (and provides for other related minor amends); and

- updated plan sets consistent with the updated Schedules 10 and 12, being updates to:
 - the Works Plans (Volume 2, Section 2.3)
 - Engineering Sections (Volume 2, Section 2.5)
 - Side Roads Plans & Profile (Volume 2, Section 2.6)
 - Earthworks Standard Details (Volume 2, Section 2.7)
 - EDR Appendices: Environmental Masterplan Drawings (Annex A1), Vegetation Clearance Drawings (Annex A2), General Arrangement Drawings (Annex F1); Underbridges General Arrangement (Annex F2) and Overbridges General Arrangement (Annex F3).
 - Drainage Strategy Report Appendix H Combined Drainage Drawings; and
- a new plan set known as Earthworks Layout Drawings (Volume 2, Section 2.9).

4.11. **Appendix C** summarises the proposed non-material changes and sets out the section of the updated EDR and the plan sheet numbers which show details of the changes.

5. No-TJR: Further Information

Introduction

- 5.1. As discussed in section 3, the Scheme was originally designed to the standards set by IAN161/13. At that time TJR was considered the preferred operating regime at all junctions in Smart Motorway schemes, except at motorway-motorway interchanges and terminal junctions. The updated IAN161/15 published in November 2015 and recent feedback from operational Smart Motorway All Lane Running (SM-ALR) schemes has instead recommended that the most appropriate junction layout for the junction being considered, is implemented, taking into account the operational and physical constraints for each junction, rather than requiring TJR to be put in place for the entire scheme.
- 5.2. Therefore, an operational assessment of the entire Scheme has been carried out. The aim of this assessment has been to determine the suitability of either a TJR or no-TJR layout for the junctions at the scheme design year (2037). This review analysed the physical constraints for each junction, as well as operational, environmental and safety factors and potential construction time and cost savings.
- 5.3. These factors have been used to recommend a preferred operating regime of either TJR or no-TJR for those junctions where TJR had been proposed under IAN161/13 and the DCO. The conclusions of this work for the Scheme as a whole are set out in this Statement. The Technical Notes at **Appendices E to H** set out the assessments in more detail for Junctions 5, 6, 8/9 and 11, as these are the junctions that are sought to be changed pursuant to the Application.

DCO Proposals

- 5.4. The previous operating regimen which was provided for by the DCO application is shown in Figure 1 and Table 2 below:

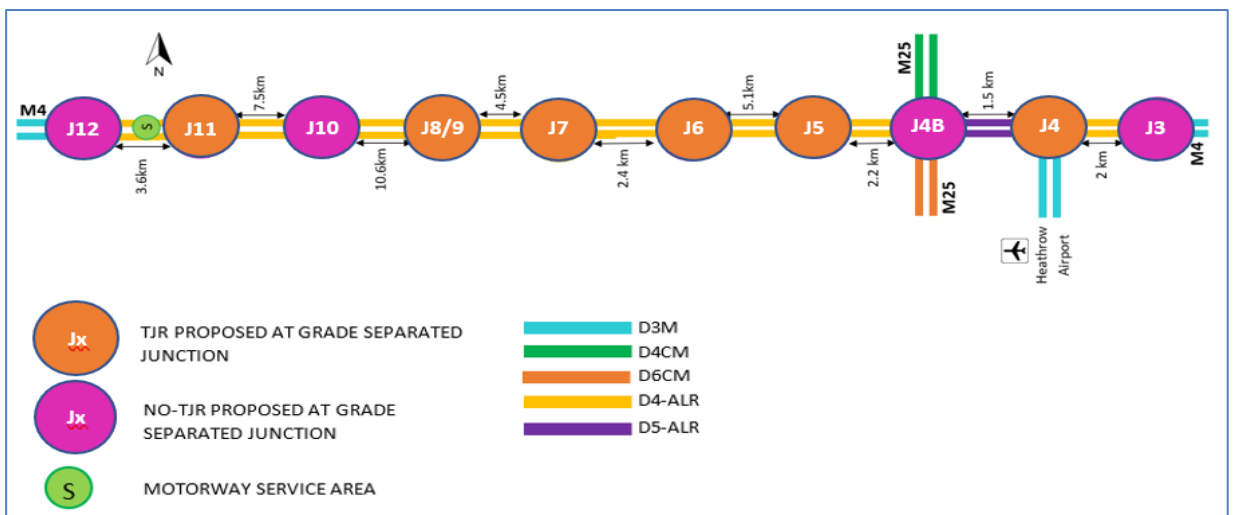


Figure 1 – Previous Operating Regimen

| Junction | TJR/ No TJR | Supporting Evidence |
|----------|-------------|-----------------------------------|
| 3 | No TJR | Terminal junction. |
| 4 | TJR | |
| 4B | No TJR | Motorway to Motorway Interchange. |
| 5 | TJR | |
| 6 | TJR | |
| 7 | TJR | |
| 8/9 | TJR | |
| 10 | No TJR | Motorway to motorway interchange. |
| 11 | TJR | |
| 12 | No TJR | Terminal junction. |

Table 2: Summary TJR or No-TJR per Junction

Operational Review

5.5. An operational review was undertaken for Junctions 4, 5, 6, 7, 8/9 and 11 taking into account the following data sources and factors:

- Peak hour intra junction flows from the scheme traffic model for the opening year (2022);
- Peak hour intra junction flows from the scheme traffic model for the design year (2037);
- Comparison of traffic model base year flows (2013) with observed flows data from WebTRIS loop data from 2013 or 2014;
- Comparison of intra junction flows per lane with adjacent links in the design year
- Existing operational & congestion issues on the main carriageway, slip roads, roundabouts and adjacent local road network: and
- Suitability of TJR layouts for forecast merge and diverge traffic flows

5.6. The traffic data sources used, alongside the information considered in **Appendix D** for the operational review, are summarised in Table 3 below.

| Data | Source | Data Range | Purpose |
|------------------------|--|------------------------------------|--|
| Traffic flow data | WebTRIS (MIDAS Loops) | September 2013 & October 2017 | Informs analysis of existing traffic flows |
| | M4 J3-12 Traffic Model | 2013, 2022 and 2037 | Informs analysis of forecast traffic flows |
| Motorgraph Plots (MTV) | TRL (Transport Research Laboratory) | November 2016 | Informs analysis of traffic speeds and congestion seed points |
| CCTV monitoring | National Highways Traffic Camera Systems | Varied times throughout March 2019 | Identification of cause of congestion and extent of lane specific queues |
| Congestion | Google Maps | Typical weekday March 2019 | Informs analysis of slip road and local road network congestion |

Table 3: Traffic Data Sources

- 5.7. For the assessment, both opening year (2022) and design year (2037) traffic flows were considered to understand when a link may exceed the maximum capacity. As described in **Appendix D**, the existing traffic model forecasts were verified against the 2018 observed traffic data and the model shows a relatively good match across all the links along the proposed scheme. It is therefore considered that the existing model is suitable for continued use to assess the likely impacts of the No-TJR layout.
- 5.8. The review also took account of the fact that design guidance (TD 22/06) states that where Variable Mandatory Speed Limit is implemented, the capacity per lane in peak hour can be 2000 VPH per lane before flow breakdown.
- 5.9. The outcome of the operating review showed that, at junction 5, traffic through the junction is forecast to be less than 6000 Vehicles Per Hour ("VPH") in 2037, with no-TJR. Therefore, the current arrangement of no-TJR at junction 5 will provide sufficient capacity beyond the design year of the scheme.
- 5.10. At junction 6 traffic through the junction is forecast to be less than 6000 vph in 2037 without TJR. Therefore, the current arrangement of no-TJR will provide sufficient capacity beyond the design year of the Scheme.
- 5.11. At junction 8/9 traffic through the junction is forecast to be less than 6000 vph in 2037 without TJR. Therefore, the current arrangement of no-TJR will provide sufficient capacity beyond the design year of the Scheme. Forecast flows for the merge and diverge in the design year less than 2000 vph per lane, and therefore a lane drop/lane gain layout with D3M intra-junction, as is currently the case, will be beneficial, at this junction.
- 5.12. At junction 11 traffic through the junction is forecast to be less than 6000 VPH in 2037 without TJR. Therefore, the current arrangement of no-TJR will provide sufficient capacity beyond the design year of the Scheme. There is regular congestion in the AM peak originating at the westbound diverge resulting in queueing traffic in lane one of the mainline upstream. Recognising the constraints and capacity of the local road network, the most appropriate layout is a lane drop layout at the diverge with D3M intra-junction as it will improve segregation of traffic leaving at junction 11 or continuing on the motorway.
- 5.13. As in the original DCO application No-TJR will be retained at Junctions 3 and 12 as they are terminal junctions. Equally No-TJR will also be retained at junctions 4b and 10 as they are motorway-to-motorway interchanges. TJR will be retained at junction 4b and 7 as the operational assessment demonstrated it is the best operating regime.

No-TJR Junction Design

- 5.14. At each of junctions 5, 6, 8/9 and 11, three lanes and a hard shoulder in each direction will remain through the intra-junction area with a lane-gain/lane-drop arrangement, i.e. a Dual 3 Lane Motorway (D3M). The retention of a hard shoulder through the junction will provide a place of relative safety. The Technical Notes at **Appendices E to H** describe the lane drop arrangements at each of these junctions.
- 5.15. New Vehicle Restraint System (VRS) will be provided on the slip roads and the mainline VRS design has been updated to reflect the No-TJR scenario of a hard shoulder within the intra-junction.

Consequential Changes

5.16. There are a number of consequential changes which arise from the move to No-TJR, which are reflected in the updated plans and DCO Schedules submitted with the Application. This includes:

- **Gantries:** Gantry locations are primarily set by the datum point of the merge/diverge lanes at the junction, which have moved as a result of no longer implementing TJR at each of the affected junctions. As a result, some of the gantries associated with the affected junctions require moving, in some locations outside of the limits of deviation for gantries on the Works Plans, thus requiring changes to those plans.
- **CCTV:** Some CCTV poles need to be moved. CCTV provision has also been rationalised and included on gantries where possible.
- **Structures:** Changes to structures such as overbridges, which were needed as a result of TJR, are no longer needed and can be removed from the DCO.
- **Earthworks, Drainage and Vegetation:** As a consequence of all of the above, there are changes to the earthworks, drainage and vegetation clearance requirements for the Scheme to account for the new or modified position of infrastructure.
- **Emergency Areas (“EAs”, previously known as Emergency Refuge Areas):** As a result of hard shoulder provision now remaining in a No-TJR scenario at the affected junctions; a place of relative safety has been added to the Scheme at junctions 8/9 and 11. For the purposes of Schedule 1 to the DCO, these are labelled as EAs.

5.17. By way of example, Figure 2 shows a schematic of the previously proposed location/order of gantries on both approaches to junction 6, whereas Figure 3 shows the new proposed layout of junction 6 (with no-TJR).

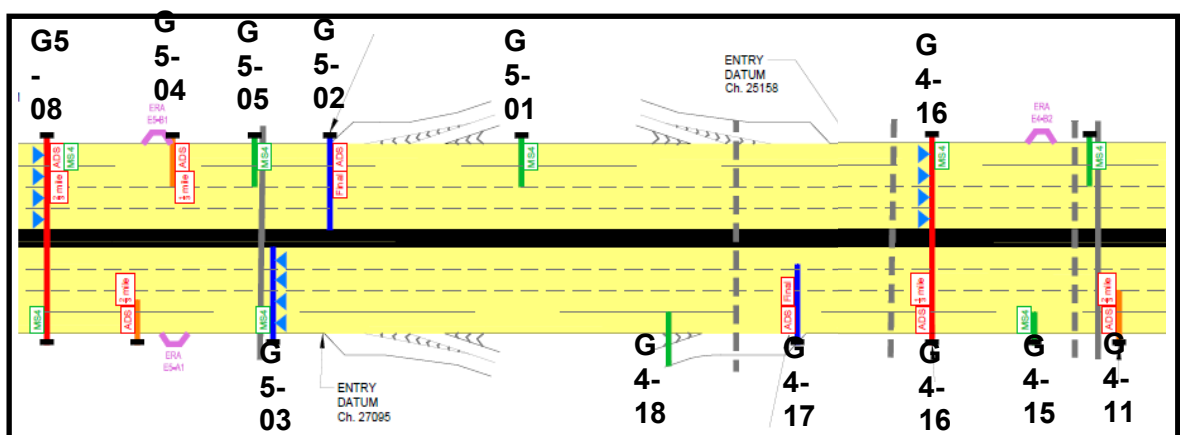


Figure 2: Schematic showing layout of junction 6 with TJR in 2015

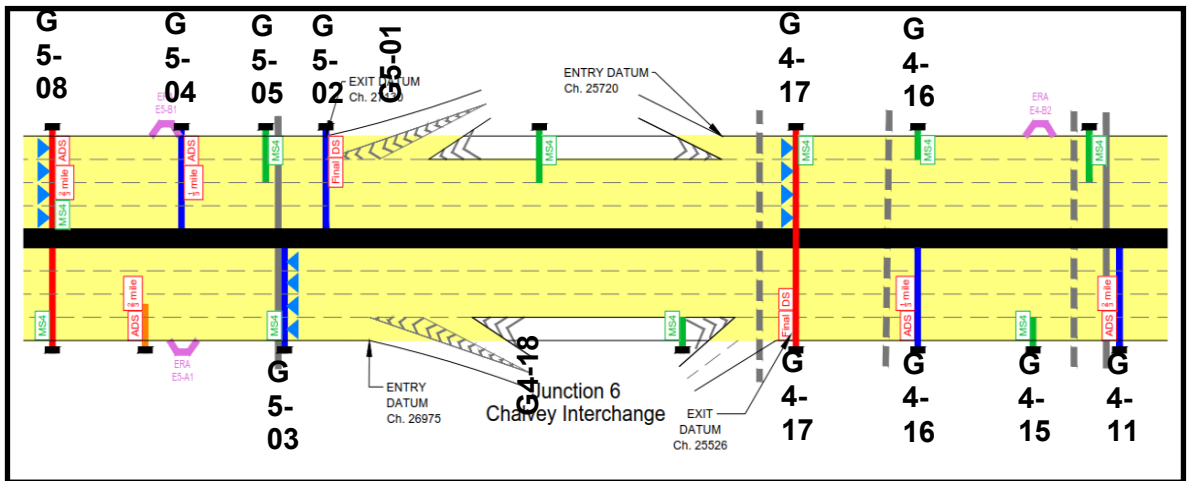


Figure 3: Schematic showing layout with junction 6 without TJR

- 5.18. Further detail on the changes arising from the No-TJR layout for junctions 5, 6, 8/9 and 11, and an assessment of the effects of those changes compared to those reported in the Environmental Statement (“the ES”) (as defined in the DCO) are explained in the technical notes in **Appendices E to H**.

6. Other Changes: Further Information

Sipson Road Subway Change

- 6.1. The existing Sipson Road Subway takes the form of a 3m spanning concrete box and provides pedestrian access under the M4 junction 4 slip roads. The subway is located west of Junction 4 and was constructed in 1965.
- 6.2. The 2015 DCO design was an asymmetric widening to the south side of the M4 by 5m to accommodate the Scheme 4-lane layout and J4 merge slip road, and this was set out as a principle in the EDR.
- 6.3. An assessment of this design carried out at detailed design stage found that the proposed rigid stitch with the extension structure would overstress the existing box structure of the subway. The long joint between the existing structures would have been required to run longitudinally along the carriageway with significant maintenance concerns and potential differential settlement between the new and existing structures, as well as being a departure from DMRB design standards.
- 6.4. Alternative options on the south side were limited due to the existing condition of the existing concrete box structure and the extensive gas, water, electricity, and telecommunications utilities in the vicinity. To prevent the differential settlement, strengthening to the underpass wall, top and bottom slab would have been required. Space constraints and the presence of utilities prevent strengthening from being applied to the outside of the structure, and internally there is insufficient headroom and width to strengthen without impacting upon pedestrians and cyclists. Therefore, an alternative solution was required that would allow realignment of the mainline, but not reduce headroom, nor require closure of the subway for the duration of the works.
- 6.5. An alternative solution has been developed, which removes the requirement to extend the subway on the southern side and this solution requires the introduction of a retaining beam of 1.2m width (supported on piles caps and piles) to the northern side (eastbound) of the M4 that spans over the subway. The precast beam will span over the existing subway and existing utilities. The beam will retain the fill above the subway, with the parapet and environmental barrier located on the beam itself. Despite this option being closer to residents, there are significant benefits with utilities not being diverted, minimising disruption to the users of the subway and drivers due to a significant shorter construction programme.
- 6.6. This change, and an assessment of the effects of those changes compared to those reported in the ES, are set out in a technical note in **Appendix I** and in the updated EDR chapter 5 submitted with the Application.

LoDs Changes

Huntercombe Spur Overbridge

- 6.7. The 2015 DCO solution for Huntercombe Spur overbridge was a semi-offline construction to allow the junction to remain open during construction. The new bridge was to be built as two separate structures with the realignment of the bridge to the east and the level of the finished carriageway being approximately 1.2m higher than the existing bridge. The new bridges would have been three-span bridges.

- 6.8. In order to improve the construction programme, an alternative proposal was explored. The proposed design is for a single wider online structure. The new bridge structure will be a steel composite single span structure. To facilitate the movement of traffic during construction, a temporary offline bridge will be built to the east of the main structure.
- 6.9. The alignment of the proposed design has changed to tie-in to the existing highway sooner (approx. 70m earlier south of the structure and 130m earlier north of the structure), reducing the scope of pavement works. As a result of this, the vertical alignment of the Spur has been lowered outside the limits of deviation in the DCO, with the need to tie-in to the existing pavement.
- 6.10. An additional benefit by switching to a wider bridge design is that the alignment over the M4 has moved west by up to 17m and as a result of this the Spur approaching the M4 overbridge is no longer constrained by the eastbound merge slip. The 100m long retaining wall on the north-east corner has been replaced by steepened earthworks.
- 6.11. This change (and consequential changes to drainage, earthworks, landscape and vegetation clearance), and an assessment of the effects of the change compared to those reported in the ES, is set out in in a technical note in **Appendix J**.

Oldway Lane Overbridge

- 6.12. This structure carries an accommodation access track over the M4 with occasional motorised vehicle use. The track is a bridleway connecting to another track parallel to the westbound carriageway. The existing overbridge will be replaced by a footbridge rather than a vehicular bridge. The existing bridge will be demolished, and a new structure built in its place.
- 6.13. The overall vertical profile for the side road has been lowered by up to 0.5m, such that the proposed bridleway is now approximately 0.8m higher than the existing structure. This change has facilitated the removal of significant lengths of retaining walls on both approaches to the overbridge.
- 6.14. The combined effect of the lowered side road profile and the reduction in truss depth means that the top of the bridge top chord is a total of 1.51m lower than the levels shown in the engineering sections and drawings for the 2015 DCO design. (and beyond the limits of deviation in the DCO), Also, due to the change in form and span of the proposed structure, to facilitate road transportation of the truss in two segments with a series of simple bolted connections at the midspan. The track or bridleway width will be approximately 0.5m narrower than the existing bridge.
- 6.15. Other minor design changes have also taken place. This includes the removal of retaining solutions on both approaches to the overbridge, with earthworks now tying into the existing top of the embankment.
- 6.16. This change (and consequential changes to drainage, earthworks, landscape and vegetation clearance), and an assessment of the effects of the change compared to those reported in the ES, is set out in in a technical note in **Appendix K**.

Wood Lane Overbridge

- 6.17. Wood Lane is an unclassified local road and provides the sole vehicular access to several residential properties and a sewage treatment works. The 2015 DCO solution was an offline, single span bridge to be built to the east of the existing bridge, moving the road away from the residential properties. In the detailed design phase, it was discovered that this would necessitate a diversion of the Thames

Water main which could cause a 6-month delay to the construction programme; so a solution needed to be developed.

- 6.18. The engineering solution to be taken forward is an offline constructed two-span steel composite structure, providing a back-span to the bridge on the north side of the M4. This back-span prevents impacting the water main and also two 750mm diameter foul pumping mains, mitigating a 6-month delay to construction. The bridge now has a length of approximately 83.5 metres across three spans. The footpath/cycleway to the northwest has been realigned to suit the extended overbridge.
- 6.19. The vertical profile has been amended to suit this change of structural form and a reduced design speed of 50kph has been taken forward, to the extent that the height is now outside the limits of deviation in the DCO.
- 6.20. As a result of these changes, the earthworks on the approach to the south of Wood Lane bridge are lower, and the retaining wall to the northeast has been replaced by with a conventional earthworks solution.
- 6.21. This change (and consequential changes to drainage, earthworks, landscape and vegetation clearance), and an assessment of the effects of the change compared to those reported in the ES, is set out in in a technical note in **Appendix L**.

EDR Principles Changes

Monkey Island Lane Overbridge

- 6.22. The proposed 2015 DCO structure has changed from a single-span to a three-span bridge and therefore the original extension of 2 No. flood channel culverts under Monkey Island Lane are no longer required. This Option will span over the culverts and gas main and will have significant benefits including cost savings and time as it eliminates diversion of the gas main and potential strengthening and or widening of the existing culverts.

Lake End Road Overbridge

- 6.23. Alternative and optimised options were explored in order to avoid diversion of the gas main and prevent having a cantilevered wingwall on the north-east corner of the structure. The 2015 DCO design was subsequently changed to convert the structure to asymmetric two-span instead of a single span, which allows for the gas main to remain in its current location. The two-span option also eliminates the need for a cantilevered wingwall and simplifies the construction of the bridge. The original option provided significant costs and complications to the construction.

Windsor Branch Railway Underbridge

- 6.24. Asymmetric widening is no longer required due to the removal of TJR at J6; however, the existing central reserve is to be reconstructed. This is achieved by joining the two existing bridge decks together.

Recreation Ground Overbridge

- 6.25. The updated design moves the footway from the east verge to the west verge on the structure whilst keeping the carriageway in the same location, which results in

the structure moving north by 1.4m, perpendicular to the current previously discharged design. The width of the footway remains as before, it has simply moved from one side of the road to the other. The width of the carriageway also remains as present. The verge width on the west side has been increased to 2m and that of the east side has been reduced to 0.6m to match the moving of the footway. As a result, a proposed uncontrolled pedestrian crossing point on the side road has moved from the south side to the north side. The vehicle passing place on the northern side of the bridge has been moved further north to allow for the new crossing location.

Culverts

- 6.26. The proposal for three culverts has changed to improve the highway realignment including Water and Gas Main Culvert which is being asymmetrically widened to west and east side of 1.35m and 2.0m respectively instead of the north/south side of the M4. Similarly, the Water Main Culvert is being asymmetrically widened of 2m to the west and 3.8m to the east instead of north/south side of the M4. Finally, the Railway Culvert is being asymmetrically widened by 7.6m at the north end.

Acoustic Barriers Changes

- 6.27. National Highways has been seeking to discharge Requirement 22 of the DCO to account for detailed design development and an increased understanding of the environment baseline, including the performance of existing barriers. On the basis of this work, a revised noise model has demonstrated that some acoustic barriers could be removed or reduced in length, without introducing any significant increases in noise levels to residential properties. As this would involve a change to what is shown to the Environmental Masterplan listed in schedule 12 to the DCO, a change to those plans is required.
- 6.28. Two proposed environmental barriers within the boundaries of Wokingham Borough Council (WoBC) have been identified to change, as explained in Table 4 below. Further details are set out in **Appendix M**.

| Location | Assessment | Changes Proposed |
|---|--|--|
| EM08, Eastbound (approx. chainage 50580 – 52720) EDR - Environmental Master Plan, Annex A1, Sheet 11 | At this location, the noise model has been revised to examine the effects of reducing the length of EM8 (reduction at the western end) Reductions in length of 100m and 150m and 200m were modelled. | The results indicate that the proposed EM08 barrier could be reduced in length by 150m (approx.. chainage 52570 to 52720) at the western end without introducing any significant increases in noise levels to residential properties in this location – negligible noise level increase (<1.0dB). This will not change the conclusions presented in the Environmental Statement. |
| EM06, Eastbound (approx. chainage | An 2m reflective noise barrier was previously proposed between chainages 53630 – 53880. However, there is an | The results indicate that the proposed 2m barrier (EM6) would not provide any significant noise reductions |

| | | |
|--|--|---|
| <p>53650 – 53902) EDR - Environmental Master Plan, Annex A1, Sheets 12 to 15</p> | <p>existing 3m reflective barrier located behind the location of the proposed barrier. The existing barrier was not included in the original noise model. Subsequently, this location has been remodelled and noise level contours at ground floor height and at first floor height were calculated comparing the with-scheme scenario to the without-scheme scenario.</p> <p>Furthermore, there is an existing barrier in the eastbound verge of the M4 east of J11 (aprox. CH. 53902 – CH. 54130) which was defined in the DCO submission as a 1.8-metre-high solid noise barrier (existing to remain). Subsequent further survey work has shown that this barrier is a 1.5-metre-high open wooden slat fence which is not expected to provide any acoustic attenuation. This revision to the existing barrier details will only result in a negligible increase to the Do-Minimum noise level to sensitive receptors to the north – the results of the assessment presented in the Environmental Statement will not change.</p> | <p>and it can be removed from the new noise barrier provision for the scheme (CH. 53650 – CH. 53902) – negligible noise level increase (<1.0dB), apart from 2 receptors where the increases are 1.1 dB and 1.3 dB; which are at the bottom end of the Minor impact range. However, these 2 receptors would still experience negligible noise reductions at first floor level when comparing the with-scheme scenario to the without-scheme scenario. This will not change the conclusions presented in the Environmental Statement</p> |
|--|--|---|

Table 4: Acoustic Barriers Changes Proposed

7. Non-Materiality of Change

Introduction to Tests

- 7.1. National Highways has considered the DCLG Guidance and case law on changes to DCOs and assessed the proposed changes in accordance with the criteria set out therein in terms of land acquisition, environmental effects, habitat and special species, and impact on businesses and residents.
- 7.2. Based on the assessment, National Highways considers the proposed changes to be non-material due to the following:
- No additional third-party land is required in order to construct the amended Scheme and no additional compulsory acquisition of land is necessary.
 - The environmental effects associated with the proposed changes have been considered and there are no new or materially different likely significant effects on the environment which arise from the changed scheme and that therefore a new ES is not required.
 - There is no need for a new Habitats Regulations Assessment or any new EPS licence.
 - The proposed amendment will not have a material impact on businesses and residents. The proposed change would be as safe as the original scheme and will maintain journey reliability for road users; with no material changes in traffic impacts caused by the changes.
 - The Wheatcroft principle¹ is not invoked as the Scheme will not be a different scheme from that presented in the original application – it remains a Smart Motorway scheme; these changes relate only to the fine details of how such a scheme will be achieved.
- 7.3. The proposed amendments have been tested against the above criteria as set out in the following text and as summarised in **Appendix C**.

Test 1: Land Acquisition

- 7.4. The proposed changes have no material impact on the scheme's engineering, design or physical layout and requires no additional land to be compulsorily acquired, or any extension to the Order limits.

Test 2: Environmental Impacts

- 7.5. To be considered a non-material change the environmental impacts of the proposed change must be assessed and it must be determined that it would not give rise to any new, or materially different, likely significant environmental effects such that a new ES would be required. National Highways has therefore undertaken an exercise to consider whether this would be the case for each proposed change.
- 7.6. Furthermore, and in the same fashion, National Highways has also been cognisant of the provision of paragraph 13 of Schedule 2 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“the 2017 Regulations”),

¹ Bernard Wheatcroft v Secretary of State for the Environment (1982) 43 P. & C.R. 233, and taking account of the Court's judgement in R. (on the application of Holborn Studios Ltd) v Hackney LBC [2017] EWHC 2823 (Admin).

which provides that a change or extension to a Schedule 1 development which has already been authorised will be Schedule 2 development (thus requiring a separate ES) only if "the change or extension may have significant adverse effects on the environment". In considering whether that is likely, the changes are not to be assessed in isolation. They should be considered by looking at the overall effect of the proposed change on the project, and identifying whether the whole, as modified, has or is likely to have other significant effects which need to be taken into account (i.e. significant effects which were not identified in the original assessment).

Methodology

General

- 7.7. The proposed changes have been reviewed in the context of each environmental topic previously assessed in the ES in order to identify if the change would lead to any likely significant effects that would be new or materially different to those reported previously.
- 7.8. The ES submitted in support of the DCO application assessed the following:
- a) Air Quality;
 - b) Cultural Heritage;
 - c) Landscape;
 - d) Ecology and Nature Conservation;
 - e) Geology and Soils;
 - f) Materials and Waste;
 - g) Noise and Vibration;
 - h) Effects on All Travellers;
 - i) Community and Private Assets;
 - j) Road Drainage and the Water Environment; and
 - k) Combined and Cumulative Effects.
- 7.9. Following a review of the No-TJR Changes, Sipson Road Subway Change and the LoDs Changes, it was determined that this Application needs to consider the potential environmental impact on air quality, noise and vibration, biodiversity, landscape and visual, and water. These are discussed in depth detail in the technical notes in **Appendices E to L**, for those changes.
- 7.10. It is considered that because there is no increase to construction procedures or any works are outside order limits, there would be no environmental impact as a result of the 2021 NMC Design changes on Cultural Heritage, Geology and Soils, Materials and Waste, Effects on All Travellers, or Community and Private Assets. Therefore, in relation to these topics, it is concluded that there are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessments and conclusions presented in the Environmental Statement remain valid.
- 7.11. In relation to the EDR Principles Changes on the structures and culverts as set out below:
- the number of spans have changed,

- the footway in one bridge has moved to the opposite side of the bridge, and
- the widening to three culverts has changed;

For similar reasons, it is not considered that these changes will negatively impact on environment, Biodiversity, Cultural Heritage, Geology and Soils, Materials and Waste, Effects on All Travellers or Community and Private Assets. Equally it is not considered there will be changes to the impacts to any of these environmental features for the changes to the Acoustic Barriers.

Baseline

- 7.12. The Technical Notes in **Appendices E to L** explain the approach that each discipline has taken to account for the fact that the baseline for a Scheme that was consented in 2016 was likely to have moved on, but in the context that these Notes are not intended to form any kind of ‘updated’ ES.
- 7.13. As such, the assessments have sought to consider project (i.e. surveys undertaken during construction) and publicly available data, where available, in their assessments and have, unless otherwise stated, considered both:
- the changes using the baseline ecological information that informed the ES, to enable a ‘like for like’ comparison of the effects of the changes against the effects reported for the DCO scheme; and
 - an assessment of the impacts of the changes using the baseline ecological information that informed the ES, as well as any relevant updated ecological information collected since (up to 30 March 2021), to provide a current assessment of the potential effects of the changes.

Updates to the EIA Regulations and DMRB

- 7.14. Since the DCO was made, and the ES in support of it was carried out, both the EIA Regulations and DMRB, which guide the content of ESs, have changed.
- 7.15. In respect of the updated EIA Regulations, they included three categories of ‘likely significant effects on the environment’ not considered in the Scheme ES, namely climate change, health and major accidents and disasters. As those elements were not included in the Scheme ES, National Highways has been unable to compare the impacts of the proposed changes against the made DCO to determine if any new or materially different effects would arise.
- 7.16. The scheme assessed within the 2015 DCO did not include an assessment of embodied carbon as this was not a legislative requirement at the time of submission. However, as the Application is focussed on design changes to the overall scheme and that there is therefore no baseline to compare to and given that the scheme construction footprint will be less with the proposed design changes, it is assumed that no further assessment of this matter is required to be taken forward; and it is assumed to not be a factor that will affect the materiality of the change.
- 7.17. In respect of the changes to DMRB, National Highways’ approach has been informed by the need to ensure that, as much as possible, the assessments set out in the Application, enable a ‘like for like’ comparison to be made against the ES, so that it can be properly be considered whether new, or materially different

likely significant effects arise from the changes proposed in the Application, rather than simply because the methodology has changed.

- 7.18. This is particularly in the context that the Application does not constitute an ‘application’ or ‘subsequent application’ for the purposes of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017; and that therefore the detailed requirements of EIA do not apply.
- 7.19. The focus is on the impact of a change and it would be inappropriate and disproportionate to have to re-consider the assessments undertaken for the ES to then enable a true like for like assessment of change. For example, consideration of the contribution of the Scheme to carbon budgets, as required by DMRB LA 114 Climate, would require a wholesale re-consideration of the traffic models and embodied carbon impact of the Scheme as a whole, to then see if the small, non-material changes would make any difference to those figures.
- 7.20. As this is not a whole new ES, and the focus of the application is on changes, this level of detail is not required for aspects that are not part of the change or the scheme as a whole.
- 7.21. For these reasons, therefore, the environmental assessments set out in **Appendices E to L** have been undertaken guided by the assessment methodologies which applied to the original ES, not the new DMRB methodologies.

In-Combination / Cumulatives

- 7.22. Chapter 16 of the Environmental Statement submitted in support of the DCO application considered combined and cumulative effects.
- 7.23. The former assessed the combined action of different environmental topic-specific impacts upon a single resource/receptor. As explained below, as none of the changes considered in this Application lead to either minor or negligible changes to the assessments set out in the ES, it is not considered that any in-combination effects between two topics would arise.
- 7.24. In relation to cumulative effects, a review of relevant planning portals was undertaken in March/April 2021 to determine if any additional developments in locations other than those previously considered (built or under construction only) within 1km of the areas subject of the Application, which did not exist within the planning system in January 2015. Such developments would not have been considered in the cumulative effects assessment or the traffic modelling undertaken in support of the DCO application, and therefore, need to be considered for this Non-Material Change Application.
- 7.25. This review concluded that two new committed developments, meeting the selection criteria outlined in Chapter 16 of the ES, are present. These consists of one committed development within 1km of Junction 11 and one committed development within 1km of Junction 6. Therefore, the cumulative effects assessment and conclusions presented in the ES have been re-assessed where necessary.

Summary of Assessments

- 7.26. The assessments for the No-TJR Changes have concluded that the changes are within acceptable environmental parameters, considering the positive

environmental impact of retaining the existing intra-junction layout and negating the need for vegetation clearance and associated works to amend the merge/diverge at junctions.

- 7.27. Equally, in respect of the Sipson Road Subway Change, the proposal to place a retaining beam over the northern entrance as opposed to widening on the southern side offers the most practical solution. This solution reduces the risk of working next to services and avoids introducing a longitudinal joint in the carriageway. Overall, this solution minimises disruption to the users of the subway, drivers, the environment, and associated services.
- 7.28. Furthermore, in respect of the LoDs Changes at Huntercombe Spur, Oldway Lane and Wood Lane overbridges, the assessment has found that the change in design of these structures results in a beneficial visual impact, less retaining wall solution on the bridges' approaches minimising construction time and materials. In relation to the EDR Principles changes the changes on the structures and culverts will lead to no change or minor benefits from a visual perspective (which is the focus of assessment given the type of change of design being brought forward), as discussed below:
- 7.29. **Monkey Island Lane:** the change from a single-span to a three-span bridge will remove retaining structures and will create beneficial visual impacts due to increased opportunity for replanting.
- 7.30. **Lake End Road:** the change from a single-span to an asymmetric two-span, eliminates the need for a cantilevered wingwall which reduces material and waste and reduces the construction programme. The embankments in the side road design remain no steeper than 1:2, meaning tree/shrub planting is still possible and so there is no change to the visual impact. The appearance of the bridge will remain the same due to the materials used in its construction remaining the same. The assessment also found that due to extension of the bridge and the introduction of a pier, the views through the bridge will be widened and the change in design results in a neutral impact on the visual appearance.
- 7.31. **Recreation Ground:** The change of the footway from the east to the west will allow a reduction in the retaining walls height. The change in retaining wall height and squaring off of the alignment minimises visual impact. Therefore, there is no direct change of the proposed planting design and vegetation clearance and thus no change to the ES conclusions.
- 7.32. **Windsor Branch Railway and Culvert:** the reconstruction of the central reserve has no environmental change and does not change the widening of the three culverts.
- 7.33. **Acoustic Barriers:** The changes to EM6 and EM8 have been assessed for noise and visual impact (as per **Appendix M**) and do not change the conclusions set out in the 2015 DCO Environmental Statement.
- 7.34. As the above paragraphs make clear, each individual change does not lead to new or materially different effects than were assessed in the ES; and it is considered that in combination, both to individual receptors at the locations of the changes and from the perspective of the Scheme as a whole, the changes are neutral or minor in nature; and therefore would not cause an overall material change to the environmental position considered at DCO stage.
- 7.35. In conclusion, therefore, none of the changes individually, or together will lead to new, or materially different likely significant effects on the environment, such that a new ES would be required (either as Schedule 2 development or otherwise).

Test 3: European Protected Species (EPS) Licence and Habitats Regulations Assessment (HRA)

- 7.36. A qualitative assessment has been undertaken, comparing the DCO Solution with the changed proposal, including where survey data is available, any updated baseline information; and with reference to the EPS requirements, no new licences are required as a result of the proposed non-material changes.
- 7.37. A qualitative assessment has also been undertaken in respect of impacts to European Sites, with reference to the ecology and nature conservation assessment presented in Chapter 9 of the ES and Appendix 9.3 AIES Screening Matrix submitted in support of the DCO application. The assessment considered the potential impacts of the changes on designated sites, habitats, and protected species.
- 7.38. These qualitative assessments are discussed in detail in the technical notes in **Appendices E to L**.
- 7.39. In summary the qualitative assessment undertaken for each change has concluded that the proposed solution will not result in any change to the conclusions of the AIES Screening Matrix, when assessed using either the DCO ecological baseline or the current ecological baseline; and thus no new HRA is required.
- 7.40. The assessment and conclusions presented in the AIES Screening Matrix remain valid.
- 7.41. No qualitative assessment for EPS and HRA has been undertaken for the changes on EDR Principles Changes and Acoustic Barrier as it is not considered that these changes will have an impact on Biodiversity.

Test 4: Impacts to Business and Residents

No-TJR Changes

- 7.42. The proposal to not implement TJR at those four junctions will lessen the impact on the traveling public and residents especially at junctions 5 and 6 where there is no widening of the structures and therefore there would be a reduction in the construction period around the intra-junction. In addition, removing the need to divert statutory undertaker's apparatus at junction 5 will remove the need to have the A4 roundabout under traffic management for up to 3 years.
- 7.43. Furthermore, removing the need for piling at Junction 5 will reduce the noise for local residents and reducing the potential disruption from the traffic management associated with the Junction 5 works.
- 7.44. Furthermore, **Appendices E to H** consider the traffic impacts of the changes, using the modelling approach explained in **Appendix D**. These Technical Notes demonstrate that the changes do not cause any material change to the operational traffic impacts considered in the DCO application for the Scheme, in relation to congestion, delay, or journey time (and thus driver stress).

Sipson Road Subway Change

- 7.45. There will be occasions when access to the subway will need to be either restricted or closed to allow installation and maintain the safety of the public. These restrictions and closures are relevant to both the DCO and proposed changed design. Despite this option being closer to residents, there are significant benefits with utilities not being diverted, minimising disruption to the users of the subway and drivers due to a significant shorter construction programme.
- 7.46. However, the proposed solution (precast beam) offers a reduced works programme and will reduce the construction sequencing to lessen the noise for residents on the north side, and therefore will likely cause less disruption to users of the subway.

LoDs Changes

- 7.47. In respect of the Huntercombe Spur Overbridge, with the introduction of the temporary bridge, the traffic will not be interrupted, and it will benefit the travelling public and residents due to a shorter construction programme. Furthermore, the alignment of Huntercombe Spur overbridge over the M4 has moved west by up to 17m moving away from the residential area on the north-east quadrant and therefore reduced any potential noise disturbance.
- 7.48. In respect of Oldway Lane Overbridge, there are no impacts on residents and businesses as a result of the deviation in the vertical alignment.
- 7.49. In respect of the Wood Lane Overbridge, the new design reduces the requirement to divert a water main. The old design, requiring the diversions, would have resulted in at least a 6-month delay to the construction programme of both Wood Lane overbridge and the M4 Smart Motorway. The implications of the new design on customers is therefore a minor positive change, considering the mitigation of a potential 6-month delay and extended construction programme which would have caused additional disruption to users and residents.

EDR Principles Changes and Acoustic Barriers Changes

- 7.50. There are no impacts on residents and businesses as a result of the EDR Principles Changes as they involve minor changes to design. Equally, there are no impacts on residents and businesses as a result of the changes in acoustic barriers.

No-TJR, Sipson Road Subway and LoDs Changes – Safety

- 7.51. National Highways' road network currently has high performance in terms of safety and it is an objective of this Scheme to maintain that high standard. The design changes proposed under the NMC Application has been subject to a Road Safety Audit and an Operational Safety Assessment for the No-TJR changes.
- 7.52. These assessments have been carried out to review the safety implications for road users and Non-Motorised users for those proposed changes. The outcome of these assessments is in the **EDR Annex C and D**, Road Safety Audit and Designer's Response accordingly. It should be noted that there is a slight error in the updated Road Safety Audit: Junctions 3 and 4b were not considered for TJR as they are a terminal junction and a motorway-to-motorway interchange respectively.

- 7.53. In relation to the Operational Safety Assessment for No-TJR changes they are described in the **Technical Notes in Appendices D to G**.
- 7.54. Due to the inherent nature of smart motorways, the Agency has developed bespoke procedures for dealing with incidents and undertaking operational and maintenance activities where there is no hard shoulder. This is supplemented by a media campaign to educate drivers.
- 7.55. Incident management for the Scheme is outlined in the EDR Chapter 9.
- 7.56. Furthermore, an updated Hazard Log has been put in place and is set out in **EDR Appendix E**. A hazard log is a database that contains a list of operational hazards, the associated risk from each hazard, and mitigations to reduce the risk to an acceptable level.

Driver Safety and Workforce/Pedestrian Safety Assessments

- 7.57. Driver safety and workforce and pedestrian safety assessments for each of the above changes were carried out. A summary of these assessments are summarised in Table 5 below:

| Change | Driver Safety | Workforce and Pedestrian Safety |
|---|--|--|
| <p>No-TJR (Junctions 5, 6, 8/9 and 11) Changes</p> | <p>An assessment of operational safety was conducted on the No-TJR and TJR arrangements and was published in the M4 J3-12 Managed Motorways All Lane Running Scheme Through Junction Running (TJR) Operations and safety Assessment May 2013. Following the publication of IAN 161/15 that allowed each junction to be assessed independently for NTJR or TJR, rather than IAN161/13 that stipulated an scheme must adopt TJR at all junctions, the review concluded that the most appropriate operating regime for junctions 5,6,8/9 and 11 is NTJR. However, this did not change the safety conclusions from the May 2013 assessment. It was found that No-TJR would provide an equally safe environment for drivers as TJR at each junction. Furthermore, the provision</p> | <p>Retaining the existing No-TJR layout will significantly shorten the programme of works required at each junction and it will greatly reduce the construction programme, therefore reducing the exposure of risk to road workers.</p> <p>Changes to gantries are considered neutral, given the small amount of change. Existing procedures are in place for installation of all gantry types and this change does not present any new risk or procedures. Changes to gantries will be taken through the schemes Safety Control Review Group to ensure consistency and maintainability.</p> |

| Change | Driver Safety | Workforce and Pedestrian Safety |
|---|--|--|
| | <p>of a hard shoulder intra-junction would also provide an additional place of relative safety for road users.</p> <p>The variable speed limits and lane closure signs as part of the Smart Motorway scheme would also benefit workers within the highway when essential maintenance is undertaken, or emergency and other services are on the carriageway following an incident. This would contribute to further reduction in workforce safety risk, which is one of the project’s safety objectives, and Highways England’s strategic safety objectives.</p> <p>When evaluating risks associated with the comparison of the junctions subject to either TJR or No-TJR, it is considered that there is less risk to the worker and user populations if No-TJR is provided, as a lane drop scenario would provide additional stacking capacity on the approach to these junctions (supported with advanced lane destination signing). These changes have gone through a Road Safety Audit process to ensure all safety implications for NTJR layout have been considered.</p> | |
| <p>Sipson Road Subway Change</p> | <p>There are no impacts on safety of drivers passing over Sipson Road Subway on the M4 as a result of the design change.</p> | <p>The proposed works are now restricted to the northern side of Sipson Road Subway. The structural works can be carried out away from the</p> |

| Change | Driver Safety | Workforce and Pedestrian Safety |
|--------|---------------|--|
| | | <p>road, the workforce will work within the M4 boundary but away from the road and separated by the existing fencing. Works such as the installation of the Vehicle Restraint System (“VRS”) and acoustic barrier, resurfacing and installation of services will be done during lane/full road closures on the M4 if the nature of the works require this. The reduced scope of works realised by this alternative will reduce the exposure of site operatives to construction and traffic hazards and subsequently site risks. Careful staging of the works, risks assessments and safe working methodology will be required to limiting workers exposure to site risks such as working at height, adjacent to traffic, earthworks/embankments etc.</p> <p>There will be occasions when access to the subway will need to be either restricted or closed to allow installation and maintain the safety of the public. These restrictions and closures are relevant to both the DCO stage and the current design. However, the proposed solution for Sipson Road Subway offers a reduced works programme, and therefore will cause less impact to users of the subway.</p> <p>There is no difference between the 2015 DCO solution and the NMC proposed solution to the users of the subway once</p> |

| Change | Driver Safety | Workforce and Pedestrian Safety |
|---|--|--|
| | | the works are complete |
| <p>LoDs Changes: Huntercombe Spur overbridge</p> | <p>The change in design has no impact on driver safety. All sightlines have been assessed and the planting areas modified to ensure visibility is compliant with the requirements of DMRB.</p> | <p>The change in design to Huntercombe Spur overbridge has no impact on workforce safety or pedestrians safety. Careful staging of the works, risk assessments and safe working methodology will limit workers exposure to site risks such as working at height, adjacent to traffic, earthworks/embankments etc.</p> |
| <p>LoDs Changes: Oldway Lane Overbridge</p> | <p>The structure will no longer carry motorised vehicles, so will improve the safety of Non Motorised Users (“NMUs”) using the bridge.</p> | <p>The change in design to Oldway Lane overbridge has a net positive impact on workforce safety, through the minimising of on-site assembly required for the truss bridge, in particular the elimination of on-site welding. The deletion of the retaining solutions on the approaches is also beneficial, reducing the overall duration of the works as well as eliminating specific hazards such as handling of pre-cast wall units and backfilling adjacent to the structure.</p> <p>The same principles of controlling pedestrians throughout the construction as the 2015 DCO solution will be implemented for the proposed solution. Also, by reducing on site activities both the level of hazard and duration of exposure will be reduced.</p> <p>With regard to final operation, the structure will no longer carry motorised vehicles, so will improve the safety of Non-Motorised</p> |

| Change | Driver Safety | Workforce and Pedestrian Safety |
|--|--|---|
| | | Users (NMUs) using the bridge even with the new design. |
| <p>LoDs Changes: Wood Lane Overbridge</p> | <p>The change in design has no impacts to the safety of road users. The existing Wood Lane overbridge is subject to a 20MPH speed limit with traffic control measures (speed humps). The new road will continue to be restricted to 20MPH with traffic control measures.</p> | <p>The change in design to Wood Lane overbridge has no impact on workforce safety or pedestrian safety. Careful staging of the works, risk assessments and safe working methodology will limit workers exposure to site risks such as working at height, adjacent to traffic, earthworks/embankments etc.</p> |

Table 5: Driver and Workforce/Pedestrian Safety Summary

7.58. For further details of driver safety and workforce/pedestrian safety assessments at each of the above changes, please refer to **Appendixes E to L**.

7.59. As outlined in Table 5 the changes to structures and the changes to Acoustic Barrier result in less hazardous or shorter construction duration and have no impact upon the final operation of the scheme following completion of the works and therefore are no safety implications for the changes to structures being brought forward pursuant to the EDR Principles Changes or as a result of the Acoustic Barriers Changes.

The Wheatcroft Principle (as expanded upon by Holborn Studios)

7.60. This principle considers whether changes to a scheme are of such an extent that a thirty party would (absent the process set out by the 2011 Changes Regulations) be considered to have been deprived of the opportunity to have been consulted when they should have been. As established in the Holborn Studios case, whether or not further consultation would be required depends, amongst other things, on the nature and extent of the proposed changes and their potential significance to those who might expect to have been consulted.

7.61. In the case of the Scheme, the design that went through the DCO process was for a smart motorway scheme, providing all lane running across 32 miles of the M4; necessitating changes to a number of structures.

7.62. The Application does not change this fundamental reality – all lane running is still proposed across the vast majority of that 32 miles, with the change to No TJR only affecting 3.5 miles in total (for Junctions 5, 6, 8/9 and 11) and only 3 structures, 1 culvert and 1 subway are no longer being amended as a consequence of this. These are clearly small matters in the context of the wider scheme.

7.63. As set out in this Statement and in the Appendices, the environmental, transport and safety benefits and impacts of the Scheme are not affected by these changes; and so cannot be considered as significant.

7.64. Furthermore, whilst National Highways recognises that smart motorways are

subject to a lot of commentary and opinion, the changes are not germane to the concept of smart motorways as a principle, they simply change small aspects of detail of what still remains a smart motorway scheme. They cannot therefore be significant to those who criticise smart motorway schemes, as they do not change the fundamental reality of the scheme continuing to be a smart motorway scheme.

- 7.65. All of the non No TJR changes involve changes to the details of the design that is being brought forward – the structures are just being amended, just in a slightly different fashion. Neither individually or cumulatively can they be considered to be of such nature, extent or significant that they would require consultation – as they are essentially small changes to the parameters of the Scheme.
- 7.66. In conclusion therefore, it is considered that the Wheatcroft principle, as clarified by the Holborn Studios case, is not a reason why the Application should be considered to be a material change.

8. Consultation and Engagement

Engagement Undertaken

- 8.1. Throughout the construction and detailed design phase of the Scheme, National Highways has been in constant contact with stakeholders about the progression of the Scheme, pursuant to the Requirements of the DCO.
- 8.2. To enable key stakeholders to understand further potential impacts of the non-material changes specifically, National Highways undertook engagement with local authorities about the intentions to pursue the NMC's changes, as follows:
- Between May 2019 and August 2019 National Highways carried out engagement with various local authorities along the M4 including West Berkshire BC, Reading BC, Wokingham BC, Royal Borough of Windsor & Maidenhead, Slough BC and Thames Water Ltd and it was mentioned operating assessment of TJR/No-TJR had been undertaken at various junctions and that the potential removal of TJR would potentially be being brought forward by National Highways. The local authorities visited understood the differences between TJR and No-TJR highways layout and the impact on traffic figures following the presentation given by National Highways. Also, some changes to the structures, in relation to vertical alignment changes (Huntercombe Spur, Wood Lane and Oldway Lane overbridges), were briefly mentioned.
 - A meeting with Slough to discuss potential changes at Oldway Lane and Wood Lane overbridges was held in November 2019 and letters confirming the proposed solutions were sent in July 2020. No concerns were expressed by Slough on the structures within their remit.
 - For the Sipson Road Subway Change, National Highways through its Contractor has engaged with Cherry Lane Primary School and Cherry Lane Children's Centre to explain the works and likely dates and times of proposed closures that would be necessary if the Application was successful.
 - It has been agreed that a two weeks' advance notice of any closure(s) of the subway, roads and footpaths/ Non-Motorised User paths will be provided with adequate signage and details of diversion directions and arrangements, will be in place, as necessary. All notification and signage is to be clearly displayed 24 hours/7 days a week and will include contact details of key personnel at National Highways England and the Contractor for the benefit of the public in case of enquiries or emergencies. The Contractor will liaise directly with Cherry Lane Primary School Site Manager, as necessary, to give prior notice of delivery of heavy loads and noisy construction activities, Pedestrian access will be maintained between Sipson Road and Vine Close.
 - For the LoDs changes and the EDR Principles Changes, consultation was carried out with all affected local highways authority (LHA) through the submission of the re-discharge application of Requirement 6 Side Roads and Requirement 3 Structures for those aspects able to be re-discharged for those aspects that did not need to form part of the Application. As such, they are aware of the design changes taking place at these locations. Each LHA received the re-discharge applications and had a consultation period of 5

weeks. No objections were received for Requirement 6 and Requirement 3 and National Highways submitted the re-discharge applications letters and reports to Secretary of State (SoS) on 11 February and 18 March 2021 respectively. The approvals from the SoS were granted on 25 February and 01 April 2021 respectively.

- In relation to the Acoustic Barriers Changes, National Highways notified Wokingham Borough Council of the proposed changes and considered that they should be required to go through the Non-Material change process.

9. Conclusions

- 9.1. National Highways is submitting the Application in order to make a Non-Material Change to the DCO to facilitate the Scheme changes set out in this Statement.
- 9.2. In bringing the Application forward, National Highways has considered the DCLG Guidance and assessed the proposed change in accordance with the criteria set out therein and concluded that:
- there are no new or materially different likely significant effects on the environment;
 - there is no need for a Habitats Regulations Assessment or EPS licence;
 - no additional third-party land is required in order to construct the amended Scheme and no additional compulsory acquisition of land is necessary; and
 - the proposed amendment will not have a material impact on businesses and residents. The proposed change would improve safety and journey reliability for road users; and
 - the change would not offend the *Wheatcroft* principle (as developed by the *Holborn Studios* case).
- 9.3. Based on all the above, National Highways therefore considers the proposed changes to be non-material and considers there is no impediment to the Secretary of State being able to make a Non-Material Change Order in the form sought by it, pursuant to paragraph 2 of Schedule 6 to the PA08.
- 9.4. A summary of the changes and the materiality assessment is in **Appendix C**.

Appendix A – List of Documents

The following documents make up this Application:

- Application Statement incorporating assessment of materiality and the following appendices:
 - Summary of Materiality Assessment
 - Plans and EDR References for each Change Table
 - Traffic Modelling Verification Technical Note
 - No-TJR at Junction 5 Technical Note
 - No-TJR at Junction 6 Technical Note
 - No-TJR at Junction 8/9 Technical Note
 - No-TJR at Junction 11 Technical Note
 - Sipson Road Subway Widening North Technical Note
 - Huntercombe Spur Technical Note
 - Oldway Lane Overbridge Technical Note
 - Wood Lane Overbridge Technical Note
 - Acoustic Barriers Changes Technical Note
- Draft Amendment Order
- Tracked Changes versions of Article 40 and Schedules 1, 2, 10 and 12
- Clean and Track Changed (of the front end only) versions of the EDR
- Updated plan sets:
 - the Works Plans (Volume 2, Section 2.3). Please note that this set does not include a Key Plan as it involves the replacement of specific sheets, rather than full sets, of plans.
 - Engineering Sections (Volume 2, Section 2.5)
 - Side Roads Plans & Profiles (Volume 2, Section 2.6)
 - Earthworks Standard Details (Volume 2, Section 2.7)
 - EDR Appendices: Environmental Masterplan Drawings (Annex A1), Vegetation Clearance Drawings (Annex A2), General Arrangement Drawings (Annex F1), Underbridges General Arrangement (Annex F2) and Overbridges General Arrangement (Annex F3).
 - A new sub-set of the Drainage Strategy Report Appendix H Combined Drainage Drawings
 - A new plan set known as 'Earthworks Layout Drawings' (Volume 2, Section 2.9).
- Application Notice

Appendix B – Plans and EDR References for each Change

| Change Category | Change | EDR Section | Works Plans | Engineering Sections | Side Roads Plans | Earthworks Standard Details | Environmental Masterplan Drawings | Vegetation Clearance Drawings | Mainline General Arrangement Drawings | Drainage Drawings | Earthworks Layout Drawings |
|----------------------------------|---|----------------------|------------------|----------------------|------------------|-----------------------------|-----------------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|
| No - TJR Changes | Junction 5 | Sections 7.7 and 7.8 | Sheets 24 to 26 | Sheet 6 | n/a | n/a | Sheets 47 to 52 | Sheets 23 to 26 | Sheets 47 to 52 | Junction 5 Sheets 1 to 6 | Junction 5 Sheets 1 to 6 |
| | Junction 6 | Sections 7.6 and 7.7 | Sheets 20 to 23 | Sheets 3 to 5 | n/a | n/a | Sheets 41 to 46 | Sheets 20 to 23 | Sheets 41 to 46 | Junction 6 Sheets 1 to 6 | Junction 6 Sheets 1 to 6 |
| | Junction 8/9 | Sections 7.4 and 7.5 | Sheets 16 to 19 | Sheet 2 | n/a | n/a | Sheets 30 to 36 | Sheets 15 to 17 | Sheets 30 to 36 | Junction 8/9 Sheets 1 to 7 | Junction 8/9 Sheets 1 to 7 |
| | Junction 11 | Sections 7.2 and 7.3 | Sheets 5 to 7 | Sheet 1 | n/a | n/a | Sheets 8 to 12 | Sheets 4 to 6 | Sheets 8 to 12 | Junction 11 Sheets 1 to 5 | Junction 11 Sheets 1 to 5 |
| LoDs Changes | Huntercombe Spur | Section 7.6. | Sheet 20 | n/a | Sheets 5 to 7 | n/a | Sheets 38 to 40 | Sheets 19 and 20 | Sheets 38 to 40 | n/a | n/a |
| | Oldway Lane | Section 7.6 | Sheet 20 | n/a | Sheet 8 | n/a | Sheet 40 | Sheet 20 | Sheet 40 | n/a | n/a |
| | Wood Lane | Section 7.6 | Sheet 21 | n/a | Sheet 9 | n/a | Sheet 41 | Sheet 20 | Sheet 41 | n/a | n/a |
| Sipson Road Subway Change | n/a | Section 7.9 | Sheet 28 | n/a | n/a | n/a | Sheet 56 | Sheet 28 | Sheet 56 | n/a | n/a |
| EDR Principles Changes | Monkey Island Lane Overbridge | Section 7.5 | Sheet 19 | n/a | Sheet 2 | n/a | Sheet 36 | Sheet 18 | Sheet 36 | n/a | n/a |
| | Lake End Road Overbridge | Section 7.5 | Sheet 20 | n/a | Sheet 4 | n/a | Sheet 38 | Sheet 19 | Sheet 38 | n/a | n/a |
| | Windsor Branch Railway Underbridge | Section 7.7 | Sheet 22 | n/a | n/a | n/a | Sheet 43 | Sheet 21 | Sheet 43 | n/a | n/a |
| | Recreation Ground Overbridge | Section 7.7 | Sheet 23 | n/a | Sheet 11 | n/a | Sheet 45 | Sheet 22 | Sheet 45 | n/a | n/a |
| | Culverts | Section 7.7 | Sheets 22 and 23 | n/a | n/a | n/a | Sheets 42 and 43 | Sheet 21 | Sheets 42 and 43 | n/a | n/a |
| Acoustic Barriers Changes | EM08 | n/a | n/a | n/a | n/a | n/a | Sheets 12 to 15 | Sheets 6 to 8 | Sheets 12 to 15 | n/a | n/a |
| | EM06 | n/a | n/a | n/a | n/a | n/a | Sheet 11 | Sheet 6 | Sheet 11 | n/a | n/a |

Appendix C - Summary of Materiality Assessment

| Changes Materiality | no-TJR (Junction 5, 6, 8/9 and 11) | Sipson Subway | Structures Outside of the Limits of Deviation (LoD) | | | Acoustic Barriers |
|---|--|--|--|---|---|---|
| | | | Huntercombe Spur | Oldway Lane | Wood Lane | |
| Environmental Impact | <p>Noise Assessment - The qualitative assessment has concluded that the Changes will not result in any significant construction noise and vibration level changes or operational noise level changes to surrounding receptors when compared with the DCO.</p> <p>Air Quality Assessment - The assessment has identified that traffic changes are overall beneficial and that changes provided by the Changes are negligible. Considered together, these changes are expected to result in overall beneficial change in air quality compared to the assessment presented in the Environmental Statement.</p> <p>Visual Impact Assessment - It is concluded that there are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid.</p> | <p>Noise Assessment The qualitative assessment has concluded that the Changes will not result in any significant construction noise and vibration level changes or operational noise level changes to surrounding receptors when compared with the DCO Solution.</p> <p>Air Quality Assessment - There are no changes in traffic flows associated with the Changes and therefore there are no effects on air quality at sensitive receptors due to changes in traffic flows.</p> <p>Visual Impact Assessment - There are no changes to the assessment of temporary residual effects during construction presented in the Environmental Statement as a result of the Changes when considering either the baseline information presented in the Environmental Statement or the current baseline. Additional vegetation clearance is negligible for West Drayton urban area, residential properties on Keats Way and Vine Close as the area around Sipson Road Subway entrance north is restricted and would not change the visual amenity for the sensitive receptors. There are no changes to the assessment of permanent residual effects during operation presented in the Environmental Statement as a result of the Changes when considering either the baseline information presented in the Environmental Statement or the current baseline.</p> | <p>Noise Assessment - The qualitative assessment has concluded that the Changes will not result in any significant construction noise and vibration level changes or operational noise level changes to surrounding receptors when compared with the DCO Solution.</p> <p>Air Quality Assessment - The assessment has identified that traffic changes are negligible and that changes provided by the Changes are beneficial. Considered together, these changes are expected to result in overall beneficial change in air quality compared to the assessment presented in the Environmental Statement.</p> <p>Visual Impact Assessment - The Changes has been assessed against the baseline information presented in the Environmental Statement and the current baseline (as of April 2021) and has been compared against the assessment of residual effects presented in the Environmental Statement submitted in support of the DCO application. It is concluded that there are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid.</p> | <p>Noise Assessment - The qualitative assessment has concluded that the Changes will not result in any significant construction noise and vibration level changes or operational noise level changes to surrounding receptors when compared with the DCO.</p> <p>Air Quality - The scale of the works being undertaken for the Changes are very similar to those in the DCO. Therefore, the potential for adverse effects due to fugitive emissions of dust will be similar with both designs.</p> <p>Visual Impact Assessment - There are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid. There are no changes to the assessment of temporary residual effects during construction presented in the Environmental Statement as a result of the Changes when considering either the baseline information presented in the Environmental Statement or the current baseline. There are no changes to the assessment of permanent residual effects during operation presented in the Environmental Statement as a result of the Changes when considering either the baseline information presented in the Environmental Statement or the current baseline.</p> | <p>Noise Assessment – The qualitative assessment has concluded that the Changes will not result in any significant construction noise and vibration level changes or operational noise level changes to surrounding receptors when compared with the DCO.</p> <p>Air Quality Assessment - There are no anticipated changes in traffic flows due to the Proposed Solution, therefore there is no anticipated change in air quality due to traffic flows. There are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid.</p> <p>Visual Impact Assessment - It is concluded that there are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid.</p> | <p>Noise Assessment: No significant increases in noise levels to residential properties in these locations are anticipated as a result of the changes proposed. This will not change the conclusions presented in the Environmental Statement.</p> <p>Air Quality Assessment - There are no anticipated changes in traffic flows due to the Proposed Solution, therefore there is no anticipated change in air quality due to traffic flows.</p> <p>Visual Impact Assessment – For the first acoustic barrier where there is a length reduction and the second acoustic barrier which has been retained, instead of being replaced; there are no changes to the assessment of residual effects presented in the Environmental Statement, and therefore the assessment and conclusions presented in the Environmental Statement remain valid.</p> |
| Biodiversity (including Habitat & Protected Species) | <p>The qualitative assessment has concluded that the Changes will not result in any change to the significance of residual, in-combination, or cumulative effects on biodiversity receptors compared to the DCO, when assessed using either the DCO ecological baseline or the current ecological baseline. No changes to the conclusions of the Habitats Regulations Assessment AIES Screening Matrix undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> | <p>The qualitative assessment has concluded that the Changes will not result in any change to the significance of residual, in-combination, or cumulative effects on biodiversity receptors compared to the DCO, when assessed using either the DCO ecological baseline or the current ecological baseline. No changes to the conclusions of the Habitats Regulations Assessment AIES Screening Matrix undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> | <p>The qualitative assessment has concluded that the Changes will not result in any change to the significance of residual, in-combination, or cumulative effects on biodiversity receptors compared to the DCO, when assessed using either the DCO ecological baseline or the current ecological baseline. No changes to the conclusions of the Habitats Regulations Assessment AIES Screening Matrix undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> | <p>The qualitative assessment has concluded that the Changes will not result in any change to the significance of residual, in-combination, or cumulative effects on biodiversity receptors compared to the DCO, when assessed using either the DCO ecological baseline or the current ecological baseline. No changes to the conclusions of the Habitats Regulations Assessment AIES Screening Matrix undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> | <p>The qualitative assessment has concluded that the Changes will not result in any change to the significance of residual, in-combination, or cumulative effects on biodiversity receptors compared to the DCO, when assessed using either the DCO ecological baseline or the current ecological baseline. No changes to the conclusions of the Habitats Regulations Assessment AIES Screening Matrix undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> | <p>No changes to the conclusions of the Habitats Regulations Assessment undertaken for the original DCO arise as a result of the change, and no new EPS licenses are required.</p> |
| Land Acquisition | The proposed changes have no material impact on the scheme's engineering, design or physical layout and requires no additional areas of non-National Highways owned land adjacent to the highway boundary. | | | | | |

M4 Junctions 3 to 12 Smart Motorway Scheme Non Material Change – Application Statement

| | | | | | | |
|--|---|---|---|---|--|--|
| <p>Impact on Business & Residents</p> | <p>The proposed changes have no material impact on the scheme's engineering, design or physical layout and requires no additional areas of non-National Highways-owned land adjacent to the highway boundary.</p> | <p>Although the revised location is closer to sensitive receptors than the DCO, the environmental assessment has indicated no significant effects. Furthermore, the proposed solution for Sipson Subway offers a reduced works programme, and therefore will likely cause less disruption to users of the subway.</p> | <p>With the introduction of the temporary bridge, the traffic will not be interrupted, and it will benefit the travelling public and residents due to a shorter construction programme. Furthermore, the alignment of Huntercombe Spur overbridge over the M4 has moved west by up to 17m moving away from the residential area on the north-east quadrant and therefore reduced any potential noise disturbance.</p> | <p>There are no impacts on residents and businesses as a result of the deviation in the vertical alignment.</p> | <p>The Changes will significantly lessen the impact on the travelling public and residents as the construction programme has been reduced by 6 months.</p> | <p>There are no impacts on residents and businesses as a result of the changes in acoustic barriers.</p> |
|--|---|---|---|---|--|--|

Appendix D - Traffic Modelling Verification Technical Note

Appendix E - No-TJR at Junction 5 Technical Note

Appendix F - No-TJR at Junction 6 Technical Note

Appendix G - No-TJR at Junction 8/9

Technical Note

Appendix H - No-TJR at Junction 11

Technical Note

Appendix I - Sipson Road Subway Change Technical Note

Appendix J - Huntercombe Spur Overbridge Technical Note

Appendix K - Oldway Lane Overbridge Technical Note

Appendix L Wood Lane Overbridge Technical Note

Appendix M Acoustic Barriers Changes Technical Note

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