

**A12 Chelmsford to A120 widening scheme
TR010060
9.74 Closing Statement**

Rule 8(1)(k)

Planning Act 2008
Infrastructure Planning (Examination Procedure)
Regulations 2010

Volume 9

July 2023

Infrastructure Planning
 Planning Act 2008
 The Infrastructure Planning
 (Examination Procedure) Rules 2010

A12 Chelmsford to A120 widening scheme
 Development Consent Order 202[]

9.74 Closing Statement

Regulation Number	Rule 8(1)(k)
Planning Inspectorate Scheme Reference	TR010060
Application Document Reference	TR010060/EXAM/9.74
Author	A12 Project Team and National Highways

Version	Date	Status of Version
Rev 1	7 th July 2023	Final for Deadline 7

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Abbreviations and Acronyms

ARN	Affected Road Network
AQMA	Air Quality Management Area
AQO	Air Quality Objective
BCR	Benefit to cost ratio
BNG	Biodiversity Net Gain
CA	Compulsory acquisition
CAH	Compulsory acquisition hearing
CBDP	Carbon Budget Delivery Plan
CSZ	Core sustenance zone
dDCO	draft Development Consent Order
DCLG	Department of Communities and Local Government
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
DfT	Department for Transport
EIA	Environmental impact assessment
EMP	Environmental Management Plan
EqIA	Equality Impact Assessment
ES	Environmental Statement
ExA	Examining Authority
ExQ	Examiner's questions
GHG	Greenhouse gas
ha	hectare
HGV	Heavy goods vehicle
IEMA	Institute of Environmental Management and Assessment
ISH	Issue specific hearing
LNR	Local Nature Reserve
LOAEL	Lowest observed adverse effect level
LTN	Local transport note
LWS	Local Wildlife Site
kg	kilogramme
km	kilometre
Mcl PC	Messing-cum-Inworth Parish Council

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MIAG	Messing and Inworth Action Group
m	metre
mph	miles per hour
N	nitrogen
NNNPS	National Networks National Policy Statement
NPPF	National Planning Policy Framework
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NPS	National Policy Statement
NSIP	Nationally significant infrastructure project
PA 2008	Planning Act 2008
PAQAP	Project Air Quality Action Plan
PDP	Project Design Principles
PEIR	Preliminary Environmental Information Report
PM _{2.5}	Particulate matter with a diameter equal to or less than 2.5 microns
PM ₁₀	Particulate matter with a diameter equal to or less than 10 microns
PRoW	Public right of way
RAG	Red, amber, green
REAC	Register of Environmental Actions and Commitments
RIS	Road Investment Strategy
s22	section 22 of the Planning Act 2008
SOAEL	Significant observed adverse effect level
SoCC	Statement of Community Consultation
SoCG	Statement of Common Ground
SPP	Special Parliamentary Procedure
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
SuDS	Sustainable drainage systems
tCO _{2e}	tonnes of carbon dioxide equivalent
TDP	Transport Decarbonisation Plan
TPO	Tree preservation order
UKCP18	UK Climate Projections 2018
WCH	Walkers, cyclists and horse riders
WFD	Water Framework Directive

1 Introduction

1.1 Purpose of Document

- 1.1.1 This Closing Statement has been produced by the Applicant to summarise in one document its submissions on the matters that have been subject to submissions by Interested Parties and the Applicant during the course of the Examination of the proposed Development Consent Order (DCO) for the A12 Chelmsford to A120 Widening Scheme (the proposed scheme). In order to assist the Examining Authority and the Secretary of State in the reporting and decision making process, the Applicant has summarised the key themes relating to the proposed scheme explored throughout the Examination and the Applicant's closing position on these.
- 1.1.2 This Closing Statement does not make new points but instead draw on, and refer to, submissions made by the Applicant in its application for the DCO for the proposed scheme (DCO Application) to ensure that the Examining Authority, and ultimately the Secretary of State, are clear on the Applicant's position in relation to these matters and the remaining points of disagreement that arise from them.
- 1.1.3 In doing so, this document re-states the benefits of the proposed scheme, the proposed scheme's compliance with relevant policy, legislation and guidance, and points the Examining Authority and the Secretary of State to the evidence which is considered relevant to the application of section 104 of the Planning Act 2008 (PA 2008).

1.2 The Proposed Development

Nature of the scheme

- 1.2.1 The nature of the proposed scheme is set out in more detail in the Case for the Scheme, section 1.4 [APP-249] submitted by the Applicant. The proposed scheme seeks to widen the A12 to three lanes throughout (adding a lane where there is not already three lanes) with two new sections of three-lane dual carriageway, between junctions 22 and 23 and between junctions 24 and 25. It also includes safety improvements, including closing off existing private and local direct accesses onto the main carriageway, and alterations and improvements for walkers, cyclists and horse riders (WCH) to existing non-vehicular routes along the A12. The proposed scheme also includes a Gas Main Diversion, which meets the criteria to be considered a Nationally Significant Infrastructure Project (NSIP) in its own right under section 20 of PA 2008).

The proposed scheme's classification under the Planning Act 2008

- 1.2.2 In Messing and Inworth Action Group's (MIAG) written representation at Deadline 2 and oral case at the second issue specific hearing (ISH2) on 1 March 2023, it is asserted that the whole of the A12 scheme does not constitute

an alteration proposal under s22(1) of PA 2008. In particular, MIAG contends that the proposed 5 (or 6) km section between Feering and Marks Tey not only consists of the construction of a new highway but should also be treated as an NSIP in its own right. It is MIAG's contention that the Applicant has misinterpreted s22 of the PA 2008 and should have submitted two highway NSIPs. Thus MIAG contends that to grant the DCO would be unlawful. MIAG's submissions in this regard are wholly misconceived.

- 1.2.3 The Applicant has responded to this submission at page 268 of the Applicant's Response to Written Representations [REP3- 009]. The Applicant's position is that the A12 scheme consists of development that forms alteration of a highway for the reasons set out in the Applicant's Response to Written Representations [REP3-009]. MIAG's submission regarding the construction between Feering and Marks Tey is incorrect.
- 1.2.4 Section 31 of PA 2008 states that "consent under this Act (development consent) is required for development to the extent that the development is or forms part of a nationally significant infrastructure project."
- 1.2.5 Section 14(1) of PA 2008 provides that "In this Act "nationally significant infrastructure project" means a project which consists of any of the following— ... (h) highway-related development..."
- 1.2.6 Section 22 of PA 2008 defines highway related development as follows:
“(1) Highway-related development is within section 14(1)(h) only if the development is—
(a) construction of a highway in a case within subsection (2),
(b) alteration of a highway in a case within subsection (3), or
(c) improvement of a highway in a case within subsection (5)..."
- 1.2.7 Having regard to these provisions, MIAG's argument is obviously wrong.
- 1.2.8 Provided that the terms of section 22 PA 2008 are satisfied by way of any of the three available pathways in section 22, then the highways related development, here the A12 scheme, will be an NSIP. See, by analogy, **R. (Ross) v Secretary of State for Transport** [2020] EWHC 226 (Admin), [2020] PTSR 799 at [63], considering section 23 PA 2008.
- 1.2.9 There is nothing in section 22 of PA 2008 (or any other part of PA 2008) which requires a NSIP to be confined to only one of the pathways in section 22 or which requires development within different pathways in section 22 to be treated as separate NSIPs.
- 1.2.10 To the contrary, the different pathways all lead to the same end point: the conclusion that the development is highways related development and thus a NSIP. The NSIP is 'highways related development'; the NSIP is not 'construction of highways related development' or 'alteration of highways related development'. It follows that a development may amount to a single NSIP within section 22 even if (1) it contains elements of construction, alteration and improvement; and even if (2) those different elements are sufficient in their own right to qualify the development as an NSIP.
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- 1.2.11 This approach is also consistent with the scheme of sections 31, 14 and 22 of PA 2008. Pursuant to section 31, development consent is required for development that forms part of a NSIP, even if that development would not, on its own, be a NSIP. For example, if the construction of the section between Feering and Marks Tey did not satisfy section 22(1)(a), it would still require development consent pursuant to section 31 as part of the NSIP. It would be absurd to take a different approach where the construction of the section between Feering and Marks Tey does satisfy section 22(1)(a). There remains a single NSIP, even when the construction is of a sufficient size to satisfy section 22(1)(a).
- 1.2.12 All the aspects of the A12 scheme apart from the DCO sought in respect of the gas main diversion either involve construction of a highway, alteration of a highway or improvement of a highway. All aspects of the proposed scheme comprise a single project: consent is not sought for any part of the scheme separate from any other part. Either the whole scheme is to be permitted or none of it.
- 1.2.13 MIAG's submission fails to recognise the clear wording of PA 2008, which can only reasonably be construed as meaning that a NSIP can consist of highway related development which includes any, some or all of the elements in section 22(1). The Planning Inspectorate was thus correct to accept the DCO on the basis that it properly seeks consent for a single project.
- 1.2.14 The reason why the Cadent Gas pipeline adjacent to the A12 scheme has been treated as a separate NSIP is because the pipeline application is referred to a different Secretary of State and is subject to a different National Policy Statement, the Gas Main diversion is addressed on point 5.6 of this document.

1.3 Design Changes

- 1.3.1 The Applicant submitted a change application to the Examining Authority on the 30 May 2023 (the Change Application), which contained details of six proposed changes to the DCO Application. The details of all proposed changes are provided in the Change Application. This document provides a high-level summary of each proposed changes.
- 1.3.2 The Applicant noted that the need for the changes to the proposed scheme is a result of a variety of factors such as requests from Interested Parties, stakeholder feedback and the identification of opportunities to further reduce the impacts of the proposed scheme.
- 1.3.3 The change application was accepted by the Examining Authority on the 9 June 2023 accepting all proposed changes into the Examination of the DCO Application. These are detailed in the letter of the Examining Authority's Response to Changes [PD-017]. Following this, the Applicant made all necessary updates to its DCO Application documents and submitted the revised documents at Deadline 6.
- 1.3.4 In summary, the proposed changes sought by the Applicant are:
- Re-design of the proposed north-bound on-slip road at Junction 19;

- The exclusion of the proposed Anglian Water pumping station from land proposed for compulsory acquisition at Hatfield Peverel;
- Changes to the provision of proposed replacement land at Whetmead, plus additional consequential changes to reflect a change of ownership for open space in the Witham area that occurred subsequent to the submission of the DCO application;
- Changes to the proposed drainage works associated with proposed works along the B1023 Kelvedon Road at Inworth;
- Removal of the proposed segregated left turn lane at proposed Junction 24/Inworth Road B1023; and
- Removal of the proposed signalised crossroads and partial signalisation of the existing roundabout at Junction 25/A120.

1.4 Consultation Processes

- 1.4.1 The Applicant has carried out adequate pre-application consultation in accordance with the provisions set out in Section 42, Section 47 and Section 48 of PA 2008. All host authorities (Essex County Council, Braintree District Council, Chelmsford City Council, Colchester City Council and Maldon District Council) confirmed the Applicant had consulted adequately.
- 1.4.2 On the 12 September 2022, the Planning Inspectorate decided to accept the application for Examination. As a matter of law, the Planning Inspectorate could only accept the application if it were satisfied that the Applicant had complied with Chapter 2 of Part 5 (pre-application procedure) (see s55(2)(e)) of PA 2008.
- 1.4.3 MIAG, have made criticisms of the Applicant's consultation with some criticisms claiming that the Applicant has not complied with The Gunning Principles. The Applicant disagrees with this claim and can confirm that all four Gunning Principles have been met. These are:
- Proposals are still at a formative stage.
 - There is sufficient information to give 'intelligent consideration'
 - There is adequate time for consideration and response
 - 'Conscientious consideration' must be given to the consultation responses before a decision is made.
- 1.4.4 The Applicant has also carried out a statutory, and a number of non-statutory consultations, each of which have been held for a minimum of 28 days, as set out in the Statement of Community Consultation, giving adequate time for consideration and response. The Consultation Report [APP-045] demonstrates how consideration was given to the consultation responses before a decision was made. At each stage of consultation, the proposals have been in a formative stage, with the responses to the Statutory Consultation in July 2021 forming a number of the proposed changes presented at the Supplementary Consultation in November 2021.
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- 1.4.5 Further detail on the consultation undertaken for the proposed scheme is provided in Section 2 of this Closing Statement 'Consultation'.

1.5 Structure of the Closing Statement

- 1.5.1 This Closing Statement is structured as follows:

Section 2 – Consultation

This section details the consultation process that was undertaken on the proposed scheme.

Section 3 – Conformity with the National Networks National Policy Statement (NNNPS)

This section outlines how the proposed scheme complies with the NNNPS.

Section 4 – Need for and Benefits of the Proposed Scheme

This section explains why the proposed scheme is needed and outlines its benefits with reference to relevant policy, legislation and guidance.

Section 5 – Alternatives

This section details the alternative route options and junction placements that were considered for the proposed scheme and outlines the justification for why these alternatives were discounted.

Section 6 – Traffic and Transport and Walking, Cycling and Horse-riding provision

This section considers the traffic and transport impacts of the proposed scheme and sets out the Walking, Cycling and Horse-riding provision made by the proposed scheme.

Section 7 – Environmental Matters

This section outlines the principal environmental considerations of the proposed scheme and the approach taken to its environmental appraisal.

Section 8 – Environmental Management Plan (EMP), Register of Environmental Actions and Commitments (REAC) and Project Design Principles (PDP)

This section outlines the principal methods for the delivery of environmental mitigation under the proposed scheme.

Section 9 – Case and Justification for Compulsory Acquisition

This section explains the Applicant's case and justification for requiring the compulsory acquisition of land and rights, and for the temporary possession of land, alongside delivery and funding.

1.6 Continued Engagement Post-Examination

- 1.6.1 As the Examination of the proposed scheme comes to a close and the scheme moves into a new post-Examination phase, the Applicant is committed to ongoing engagement with all stakeholders, including the local authorities and statutory environmental bodies. The Applicant believes that the proposed scheme will continue to benefit from the established strong working relationships that exist between the Applicant and its stakeholders being maintained and strengthened.
- 1.6.2 The Applicant recognises the importance of continuing to progress matters post-Examination including, but not limited to, the emerging detailed designs for the proposed scheme and the various matters to be settled pursuant to the Requirements in Schedule 2 of the DCO and under the EMP, including the development of the Second Iteration EMP.
- 1.6.3 Indeed, to highlight the Applicant's commitment to this, it has in fact already established several technical working groups with Essex County Council which include regular detailed design meetings with the Applicant's delivery partners.

1.7 Key Document References

- 1.7.1 The Applicant has set out key document references in Table 1.1 below. This includes the shorthand document references used throughout this Closing Statement, along with corresponding full document titles and Examination Library references.
- 1.7.2 The Applicant also refers to its Errata Report submitted at Deadline 8. Insofar as the Errata Report applies to any of the documents in Table 1.1, the Errata Report and the document in question need to be read together.

Table 1.1 Key Document References

Document Shorthand	Full Document Name	Examination Library Reference
Maldon Road and Hatfield Peverel Bypass Technical Report	6.3 Environmental Statement - Appendix 3.2: Maldon Road and Hatfield Peverel Bypass Technical Report	APP-094
Junction 24, Inworth Road and Community Bypass Technical Report	6.3 Environmental Statement - Appendix 3.3: Junction 24, Inworth Road and Community Bypass Technical Report	APP-095
B1137 Main Road, Boreham, Technical Note	B1137 Main Road, Boreham, Technical Note	REP3-034
Case for the Scheme	7.1 Case for the Scheme	APP-249
Appendix A National Networks National Policy Statement Accordance Table	7.1 Case for the Scheme: Appendix A National Networks National Policy Statement Accordance Table	APP-250
Appendices B, C, D, E: NNNPS and Energy Accordance Tables	7.1 Case for the Scheme - Appendices B, C, D, E: NNNPS and Energy Accordance Tables	APP-251
Transport Assessment	7.2 Transport Assessment	APP-253
Appendix A: Junction Modelling Results Summary	7.2 Transport Assessment - Appendix A: Junction Modelling Results Summary	APP-254
Appendix C: Traffic Flow Diagrams – Communities and A12 Mainline	7.2 Transport Assessment - Appendix C: Traffic Flow Diagrams – Communities and A12 Mainline	APP-256
Combined Modelling and Appraisal Report	7.3 Combined Modelling and Appraisal Report	APP-261
Environmental Management Plan	6.5 First Iteration Environmental Management Plan (Clean) - Rev 2	REP4-022
Register of Environmental Actions and Commitments (REAC)	6.5 First Iteration Environmental Management Plan Appendix A: Register of Environmental Actions and Commitments (REAC) - (Clean) - Rev 4	REP7-015

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Document Shorthand	Full Document Name	Examination Library Reference
A12 Technical Note on De-trunking Proposals	9.43 A12 Technical Note on De-trunking Proposals	REP4-057
Appendix G: Draft National Networks National Policy Statement Accordance Table	9.48 Appendix G: Draft National Networks National Policy Statement Accordance Table - Rev 1	REP4-062
Technical Note Gershwin Boulevard Bridge	9.26 Technical Note Gershwin Boulevard Bridge	REP3-011
dDCO	3.1 Draft DCO (Clean) - Rev 8	REP7-005
Appendix H & I Energy NPS Accordance Tables	9.58 Appendix H & I Energy NPS Accordance Tables	REP5-017
Gershwin Boulevard Issue Summary Note	9.66 Gershwin Boulevard Issue Summary Note	REP6-094

2 Consultation

2.1 Overview

2.1.1 The Applicant has carried out both statutory and non-statutory consultations in regard to the A12 Chelmsford to A120 widening scheme. This includes the following main consultations:

- Non-Statutory options consultation junctions 19 – 25 (23 January 2017 – 3 March 2017)
- Non-Statutory options consultation junctions 23 – 25 (21 October 2019 – 1 December 2019)
- Statutory consultation (22 June 2021 – 16 August 2021)
- Supplementary consultation (9 November 2021 – 19 December 2021)
- DCO change application consultation (13 April 2023 – 14 May 2023)

2.1.2 The above consultations have been complemented by a programme of engagement with parish, district, city and county councils.

2.2 Non-Statutory options consultation junctions 19 – 25 (23 January 2017 – 3 March 2017)

2.2.1 As outlined in Chapter 2.2 of the Consultation Report [APP-045], the options consultation took place for 40 days and presented four route options. The most supported option was route 2 and this was selected as the preferred route for the scheme.

2.2.2 The consultation was complemented by seven in-person events as well as nine pick up points and a letter drop to approximately 14,000 local residents, businesses and statutory stakeholders. It was also advertised via posters and local media.

2.2.3 907 responses were received. These were captured with the Applicant's position on those responses and were published in the 2017 Report on Public Consultation.

2.3 Non-Statutory Options Consultation: Junctions 23 – 25 (21 October 2019 – 1 December 2019)

2.3.1 As outlined in Chapter 2.5 of the Consultation Report [APP-045], a further consultation took place in 2019 which ran for 42 days. The consultation presented further route options for the section of the route between Junction 23 (Kelvedon south) and Junction 25 (Marks Tey). This consultation considered the proposed Colchester Braintree Borders Garden Community. The Applicant confirmed that if the garden community did not go ahead, neither would the presented options. The garden community did not go ahead, so neither did the options.

- 2.3.2 The consultation ran alongside the preferred route announcement for Junctions 19 (Boreham interchange) and 23 (Kelvedon south) and was complemented by eight in-person events as well as thirteen pick up points and a letter drop to approximately 20,000 local residents, businesses and statutory stakeholders.
- 2.3.3 822 responses were received. These were captured, alongside the Applicant's position on those responses, and were published in the 2019 Report on Public Consultation.

2.4 Statement of Community Consultation for Statutory Consultation

- 2.4.1 A Statement of Community Consultation (SoCC) was prepared, as prescribed by Section 47 of the PA 2008, by the Applicant setting out how it proposed to consult people living near the land that would be affected by the scheme. The SoCC can be found in Annex F of the Consultation Report [APP-052].
- 2.4.2 The Applicant's preparation of the SoCC took into account the Department of Communities and Local Government's Guidance on the pre-application process (DCLG, 2015), and advice and guidance from the Planning Inspectorate.
- 2.4.3 The Applicant consulted with Essex County Council, as the lead highway authority, and the local planning authorities, Braintree District Council, Chelmsford City Council, Colchester City Council and Maldon District Council on the content of the SoCC.
- 2.4.4 The final SoCC was made available at locations along the proposed route, as prescribed by Section 47(6) of the PA 2008, alongside statutory consultation materials.
- 2.4.5 Although written for the statutory consultation, all following consultations complied with the SoCC.

2.5 Statutory Consultation (22 June 2021 – 16 August 2021)

- 2.5.1 In accordance with the SoCC, and as outlined in Chapter 5 of the Consultation Report [APP-045] the statutory consultation ran for 55 days. It was complemented by six in-person events and six online events, alongside a virtual room which was provided. Approximately 33,000 local residents and businesses were written to alongside all statutory stakeholders. Further advertising took place through social media, and local and national press.
- 2.5.2 794 responses were received, and these were captured alongside the Applicant's position on those responses in Annex N of the Consultation Report [APP-062].

2.6 Supplementary Consultation (9 November 2021 – 19 December 2021)

- 2.6.1 As outlined in Chapter 6 of the Consultation Report [APP-045] the Supplementary Consultation ran for 41 days and presented several changes to the design presented at the statutory consultation. The changes included responding to feedback the Applicant received at the Statutory Consultation
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such as the arrangement of Junction 21 and the change to access from Easthorpe Road to the existing A12.

- 2.6.2 It was complemented by three in-person events and three online events, alongside a virtual exhibition which was provided. Approximately 33,000 local residents and businesses were written to alongside all statutory stakeholders. Further advertising took place through social media and press.
- 2.6.3 384 responses were received, and these were captured alongside the Applicant's position on those responses in Annex N of the Consultation Report [APP-062].

2.7 Other Consultations

- 2.7.1 In addition, the Applicant ran two targeted consultations as a result of changes to the proposed scheme. These were the Targeted Consultation (11 February 2022 – 18 March 2022) and the Landowner Consultation (13 May 2022 – 12 June 2022).
- 2.7.2 Chapter 6.6 of the Consultation Report [APP-045] outlined the Targeted Consultation and Chapter 8 of the Consultation Report [APP-045] outline the Landowner Consultation.
- 2.7.3 53 responses were received to these targeted consultations, and these were captured alongside the Applicant's position on those responses in Annex N of the Consultation Report [APP-062].

2.8 Adequacy of Consultation

- 2.8.1 Following the submission of the application for development consent, all local and neighbouring authorities were asked by the Examining Authority whether they felt the Applicant had consulted adequately. All the host authorities (Essex County Council, Braintree District Council, Chelmsford City Council, Colchester City Council and Maldon District Council) stated the Applicant had carried out adequate pre-application consultation in accordance with the provisions set out in Section 42, Section 47 and Section 48 of the PA 2008. Five of the seven neighbouring authorities also confirmed the Applicant had consulted adequately, with the remaining two providing no comment.

2.9 Acceptance

- 2.9.1 On the 12 September 2022, the Planning Inspectorate decided to accept the application for Examination. As a matter of law, the Planning Inspectorate could only accept the application if it were satisfied that the Applicant had complied with Chapter 2 of Part 5 (pre-application procedure) (see s55(2)(e) of PA 2008). Thus, the application could only have been accepted if the consultation process with the local community accorded with the statutory requirements. The planning inspectorate concluded that the Applicant has complied with Chapter 2 of Part 5 of PA 2008 and thus that the statutory consultation requirements had been met.

DCO Change Application Consultation (13 April 2023 – 14 May 2023)

- 2.9.2 As outlined in Chapter 1.3 of the DCO Change Application Consultation Report [AS-077], the DCO Change Application Consultation ran for 32 days and presented six changes to the proposed scheme.
- 2.9.3 It was complemented by three online events and approximately 250 local residents and businesses were written to alongside all statutory stakeholders and Interested Parties for whom the Applicant held contact details. Further advertising took place through social media, and local and national press.
- 2.9.4 28 responses were received, and these were captured alongside the Applicant's position on those responses in Annex F of the DCO Change Application Consultation Report [AS-075].

2.10 Complaints about the Applicant's consultation

- 2.10.1 MIAG has made a number of broad criticisms of the Applicant's consultation. These criticisms are all unfounded.
- 2.10.2 The requirements for legally adequate consultation are well established. Consultation must be undertaken at a time when proposals are still at a formative stage; it must include sufficient reasons for particular proposals to allow those consulted to give intelligent consideration and an intelligent response; adequate time must be given for this purpose; and the product of consultation must be conscientiously taken into account when the ultimate decision is taken: see *R. v North and East Devon Health Authority, Ex parte Coughlan* [2001] QB 213 at [108].
- 2.10.3 The Applicant's consultation, as explained above and detailed more fully in APP-045 and APP-052, had been adequate and lawful when assessed against this standard.
- 2.10.4 MIAG have made broad-brush criticisms of the consultation, without identifying precise deficiencies, much less, deficiencies which show a failure to undertake adequate consultation.
- 2.10.5 In essence, MIAG's criticisms are an extension of their argument concerning the Main Alternative. In broad terms, two issues are raised. First, MIAG allege a failure to consider the Main Alternative. It is difficult to see how this is a consultation failure, but in any event, it is clear the Main Alternative has been considered by the Applicant: see, in particular, APP-095. Secondly, MIAG allege "confirmation bias". This allegation is wholly without merit: the assessment of the Main Alternative has been fair and accurate. MIAG have not identified anything in the Applicant's assessment which indicates confirmation bias; rather, MIAG have simply disagreed with parts of that assessment. Such disagreement does not amount to consultation bias.
- 2.10.6 It follows that the criticisms of the Applicant's consultation is unjustified and erroneous.

Conclusion

- 2.10.7 It follows that the consultation process followed by the Applicant has been full and fair. It has complied with the statutory requirements.

3 Conformity with NNNPS and Energy NPSs

3.1 Conformity with Relevant NPSs

- 3.1.1 Section 104(2) of the Planning Act 2008 (PA 2008) states that the relevant Secretary of State must have regard to the relevant National Policy Statement (NPS), any local impact reports produced by host authorities, prescribed matters and any other matters that they consider are both important and relevant to the decision.
- 3.1.2 The proposed scheme comprises not only improvements to the A12 and the widening to three lanes, but also, for the highway element to be delivered, it is necessary to divert a gas main owned and operated by Cadent Gas Limited. Therefore, the relevant NPS are the NNNPS (Department for Transport (DfT), 2014) for the highway element and the NPS for Energy (EN-1) and the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN4) (Department of Energy and Climate Change, 2011a and 2011b) in relation to the works required for the diversion of the gas main (the Witham South to Little Braxted Gas Governor High Pressure Gas Main (herein referred to as the "Gas Main Diversion"). The proposed Gas Main Diversion meets the criteria to be considered an NSIP in its own right under section 20 of the Planning Act 2008.
- 3.1.3 The Case for the Scheme: Appendix A National Networks National Policy Statement Accordance Table [APP-250] contains an assessment of the proposed scheme's conformity with the NNNPS, as detailed on a paragraph-by-paragraph basis within the NNNPS accordance table. The conclusions drawn from this assessment are that the proposed scheme is in conformity with all relevant policies of the NNNPS.

3.2 Draft NNNPS and Energy NPSs

- 3.2.1 The draft revised NNNPS (the 'draft NNNPS') was published by the Department for Transport on 14 March 2023, for consultation, with the close of consultation on 6 June 2023. As the proposed scheme was accepted for examination before the designation of the 2023 amendments, the 2015 NNNPS will remain in force in its entirety and have affect as per paragraphs 1.16 of the draft NNNPS. However, it is noted by the Applicant that the draft NNNPS is potentially capable of being important and a relevant consideration in the decision making process and therefore the Applicant has produced and submitted Case for the Scheme: Appendix G Draft National Networks National Policy Statement Accordance Table [REP4-062] at Deadline 4 to assist the Secretary of State in considering the extent to which they are relevant.
- 3.2.2 The Case for the Scheme - Appendices B, C, D, E: NNNPS and Energy Accordance Tables [APP-251] contain an assessment of the proposed scheme's conformity with the EN-1, EN-4, draft EN-1 (2022) and draft EN-4 (2022), as detailed on a paragraph-by-paragraph basis within the accordance tables. The conclusions drawn from this assessment are that the proposed scheme is in conformity with all relevant policies of the relevant energy and gas supply NPS'.

- 3.2.3 In addition to the 2022 consultation undertaken, the draft revised Energy (EN-1) and Gas Supply National Policy Statement (EN-4) were published by the Department of Energy Security and Net Zero in March 2023 for consultation, with the close of consultation in June 2023. As the proposed scheme was accepted for examination before the designation of the 2023 amendments, the 2011 energy NPSs will remain in force in its entirety and have affect as per the Consultation Planning for New Energy Infrastructure from the Department for Energy Security and Net Zero. It is noted by the Applicant that the draft Energy NPSs are potentially capable of being important and relevant considerations in the decision-making process and therefore has produced and submitted Case for the Scheme - Appendices H & I - Draft Energy & Gas Supply Accordance Tables [REP5-017] at Deadline 5 to assist the Secretary of State in considering the extent to which they are relevant.

3.3 Conclusion

- 3.3.1 The Applicant considers that none of the accepted changes under the Change Application has a material impact on the conclusions reached on the Case for the Scheme: Appendix A National Networks National Policy Statement Accordance Table [APP-250] and Case for the Scheme - Appendices B, C, D, E: NNNPS and Energy Accordance Tables [APP-251] nor the Case for the Scheme: Appendix G Draft National Networks National Policy Statement Accordance Table [REP4-062] and Case for the Scheme - Appendices H & I - Draft Energy & Gas Supply Accordance Tables [REP5-017].
- 3.3.2 There is no policy or legislative reason that precludes the acceptability of the proposed scheme. There is a clear and justified case for the DCO to be made as set out in Chapter 2 of the Environmental Statement [APP-069] the need for the proposed scheme in the Case for the Scheme [APP-249]. On this basis and in accordance with section 104 of the PA 2008, the Applicant invites the Examining Authority (ExA) to recommend that the DCO be made and the Secretary of State to so make it.
- 3.3.3 Section 6 (Traffic and Transport) and Section 7 (Environmental Matters) will demonstrate how traffic and environment accords with the NNNPS on their specific objectives.

4 Needs for and Benefits of Proposed Scheme

4.1 A12 improvements

Regional growth and network resilience

- 4.1.1 The A12 is an important economic link in Essex and across the east of England. It provides the main south-west/north-east route through Essex and Suffolk, connecting Ipswich to London and to the M25. In addition, the A12 is an important commuter route between Chelmsford and Colchester, but current congestion often affects drivers' average speed during the morning commute, which has an average speed of 40mph compared to the speed limit of 70mph. All the sections of the A12 between Junctions 19 to 25 are in the worst performing 10% of the Strategic Road Network (SRN) in the east of England.
- 4.1.2 The A12 has previously been improved in stages and is now a dual carriageway for its entire length between the M25 and A14. However, this has resulted in a road constructed to varying standards with sections that are two lane dual carriageway and three lane dual carriageway, and locations where at-grade accesses to residential, commercial and agricultural properties have been retained. Due to variability in the standard of the corridor and limited suitable diversion routes, the A12 is vulnerable to collisions and incidents, which can cause significant disruption over a wide area.
- 4.1.3 The proposed scheme has been promoted for many years and is identified as a national priority in the National Infrastructure Delivery Plan (2016), East of England Route Strategy (2017), various National Highways plans and the Department for Transport's Road Investment Strategy plans for 2015-2020 (RIS1) and 2020-2025 (RIS2). This is due to the proposed scheme meeting a national need to increase the capacity of the SRN, improve the safe operation of the network for all users, improve the freight connections to Felixstowe, Harwich and Ipswich ports, and because the proposed scheme would be fundamental to provide the necessary highway capacity to support the traffic growth generated by the wider housing and employment development plans for Essex.
- 4.1.4 Significant housing and business growth is planned in the area over the coming years. Without further interventions, the issues of congestion, road safety and impact on the economy as described above are anticipated to worsen in the future, exacerbated by forecast traffic growth both locally and strategically. The high volume of traffic using the A12 corridor, combined with the forecast growth in traffic, is likely to result in a greater level of conflict between highway users, with the potential to result in a greater number of incidents. In addition, without intervention, network resilience is likely to reduce as traffic volumes increase, resulting in a network less able to cope with incidents.

Traffic and safety

- 4.1.5 The Case for the Scheme [APP-249] details the purpose of the proposed scheme in addressing these longstanding issues of connectivity, congestion, reliability and safety. The benefits have been identified as a result of technical

assessments set out in the application, including the Transport Assessment [APP-253] and Transport Statement Addendum [AS-071], the Combined Modelling and Appraisal Report [APP-261], the Environmental Statement [APP-068 to APP-085] and Environmental Statement Addendum [AS-098]. The proposed scheme is expected to deliver significant benefits, including around improved safety, faster and more reliable journeys by road, and improved facilities for walkers, cyclists, horse riders and public transport users by providing better connectivity and safer more enjoyable journeys. An economic assessment of benefits which can be monetised found that the proposed scheme would deliver benefits which would comfortably exceed the cost of the proposed scheme.

- 4.1.6 In particular, with the proposed scheme in place (the 'Do Something scenario'), traffic is expected to reduce significantly on the two sections of the existing A12 that will be bypassed as part of the proposed scheme (Rivenhall End and between Junction 24 and Junction 25). Traffic levels would increase on the A12 between Junction 19 and Junction 25, as well as on the sections of the A12 on either side of the proposed scheme. This is because traffic would re-route onto the A12 away from other less suitable routes and because the increase in capacity on the proposed A12 would result in a general increase in trips.
- 4.1.7 Traffic is generally expected to reduce on local roads, particularly on The Street in Hatfield Peverel and through Kelvedon and Feering. Some roads leading into the A12 junctions, such as the B1023 north of Tiptree, the B1137 through Boreham and the B1408 at Copford, would have an increase in traffic. Some communities such as Boreham, Copford, Messing, Tiptree and Inworth would see an increase in traffic. Further information on the traffic changes on local roads is provided in the Appendix C of the Transport Assessment [APP-256]. Further information on proposed mitigation in some of these locations is provided in the Section 6 (Traffic and Transport) of this Closing Statement.
- 4.1.8 The proposed scheme is predicted to provide a significant improvement in journey times compared to the Do Minimum scenario. The journey times for peak hour trips on the A12 between Junction 19 and Junction 25 are predicted to have a reduction of over nine minutes in journey time towards Colchester in the evening peak (from around 28 minutes to around 18 minutes) and a reduction of nearly seven minutes in journey times towards Chelmsford in the morning peak (from around 22 minutes to around 15 minutes). This analysis compares predicted journey times in 2042 with the proposed scheme against predicted journey times in 2042 if the proposed scheme was not built.
- 4.1.9 The junctions along the A12 are also predicted to operate significantly better with the proposed scheme than they would without the proposed scheme. The results of the junction modelling are summarised in Appendix A of the Transport Assessment [APP-254]. That report also describes the impact of the proposed scheme on local road junctions, which are expected to operate either the same or better as they would without the proposed scheme.
- 4.1.10 The proposed scheme would apply a consistent standard of design along the route, with a three-lane all-purpose road throughout and the removal of direct accesses onto the road, reducing risks to road users, road workers and residents. The number of accidents and their associated costs was estimated
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for the situations both with and without the proposed scheme. This is shown in Section 6.3 of the Case for the Scheme. Over the 60-year appraisal period, there would be two fewer fatalities, 200 fewer serious and 496 more slight casualties. The monetised benefit from improved safety is £13.1 million.

Walking Cycling and Horse riding provision

- 4.1.11 The impact of the proposed scheme on existing public rights of way (PRoW) has been assessed, including consideration of those locations where there is severance (including existing severance). Where the proposed scheme would directly affect existing PRoWs, such as footpaths, bridleways and existing cycle routes, provision has been made to ensure that, once the proposed scheme is open to traffic, the route remains open. This is through construction of overbridges or, where a direct connection is not feasible, the provision has been made for alternative routes using suitable diversions.
- 4.1.12 Proposals for WCH provision have been developed in discussion with a broad range of stakeholder groups and with local authorities throughout the development of the proposed scheme. The proposed improvements include a total of 30km of new and/or improved WCH facilities, six road bridges with walking and cycling provision, further details on WCH proposals can be found in Section 6.7 (Walking, Cycling and Horse-Riding) of this Closing Statement. The proposals are shown on the Streets, Rights of Way and Access Plans [REP6-013 - REP6-014] and the Design Access Statement section 5 [APP-268] and include the following:
- Separate walking and cycling links across four proposed major junctions, enabling users to bypass slip road junctions, including a section of the national cycle route affected by the proposed scheme.
 - Provision of PRoW bridge connections, either as separate walking and cycling facilities or in conjunction with overbridges or side roads.
 - Provision of paths to link groups of PRoWs to proposed bridge facilities.
 - Provision of new toucan crossing facilities (crossings that allow both walkers and cyclists to cross).
 - Improvements to existing shared walking/cycling facilities.
 - Improved walking and cycling connections across sections of the existing A12 to be bypassed by the proposed scheme, and reintroduction of bus stopping facilities.
- 4.1.13 For safety reasons, WCH, horse-drawn carriages and slow-moving vehicles will be prohibited from using the A12 mainline between junctions 21 and 25 (Witham South interchange to Marks Tey interchange). These user groups will be diverted to safe alternative routes, including de-trunked sections of the existing A12, once realigned sections have been implemented. This is consistent with the specific requirements of the Design Manual for Roads and Bridges (DMRB) GD 300 design standard (Highways England, 2020e).
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- 4.1.14 The proposed scheme will comply with the Equality Act 2010 requirements by accommodating visually impaired and mobility impaired users by providing ramps as opposed to stairs in structures, where practicable and the use of tactile paving.
- 4.1.15 The potential effects of the proposed scheme on WCH are assessed in Chapter 13: Population and human health, of the Environmental Statement [APP-080] - see in particular Appendix 13.3 of the Environmental Statement [APP-155]). Whilst there will be adverse effects during the construction of the proposed scheme, once in operation the significance of effect upon walking, cycling and horse riding is assessed to be moderate beneficial mainly due to overall improved connectivity. The construction management process will seek to minimise the impact on walking, cycling and horse riding during the construction period.
- 4.1.16 Further detail on the proposed scheme's WCH provision can be found in Section 6 below.

Scheme Economic Case

- 4.1.17 Road users experience day-to-day variability in travel times due to high congestion, and delays from accidents and other incidents. The additional lane offered by the proposed scheme, and the presence of improved technology, would result in lower congestion and an ability to deal with incidents effectively. This improvement in journey time reliability would result in benefits of £180.7 million.
- 4.1.18 The economic benefits of the scheme that can be monetised also demonstrate significant benefits. As well as delivering the journey time savings referred to above, once the proposed scheme is open, some other smaller impacts on road users have also been considered:
- Disbenefits for road users as they experience some additional delays while the proposed scheme is being constructed.
 - Benefits from a reduction in road user delay during future road maintenance (reflecting the 'maintenance holiday' once the proposed scheme is newly built, and the additional traffic management flexibility offered by an extra lane).
 - Disbenefits from increases in vehicle operating costs, as vehicles on average would travel faster and further once the proposed scheme opens.
- 4.1.19 In total, these Economic Efficiency benefits are worth £434.8 million. Split into three different types of journey purpose, this gives:
- Consumer users (commuting): £78.3 million.
 - Consumer users (other): £121.1 million.
 - Business users and providers: £235.5 million.
- 4.1.20 The proposed scheme will also lead to an increase in the tax revenues received by the Government over the 60 year appraisal timeframe of some £29.1 million.
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- 4.1.21 As well as the direct economic impacts described above, the proposed scheme would also lead to productivity improvements in the wider economy. These wider economic impacts would provide overall benefits of £253.9 million.
- 4.1.22 The benefits described above can be summed to give an overall value, known as the Present Value of Benefits, of £775.4 million.
- 4.1.23 Comparing the costs and benefits of the proposed scheme gives a Benefit to Cost Ratio (BCR). As is standard in transport economic appraisal, two different BCRs are reported. An 'Initial BCR' that excludes benefits from wider economic impacts and journey time reliability, and an 'Adjusted BCR' that includes all monetised benefits. The Initial BCR compares a Present Value of Benefits (£340.7 million) with the Present Value of Costs (£452.1 million) to give an Initial BCR of 0.8. The Adjusted BCR compares a Present Value of Benefits (£775.4 million) with the Present Value of Costs (£452.1 million) to give an Adjusted BCR of 1.7. Thus, overall, it can be seen that the scheme represents value for money.
- 4.1.24 Section 2 of the Case for the Scheme [APP-249] provides a more detailed overview of the national and local need for the proposed scheme, and sections 5 and 6 of that document detail the transport and economic benefits of the proposed scheme.

4.2 Need to divert the gas main

- 4.2.1 The existing gas pipeline to be diverted as part of Work No. U69, will be treated as an NSIP as it meets the thresholds set out in section 20 of the Planning Act 2008. The existing pipeline runs typically parallel to and close to the existing A12 alignment from approximate chainage 19+300 (to the east of Dengie Farm, as shown on sheet 7 of the General Arrangement Plans [REP6-019] and the Works Pans – Utility Diversions [REP6-006]), to approximate chainage 21+800 (east of Whetmead Local Nature Reserve (LNR), as shown on sheet 9 of the General Arrangement Plans [REP6-019] and the Works Pans – Utility Diversions [REP6-006]). Sections 4.5 and 4.6 of the Case for the Scheme [APP-249] provide further information on the gas main diversion, including the reason why the diversion is considered a NSIP in its own right.
- 4.2.2 Due to the proximity and nature of both the permanent works to widen the A12 in the vicinity of the gas pipeline between the chainages mentioned above, and the temporary works associated with the widening, it is not feasible to keep the gas main in its current location. The extent of the permanent works to widen the existing A12, requiring a combination of earthworks and retaining walls, are too close to the gas main. The scale of earthworks operation, requiring vibration to compact the materials, and the piling activities to construct the retaining walls would not be safe or permissible were the gas main to remain in situ.
- 4.2.3 Therefore, it is essential to divert the gas main to realise the benefits of the A12 Chelmsford to A120 Widening scheme.
- 4.2.4 Further detail on the gas main diversion is provided in Section 5 (Alternatives) and Section 7 (Environmental Matters) below.

5 Alternatives

5.1 General Assessment of Scheme Alternatives

- 5.1.1 The route selection process for the proposed scheme has followed a detailed, careful and proportionate options appraisal process. The options appraisal undertaken followed the Transport Analysis Guidance and Project Control Framework processes normally used to assess road schemes and comprised a detailed and comprehensive process taking on board a broad range of considerations including environment, policy, engineering and consultation responses.
- 5.1.2 The NNNPS outlines the approach required in respect of alternatives and, in short, sets out that:
- (a) Applicants should comply with all legal requirements and any policy requirements set out in the NNNPS on the assessment of alternatives including in respect of specific policy tests, requirements of the Environmental Impact Assessment (EIA) Directive and other legal requirements for the consideration of alternatives (see paragraph 4.26 of the NNNPS)
 - (b) The project should be subject to an options appraisal and the decision-maker must be satisfied that such a process has been undertaken (see paragraph 4.27 of the NNNPS).
- 5.1.3 Regulation 14 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (the EIA Regulations) requires an environmental statement to include at least *'a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'*.
- 5.1.4 In accordance with Regulation 14 and Schedule 4 of the EIA Regulations, and the policy requirements of the NNNPS, Chapter 3: Assessment of alternatives of the Environmental Statement [APP-070] outlines the alternative design options that were considered during the development of the proposed scheme, which is summarised below.
- 5.1.5 Section 3.2 of Chapter 3 of the Environmental Statement [APP-070] provides detail on the scheme options considered at each design stage, the preferred option, and the environmental considerations in coming to this decision. An initial long list of 23 options was considered that could meet the overall objective of improving the A12 between junctions 19 (Boreham interchange) and 25 (Marks Tey interchange). It included 15 highways improvement options, five public transport options and three collision reduction and incident management measures. Four options were short-listed and developed to present at a public consultation, as follows:
- Option 1 – online widening throughout and provision of a local access road to provide alternative access to existing single tier junctions

- Option 2 – online widening with two offline bypasses between junctions 22 and 23 and between junctions 24 and 25
- Option 3 – online widening with an offline bypass between junctions 22 and 23
- Option 4 – online widening with an offline bypass between junctions 24 and 25.

- 5.1.6 The first consultation took place at the options assessment stage during Spring 2017 where the Applicant ask for feedback from the community and stakeholders on four options for online, offline and hybrid widening of the A12. The main feedback was support for Option 2 and this is route presented for development consent. Respondents also suggested that all junctions had some problems that needed to be addressed. There was support for merging junctions 20A and 20B, and some key statutory stakeholders suggested the project consider linking junction 24 to the B1023 or relocating it. There were also concerns about traffic on The Street in Hatfield Peverel, and traffic on Kelvedon High Street, both communities sandwiched by a partial movement junction. This feedback was captured in the 2017 consultation report. The brochure and the report can be found in 5.2 Consultation Report - Annex A1: Option Consultation Materials [APP-046].
- 5.1.7 Through a process of technical, economic and environmental assessments, and taking onboard feedback from the public consultation, Option 2 was selected as the preferred option. This was because it was the most popular option from the non-statutory public consultation, would deliver the greatest capacity, and would have design advantages over the other options. In comparison, the other options would not have the same safety benefits and would not handle traffic and congestion as well as Option 2 due to the reduced proportion of new offline road being provided.
- 5.1.8 A refined Option 2 alignment was created to reduce its environmental impact, particularly to address impacts on the Rivenhall Long Mortuary Enclosure scheduled monument and the River Blackwater floodplain. For the refined Option 2, the length of the bypass between junctions 22 and 23 was reduced, re-joining the existing A12 at a point just east of Rivenhall End, thereby taking the alignment away from the scheduled monument and reducing potential development in the floodplain. The refined option would also result in reduced loss of Best and Most Versatile land and sterilisation of minerals compared to the original Option 2. Given the reduced environmental impact of the refined Option 2 compared to the original Option 2 alignment, a Preferred Route Announcement was made with the refined Option 2 as the preferred option.
- 5.1.9 Following the Preferred Route Announcement and throughout the preliminary design, the environmental assessment and scheme development considered design refinements and alternative ways of delivering the proposed scheme to avoid or reduce environmental impacts where practicable. This included, for example, changes to the scheme design (such as the horizontal and vertical alignment of the new road), construction methodology (including the location of construction compounds and borrow pits), and the type, location and extent of
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environmental mitigation. These considerations are detailed in Section 3.3 of Chapter 3: Assessment of alternatives of the Environmental Statement [APP-070].

- 5.1.10 In summary, the Applicant has conducted a robust, detailed and proportionate options appraisal and set out the reasons for the selection of the preferred option in Chapter 3: Assessment of alternatives of the Environmental Statement [APP-070]. Following the selection of the preferred option, alternative ways of delivering the proposed scheme have been considered. Environmental factors have been a key consideration throughout the option selection and preliminary design development. As such, the Applicant has undertaken an assessment of alternatives in compliance with the requirements of the NNNPS and EIA Regulations.
- 5.1.11 MIAG, in particular, alleges that there has been a failure to consider alternatives properly in relation to junction 24 including the option of a community bypass. This is demonstrably not the case.
- 5.1.12 The Applicant has responded to MIAG's concerns in the Applicant's Response to Open Floor Hearing 1 [REP1-009], Applicant's Response to Open Floor Hearing 2 [REP1-012] and Applicant's Comments on Information Received at Deadline 2 [REP3-015]. The Applicant produced the Junction 24, Inworth Road and Community Bypass Technical Report as part of the Environmental Statement [APP-095].
- 5.1.13 The Technical Report records the extensive work that has been carried out regarding the B1023, the proposed junction 24 and the surrounding area as part of the local roads strategy for National Highways' during the pre-application process of the A12 Chelmsford to A120 Widening Scheme. It captures and summarises the information contained within various existing technical notes produced documenting work undertaken on junction 24, the B1023 and the surrounding area.
- 5.1.14 The Technical Report summarises the history of the proposed junction 24 design development, the existing conditions on the B1023, and the traffic assessment and the projected increase in traffic on the B1023 associated with the A12 scheme. It describes the history of the community bypass concept, raised by MIAG as an alternative route from junction 24 to Tiptree.
- 5.1.15 The Technical Report sets out detailed assessments of the bypass options, including projected traffic and noise impacts of these throughout the wider area. Options for mitigation and improvement of the B1023 through localised interventions to cater for both the existing traffic and flooding issues and the projected increase in traffic are described, as well as the design principles underpinning these options. The Applicant has carefully conducted microsimulation traffic modelling of the traffic in this area to assess the traffic capacity and delays.
- 5.1.16 The Technical Report presents an assessment of the two community bypass options, including the Main Alternative put forward by MIAG (see section 5.3 on Inworth Bypass for further details), compared to the online localised interventions, across several criteria including land acquisition, environmental impact, constructability, safety, stakeholder feedback and cost. Applying these
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criteria, overall neither bypass option mitigated the forecast increase traffic as well as the proposed scheme.

- 5.1.17 As a result, it cannot reasonably be argued that there has been any failure to consider reasonable alternatives in respect of the options at junction 24. Further, it is to be noted that Essex County Council does not object to the proposed scheme as a result of a failure to assess alternatives at junction 24 nor has it presented a case which supports the Main Alternative suggested by MIAG.
- 5.1.18 The only reasonable conclusion is that the proposed scheme is fully justified in respect of the options appraisal for the proposals at junction 24.
- 5.1.19 Similarly, there have been submissions made regarding the potential to provide a bypass at the Maldon Road/The Street mini roundabout in Hatfield Peverel. Again, the Environmental Statement included a technical report, the Maldon Road and Hatfield Peverel Bypass Technical Report [APP-094], which examined all of the options and compared the best of these against the proposed scheme. This included a detailed traffic assessment of the impact of a potential bypass.
- 5.1.20 Several options for a bypass were investigated to determine the most preferred option to score against the current A12 junction 21 design. Following scoring, the preferred bypass option was then scored against the current Do Something junction 21 proposals, without a bypass.
- 5.1.21 While a bypass does offer benefits in some respects, there are also disbenefits in creating a new link road through rural countryside. In this respect the disbenefits of a link road were found to outweigh the benefits. Thus, a bypass option is not to be preferred. It is to be noted that this conclusion is similar to that reached in previous studies by Essex County Council in 2017, wherein they concluded that a bypass poses serious challenges to feasibility including the environmental impact on farmland, greenspace and environmentally sensitive land, and public acceptance of this impact.
- 5.1.22 Consideration of issues regarding other potential alternative designs for the scheme raised during the Examination are discussed below (e.g. the gas main diversion and open span bridges).
- 5.1.23 For these reasons, as explained below, the position is clear:
- 1) The statutory and policy requirements have been complied with in the documents submitted to the Examination. More specifically, there has been compliance with Regulation 14 and Schedule 4 of the EIA Regulations, and the policy requirements of the NNNPS.
 - 2) Absent a specific statutory or policy requirement, a duty to consider alternative options only arises in exceptional circumstances. Such exceptional circumstances will only exist if there is a significant conflict with planning policy and/or other conspicuous planning harm, see ***R (Mount Cook Land Limited) v Westminster City Council*** [2017] PTSR 116). Such exceptional circumstances do not exist in this case to require consideration to be had to any other alternatives.

- 3) Further, where a development is found to be acceptable in planning terms in its own right, the fact that a yet more acceptable alternative can be identified is not a reason for refusing consent, see **Sainsburys v First Secretary of State** [2007] EWCA Civ 1083. Accordingly, even if alternatives are considered in this case, because the A12 scheme is acceptable in its own right, an alternative does not provide a basis for refusing consent.

5.2 Maldon Bypass

- 5.2.1 There has been a significant focus on alternatives throughout the Examination. One such issue is the assessment of potential alternatives to relieve congestion at the Duke of Wellington mini roundabout, in Hatfield Peverel. It is important to note that there is not a unified position from the various interested parties, with Essex County Council, in their capacity of Local Highways Authority, appreciating that the Applicant's Transport Assessment - Appendix G [APP-260, Chapter G.1] shows that the performance of the Duke of Wellington mini roundabout is not ameliorated by the proposed scheme, as demonstrated by their letter of 31 October 2022, and having moved away from its previous position that either improvements to this junction, or provision of a Maldon Road Bypass should be a requirement of the proposed scheme.
- 5.2.2 The Applicant has worked with Essex County Council to include a requirement, Requirement 18, to widen the proposed junction 21 slip roads to limit the amount of reconstruction work needed on the strategic road network to deliver a Maldon Road Bypass outside of the proposed scheme. This is based on a series of assumptions regarding the timescales of a bypass's future construction and focus of localised growth. Furthermore, in providing junction 21 a considerable proportion of the delivery cost of a Maldon Road Bypass will have been addressed by the proposed scheme.
- 5.2.3 The Applicant appreciates that Maldon District Council's view differs slightly from Essex County Council's view. The District Council's view is that the current performance of the junction is poor, and whilst they accept the proposed scheme may not affect its overall performance, the projected changes to queuing lengths mean that the proposed scheme should include a Maldon Link Road. The Applicant does not share this view as the level of service is maintained. These matters have been addressed in the most recent responses at Deadline 6 in response to REP5-042 [REP6-090]. Unfortunately, the Applicant and Maldon District Council remain in disagreement on this matter, as evidenced by reference point 3.1 in Table 3.3 of the Statement of Common Ground (SoCG) with Maldon District Council submitted at Deadline 7 [REP7-026].
- 5.2.4 Braintree District Council, the district in which the Duke of Wellington mini roundabout is actually situated, have deferred matters of traffic congestion on Maldon Road to Essex County Council, as evidenced by the agreed SoCG item 1.11 [REP6-071].
- 5.2.5 Hatfield Peverel, the host parish acknowledges the challenging holistic situation that the existing roundabout does present and has concerns with regard to
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capacity with or without the proposed scheme, and therefore maintains their long-standing view that a bypass is required to overcome this concern, but agrees with the Applicant that the findings of the Applicant's assessment of alternative solutions in the context of the proposed scheme is sound, as evidenced by the agreed SoCG items 2.1-2.3 [REP6-075].

- 5.2.6 Although Chelmsford City Council and Boreham Parish Council have not raised concerns regarding the Applicant's position on the assessment of alternatives at the Duke of Wellington mini roundabout, Boreham Conservation Society has most recently in their deadline 6 submission [REP6-109] reiterated their view that a Maldon Link Road would encourage further traffic to use junction 21. The Applicant's traffic forecasting, based on sound modelling methodology, has found that the majority of traffic using Main Road (B1137) to reach the southbound A12 originates from Hatfield Peverel itself, and a Maldon Link Road would not provide any meaningful incentive for that traffic to use junction 21 over and above the traffic calming measures included in Requirement 14 of the dDCO [REP6-036].
- 5.2.7 The Applicant maintains that alternatives to address the traffic capacity issues at the Duke of Wellington mini roundabout have been soundly considered throughout the pre-examination and examination stages of the proposed scheme. The existing situation is not worsened by the proposed scheme and certain interested parties have requested that the Applicant relieve this historic bottleneck. The Applicant, in its modified proposal of junction 21, is providing a suitable tie-in for this long campaigned for local road enhancement, and as such has considerably increased its feasibility to be delivered by others outside the proposed scheme.

5.3 Inworth Bypass

- 5.3.1 Another alternative that has been considered during both pre-examination and examination itself is the bypass of Inworth which has been raised by interested parties as an alternative route from junction 24 to Tiptree and Feering. The bypass was first raised by the Messing-cum-Inworth Parish Council when it became apparent that there would be an increase in traffic on the B1023. This proposal was assessed at the time and feedback was provided to the Parish Council. The Parish Council's proposals evolved, and an updated bypass proposal was put forward to the Applicant in the Statutory Consultation in June 2021, and reaffirmed during the Supplementary Consultation in November 2021. The Applicant responded to these submissions in Annex N of its Consultation Report. The Main Alternative as it became known, would connect the southern dumbbell roundabout of junction 24 with the B1023 south of Inworth village and the northern dumbbell roundabout of junction 24 with the B1023, over the Domsey Brook, between Inworth and Feering.
- 5.3.2 Prior to the submission of the DCO application, the Applicant undertook a detailed assessment of the Main Alternative as well as a bypass option without the northern arm connection and a scenario with widening along the B1023 rather than a bypass. This assessment is documented in the Environmental Statement Appendix 3.3 Junction 24, Inworth Road and Community Bypass Technical Report [APP-095]. The assessment found that while the Main

Alternative bypass option with a southern and northern link reduces the traffic in Inworth Village and Messing, this option increases traffic in Tiptree, Feering and the B1023 to the north of junction 24. While a bypass does solve issues of traffic in some locations, it would create the same issues in other locations, to other communities, resulting in a greater number of receptors with a significant negative impact in the other communities when compared with the impacts on Inworth Village and Messing. In addition to this, a bypass would add an additional approximate cost of £10 million to the proposed scheme and require significantly more land to construct the bypass road alone when compared to the land required to widen the B1023 to facilitate the proposed traffic increase. At the time of the original DCO submission, this amounted to 40% more land required to construct the bypass, and the comparative land take has significantly increased following the reduced land take along the B1023 as presented in the revised DCO submission.

- 5.3.3 Following this assessment, the Applicant did not take forward the Main Alternative to include in the DCO application. Instead, the Applicant proposed localised widening at pinch points along the B1023 in Inworth to improve safety for pedestrians at those locations. This reduces the likelihood of vehicles overhanging or over-running the footway to pass oncoming vehicles.
- 5.3.4 The Applicant has also proposed measures to improve both the surface water drainage and overland flood storage adjacent to the B1023 currently, to help mitigate seasonal flooding problems that have been reported throughout the preliminary design of the proposed scheme. The provision of flood storage areas satisfies paragraph 5.115 of the NNNPS. The Applicant met with some Interested Parties in March and April 2021 to report the outcome of the assessment on the bypass and explain the proposal to widen the B1023.
- 5.3.5 Following submission of the DCO application, some Interested Parties continued to raise concerns regarding the forecast increase in traffic in Messing as a result of the proposed scheme, and expressed their desire for the Main Alternative bypass. The Applicant has reviewed each submission from Interested Parties regarding the Main Alternative and has had ongoing engagement with some Interested Parties throughout the examination period. The Applicant's position is that no new information has been submitted into the examination that would change the outcome of the options assessment undertaken in the Junction 24, Inworth Road and Community Bypass Technical Report [APP-095]. Overall, that detailed assessment demonstrated that the proposed scheme is the best option, when assessed against the full range of relevant objectives, with materially lesser impacts than the Main Alternative.
- 5.3.6 Essex County Council has also considered the case for and against the bypass and has reached the conclusion that the disbenefits in traffic terms to the network in Tiptree and Kelvedon would outweigh the benefit of reducing traffic flow through Inworth and Messing. The Council's position is documented in REP4-075 submitted at Deadline 4.
- 5.3.7 The Applicant maintains that the forecast increase in traffic in Messing as a result of the proposed scheme is within the capacity of the existing road network and a bypass of Inworth is not required. Analysis, including microsimulation of the road, has confirmed that the Applicant's proposed
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widening along the B1023 would address both the historic issues caused by the existing pinch points along the B1023 as well as those caused by the projected increase in traffic.

5.3.8 In respect of NNNPS policy concerning the effects of traffic (5.3 to 5.19, 5.189 to 5.191, and 5.199), while a bypass would reduce issues caused by traffic in some locations, it would relocate the same issues to other locations, within other communities. The Main Alternative would relocate the forecast traffic from Inworth and Messing villages to Tiptree, Feering and the B1023 north of junction 24, resulting in more adverse significant impacts to the Tiptree community, including worse noise effects, compared with the impacts on Inworth village and Messing. The Applicant balanced this, alongside the additional land requirements into its consideration of the junction 24 design and concluded it does not provide benefits across the whole proposed scheme area that are considered enough to justify the additional costs.

5.3.9 Following further discussions with Essex County Council, Messing-cum-Inworth Parish Council and MIAG, the Applicant has considered additional mitigation measures in the villages of Inworth and Messing to reduce vehicle speed and discourage rat running through the villages. Remaining conscious that any changing of traffic routing from what is presented in the proposed scheme could give rise to the additional significant environmental effects, such as increased noise levels, that were presented in the Junction 24, Inworth Road and Community Bypass Technical Report [APP-095], the Applicant has agreed to provide the following additional measures in Messing:

- Gateway features for signage and speed limit roundels at Lodge Road, Kelvedon Road and Harborough Hall Road, marking the extents of the existing 30mph speed limit; and
- “Unsuitable for heavy goods vehicles” signage at the junction of the B1023 and Yewtree Farm Road, the junction of Harborough Hall Road and B1022, the junction of B1023 and Oak Road, and the junction of the B1022 and Oak Road.

5.3.10 These measures are secured in Requirement 16 of the dDCO [REP6-036].

5.4 Junction 20A

5.4.1 Concerns continued to be raised during Examination regarding the proposed closure of junction 20A and the impact this would have on the residents of Boreham. The Applicant’s proposal for junction 21 seeks to combine the movements of the existing junction 20A, junction 20B and junction 21 into an all-movements junction which facilitates northbound and southbound movements between Hatfield Peverel, Witham and the A12. The existing junctions 20A and 20B are both considered substandard junctions in accordance with modern design standards. This is due to the geometry of the turn onto the junction 20A slip road from Main Road, and the close proximity of junction 20B Applicant at Hatfield Peverel, Witham, Kelvedon and Feering.

5.4.2 The proposed junction 21 northern and southern roundabouts and Hatfield Peverel and Witham link roads provide access from the A12 into Hatfield

Peverel and Witham, and from these settlements onto the northbound and southbound A12. This essentially combines the existing junction 20A, junction 20B and junction 21.

- 5.4.3 The originally designed junction 21 position was some 250m north of where it is currently proposed within the DCO application, and in the early preliminary design stages, the Applicant undertook a study to locate this junction closer to the Duke of Wellington mini roundabout. This reduced the length of link road between Hatfield Peverel and the proposed junction 21, and thereby reduced the number of vehicle drivers choosing to drive along Main Road to reach the southbound A12. While this change has increased the span of the proposed Wellington Bridge, as the slip roads for junction 21 now sit under the proposed bridge length, the Applicant proposed this change to mitigate the forecasted increase of traffic on Main Road at this early stage.
- 5.4.4 Feedback regarding the closure of junction 20A was received during Statutory Consultation and Relevant Representations. Following this feedback, the Applicant revisited the decision to close junction 20A and undertook a detailed assessment of two alternative design options to reinstate the junction and provide direct access to the southbound A12 west of Hatfield Peverel. The first option consisted of a roundabout which is similar in concept to one proposed by an Interested Party, albeit with a larger footprint due to the need to provide compliant highway geometry on the approaches and exists of the roundabout. The second option assessed was a signalisation of the existing right-turn arrangement which occupies a similar footprint to the existing junction 20A southbound arrangement today. Both options would change the existing merge arrangement from a lane gain merge to a short merge to tie into the widened carriageway before the Terling Hall Road overbridge. The detailed assessment of the two options is presented in the Junction 20A Southbound Merge Assessment of Alternatives report in Appendix B of the 9.3 Applicant's Response to Relevant Representations [REP1-002]. The assessment found that with both alternatives, while reinstating the southbound on slip may reduce the traffic on Main Road in Boreham, the significant impacts on road user safety, natural and built environment, walking, cycling and horse-riding connectivity, cost and carbon increases, construction and drainage challenges and increased land take required to construct a compliant junction outweighs the benefits arising from the forecasted reduced traffic along Main Road in the morning peak.
- 5.4.5 This assessment was challenged by Interested Parties at Open Floor Hearing 2 and further alternative design sketches indicating a roundabout option with a smaller footprint were presented by an Interested Party. The Applicant reviewed these sketches and assessed the reduced footprint to determine if this could be adopted by the proposed scheme. Ultimately, the Applicant found that while the design options presented by the Interested Party appear to provide an engineering solution to reinstate the junction 20A on slip with a smaller footprint than that presented by the Applicant, the horizontal geometry of the roundabout and link road was found to be unsuitable for heavy good vehicles and would require departure from standards to implement. Amending the design of the roundabout and link road to comply with horizontal design standards would

result in a design similar to that presented by the Applicant in the Junction 20A Southbound Merge Assessment of Alternatives report [Appendix B, REP1-002]. For the reasons set out above and presented in [REP1-002], the Applicant maintains the position that the junction 20A southbound on slip should not be reinstated.

5.4.6 Despite this position, the Applicant understands the concerns of residents in the village of Boreham regarding increased traffic on the B1137 Main Road through Boreham. In the DCO application, the Applicant proposed to reduce the speed limit to 40mph between Hatfield Peverel and Boreham, and 30mph through the village of Boreham to encourage drivers in Hatfield Peverel to use junction 21 to access the A12 southbound, rather than junction 19. Following discussions with Essex County Council, Chelmsford City Council, Boreham Parish Council, and other Interested Parties, the Applicant has agreed to provide additional traffic calming measures through the village of Boreham to further deter strategic traffic from using this route. These additional measures consist of:

- Average speed cameras in Boreham as defined by the extent of the 30mph speed limit between reference A.010 and A.011 shown on Sheets 2 and 4 of the Traffic Regulation Measures Speed Limits plans [REP6-007];
- Average speed cameras on the B1137 between Boreham and Hatfield Peverel defined by the extent of the 40mph speed limit between reference A.011 and A.012 on Sheets 4 and 5 of the Traffic Regulation Measures Speed Limits plans [REP6-007];
- A new controlled pedestrian crossing on the B1137 in the vicinity of the Boreham Co-op; and
- Softer measures including road safety posters in the vicinity of Orchard Cottages, Boreham Recreation Ground and outside of the Little Hedgehogs Day nursery.
- These measures are secured in Requirement 14 of the Draft DCO [REP6-036].

5.4.7 The Applicant also considered narrowing of the B1137 within the village of Boreham as requested by Essex County Council, Chelmsford City Council and other Interested Parties through the introduction of an advisory cycle lane to narrow the road. Counter-intuitively, advisory cycle lanes, as proposed by the Interested Parties, do not provide improved safety for cyclists. A recent research study undertook a thorough evaluation of the outcomes of many different types of cycle infrastructure. It was shown that mandatory (solid-edged) cycle lanes had no benefit in terms of reduced cyclist injury rate compared to no cycle facilities at all. Advisory (broken lines) cycle lanes were associated with an injury rate more than 30% worse than with no cycle facilities

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- 5.4.8 It is therefore likely that removing the central hatching and installing cycle lanes will have no benefit and will actually increase cyclist injury rate. It is therefore inappropriate to remodel the road-space to provide cycle lanes denoted by road markings but no physical protection from motor vehicles. The large number of vehicular access and junctions present a challenge to providing protected cycle route options such as stepped tracks, or kerb-separated lanes.
- 5.4.9 In accordance with paragraphs 4.60 to 4.66 of the NNNPS, the Applicant is expected to take opportunities to improve road safety, including introducing the most modern and effective safety measures where proportionate. Therefore, the closure of junctions 20A/20B which presently have substandard designs and the introduction of junction 21 is the most appropriate alternative design in policy terms.
- 5.4.10 In summary, the Applicant has undertaken reasonable steps to assess the reinstatement of junction 20A following feedback from Interested Parties and remains of the position that the junction 20A southbound on slip should not be reinstated. Instead, traffic calming measures have been proposed between Hatfield Peverel and Boreham and within Boreham village to reaffirm the reduced speed limits proposed by the Applicant. On this basis, the Applicant believes there is no reason to withhold consent of the A12 scheme over the closure of junction 20A.

5.5 Culverts and the Environment Agency

- 5.5.1 The Applicant has set out its position on culverts and Main River crossings in the Deadline 6 submission - Technical Note on Proposals for Main River Crossings [REP6-095].
- 5.5.2 The Environment Agency has sought an assessment of the alternative options from the Applicant, considered to justify the inclusion of culverts within the scheme. The Applicant does not consider that there is a justification for such a comparative exercise in either law or policy.
- 5.5.3 The Environment Agency has not identified any statutory or policy obligation that requires a consideration of alternatives to culverting in this case. The Applicant submits that there is no such obligation. In particular, the Applicant is not aware of any such policy requirement in the NNNPS, the National Planning Policy Framework (NPPF) or the relevant adopted development plans. It is notable that the Environment Agency has not identified any adopted policy requirement to consider alternatives to the proposed culverts.
- 5.5.4 The only policy that the Environment Agency has identified is its own internal policy. However, this is a policy concerned with how the Environment Agency will exercise its own functions. It is not a policy against which the A12 scheme must be assessed in this Examination. Further, as explained in the Technical Note on Proposals for Main River Crossings [REP6-095] at paragraphs 4.5.17-4.5.21, the Environment Agency's internal policy is inconsistent with established case law and at odds with the current policies against which the A12 scheme must be assessed. Accordingly, no weight can be afforded to it.
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- 5.5.5 Further, there is no requirement to consider alternatives to culverting in the absence of a statutory or policy obligation. This is because, as already explained above, alternatives will only be relevant in exceptional circumstances, namely where there is identified conflict with planning policy or other planning harm.
- 5.5.6 Paragraph 4.26 of the NNNPS provides general guidance on the assessment of alternatives which is consistent with that case law:
- "4.26 Applicants should comply with all legal requirements and any policy requirements set out in this NPS on the assessment of alternatives. In particular:*
- The EIA Directive requires projects with significant environmental effects to include an outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects.*
- There may also be other specific legal requirements for the considerations of alternatives, for example, under the habitats and Water Framework Directives.*
- There may also be policy requirements in this NPS, for example the flood risk sequential test and the assessment of alternatives for developments in National Parks, the Broads and Areas of Outstanding Natural Beauty."*
- 5.5.7 Paragraph 4.26 is aligned with the approach in case law, since it refers to the EIA Directive requiring projects 'with significant environmental effects' to include an outline of the main alternatives studied.
- 5.5.8 The Applicant has assessed the likely significant effects of culverting in Chapter 14 of the Environmental Statement: Road Drainage and the Water Environment [APP-081 (paragraph reference 14.11.39 and Table 14.16; and paragraph reference 14.13.1 to 14.13.17)]. This concludes that it would not give rise to any significant residual effects [APP-081 (paragraph reference 14.13.18; Table 14.19)].
- 5.5.9 In addition, no significant adverse effects were identified for the Main River crossings, no likely significant effects have been identified under the Habitats Directives as explained in the Habitats Regulations Assessment No Significant Effects Report [APP-201] or the Water Environment Regulations (WFD Regulations) Compliance Assessment [APP-159], and project design and mitigation for the Main River crossings do not significantly affect flood risk as explained in the Flood Risk Assessment [APP-162].
- 5.5.10 The Examination has not been provided with any assessment by the Environment Agency which demonstrates that the proposed culverts would be likely to have significant residual effects.
- 5.5.11 The Applicant submits that the since the culverts do not give rise to any likely significant effects, they are acceptable in policy terms and no duty arises as a matter of law for the Secretary of State to consider alternative proposals to them.
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- 5.5.12 As such, the Applicant considers that there is no legal or policy requirement for the Secretary of State to consider alternatives to the culverts proposed. The Environment Agency's position is thus not founded in law or policy and is unjustified.
- 5.5.13 Even if exceptional circumstances do arise (which is not accepted) the Environment Agency has not identified the design of any alternative water crossing which it says should have been assessed. Applying the approach in Mount Cook, the Environment Agency's 'vague or inchoate' assertions regarding alternative schemes should in any event be given little if any weight.
- 5.5.14 Further, following the Sainsbury's case, where a development is determined on its own merits to be acceptable in policy terms, there is no duty upon the decision maker to consider whether a yet more acceptable alternative can be identified. This is a yet further reason why the use of alternatives to culverts neither requires consideration nor justifies the refusal of consent.
- 5.5.15 During ISH5 on 27 June 2023 the ExA suggested that, in light of the Environment Agency's stance on the issue of culverts, the Applicant should prepare a document to set out a Water Framework Directive Article 4(7) derogation on a without prejudice basis in the event that the ExA in preparing its report and the Secretary of State, as competent authority, would find this helpful in considering WFD requirements. Subsequently, at Deadline 7, the Environment Agency submitted representations in which it disagrees with aspects of the WFD assessment undertaken by the Applicant.
- 5.5.16 The Applicant is therefore undertaking the drafting of an Article 4(7) derogation without prejudice to the Applicant's position that the proposed scheme is compliant with WFD requirements. Although the Applicant is endeavouring to respond to the ExA's request prior to the close of the Examination, this may not be feasible because of the short period of time available for consultation with the Environment Agency.

5.6 Gas Main Diversion

- 5.6.1 The existing gas main runs parallel to the proposed scheme between Maldon Road Bridge (B1018) and Colemans Bridge (B1389). Adjacent to the Coleman Bridge works is an existing Cadent above ground installation called Little Braxted Pressure Reduction Station.
- 5.6.2 The proposed scheme widening will be built where the current gas main is located. The current gas main runs parallel along the southbound carriageway of the A12 and runs under residential back gardens, a nature reserve that is an historic landfill site, and 11kV cables that run directly above the pipeline. The proposed scheme cannot widen asymmetrically to the north as it would impact on Witham residential and business properties. All of these constraints raised the need for the gas main to be diverted.
- 5.6.3 During the Supplementary Consultation in November 2021, the Consultation Brochure included plans showing the potential corridors for the gas main diversion [APP-057]. The Supplementary Consultation: Environmental Report (available on the National Highways website) included an environmental

assessment of the proposed corridors. This was submitted at Deadline 4 [REP4-060].

5.6.4 Paragraph 4.4.2 of the Overarching National Policy Statement for Energy (EN-1) states:

"Applicants are obliged to include in their ES [Environmental Statement], as a matter of fact, information about the main alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility"

Paragraph 5.3.7 of EN-1 then goes on to state:

"As a general principle, and subject to the specific policies below, development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives (as set out in Section 4.4 above); where significant harm cannot be avoided, then appropriate compensation measures should be sought."

Paragraph 2.19.10 of the National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4), provides further detail as to what the assessment of alternatives should consider under EN-4:

"When choosing a pipeline route, applicants should seek to avoid or minimise adverse effects from usage below the surface. Where it is not considered practicable to select a route that avoids below surface usage, applicants should demonstrate in the ES that mitigating measures will be put in place to avoid adverse effects both on other below ground works and on the pipeline. Mitigating measures may include: protection or diversion of underground services; gas detection near landfill sites; horizontal direct drilling (HDD) techniques and rerouting. Contaminated material may need to be removed and disposed of."

5.6.5 The options for the gas main diversion, as well as the reasons they were discounted, are discussed in Table 3.5 of Environmental Statement Chapter 3: Assessment of alternatives [APP-070]. The options that were considered were:

- Corridor 1 – Diverts south-east, away from the A12 and around Maldon Road and then travels back north-east to follow the existing A12.
- Corridor 2 – Diverts south-east, away from the A12 and around Maldon Road and then travels further east along Blue Mills Hill where it crosses the River Blackwater. It then travels north-east along Ishams Chase to divert around Whetmead LNR, avoiding the potential contaminated land, before continuing north towards the A12.
- Corridor 3 – Follows as closely as possible to the existing A12 mainline.
- Corridor 4 – Diverts south-east, away from the A12 and around Maldon Road and then returns north-east to run alongside the existing A12 mainline before diverting east away from the A12 again, crossing the River

Blackwater to go around Whetmead LNR, avoiding the potential contaminated land, before continuing north towards the A12.

- Corridor 5 - Diverts south-east, away from the A12 and around Maldon Road and then travels further east than Corridor 2 to divert around the residential properties along Ishams Chase and Whetmead LNR, avoiding the potential contaminated land, before continuing north towards the A12.

- 5.6.6 Corridors 1 and 3 were discounted, as they would involve diverting the gas main through the historic landfill at Whetmead LNR. There would be issues around safety during construction and long-term serviceability of the asset associated with placing a new asset in the potentially contaminated ground, which were assessed not to be acceptable.
- 5.6.7 Corridors 1 and 3 would have challenges associated with excavating through substantial depths of landfill, with Ground Investigation proving up to 13m of landfill deposits. This would have required very deep excavations to install the gas main, with significant health and safety considerations (such as stability of excavations and ground gas control) and considerable cost implications (the current Environment Agency position does not allow reuse of landfill deposits, so off-site disposal may have been required for excavated landfill materials). In addition, if directional drilling was used to install the gas main, the presence of landfill may mean that significant obstructions may be encountered. The deep excavations would involve substantial disturbance of the Whetmead LNR.
- 5.6.8 To mitigate against these risks, it may be practicable to remediate the landfill area to create a suitable medium for the gas main to be installed into. This would involve excavation of the existing material and transporting to a new landfill, creating an impermeable barrier whilst mitigating the risks of potential gas build up, then backfilling with a suitable material. To enable safe construction, and subsequent maintenance, it may be necessary for the full width of the construction corridor to be remediated. However, if the full construction corridor width were to be remediated in this way, this would require approximately 12,000-14,000 heavy goods vehicles movements. These would likely need to be via Maldon Road and the local road network, as the temporary works to create access/egress directly to the A12 would itself require a significant import of material and may not be feasible with the configuration of traffic on the A12 ahead of the southbound widening. It would be necessary to complete these works early in the programme, to enable the southbound A12 widening. This level of vehicle movements would not be acceptable on Maldon Road.
- 5.6.9 Corridors 2 and 5 were discounted, as there were strong objections during the supplementary consultation on the basis of the impacts of these route options from local residents and councillors. These corridors would result in the loss of trees and hedgerows that line Blue Mills Hill and Ishams Chase, impacting the landscape character of these areas and potentially impacting on the setting of listed buildings. There would also be disruption to residents during construction as maintaining access to properties, while aiming to reduce tree loss, would be problematic.
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- 5.6.10 Corridor 4 was chosen as the preferred option. Although this option would result in loss of woodland where it crosses the River Blackwater, the route of the corridor has been altered since the supplementary consultation to avoid woodland on the east bank of the River Blackwater, therefore reducing tree loss. This option also avoids the landfill and Whetmead LNR, and properties along Blue Mills Hill and Ishams Chase. Following the selection of Corridor 4 for the gas main diversion, there has been ongoing design development to refine the route of the diversion (within the preferred corridor) and the environmental mitigation to reduce the impacts of the diversion as far as practicable. This is discussed further in Section 7.6 (Biodiversity) of this Closing Statement.
- 5.6.11 In summary, the Applicant believes that the route chosen is justified and strikes a reasoned balance between the likely environmental effects and the commercial and engineering feasibility of the diversion. The assessment of alternatives of the diversion has had full consideration of the potential environmental impacts of the diversion and has sought to avoid impacts in the first instance. Where this has not been practicable, mitigation measures have been included in the REAC [REP6-052] to reduce the likely environmental effects (discussed further in Section 7.6 (Biodiversity) of this Closing Statement). As such, the Applicant considers that the route for the gas main diversion, along with the assessment of alternative routes of the diversion, is compliant with the requirements of EN-1 and EN-4.

6 Traffic and Transport

6.1 Traffic Modelling

- 6.1.1 In line with paragraph 4.5 of the NNNPS, a traffic model was developed. It covers a wide geographic area, with increasing levels of detail the closer it gets to the proposed scheme location. This traffic model was developed in line with national traffic modelling guidance (the Department for Transport's Transport Appraisal Guidance). The base year traffic model meets strict validation criteria which show how accurately it reflects observed traffic conditions, and was therefore used with confidence to produce traffic models representing future traffic conditions.
- 6.1.2 Traffic models were developed for the first year of the proposed scheme's operation (assumed to be 2027), plus an additional year - 15 years after opening (2042). Traffic model outputs were also produced for the peak year of construction (assumed to be 2025). Each of these future year traffic models take into account committed future housing and employment developments and future transport schemes based on information received from local planning authorities, plus general background increases based on standard Department for Transport traffic growth predictions. Traffic models were produced for the future years for two separate scenarios: one without the proposed scheme, and one with the proposed scheme.
- 6.1.3 The output of the traffic models was used to assess the proposed scheme's impact on the A12 itself, for example predicting journey time savings of up to ten minutes between junction 19 and 25 in the evening peak hour.
- 6.1.4 The output of the traffic models was also used to assess the predicted impacts on local roads. The impact of traffic on local roads is summarised in the Transport Assessment Appendix C: Traffic Flow Diagrams – Communities and A12 Mainline [APP-256]. A summary of some key areas discussed at Examination is provided below.
- 6.1.5 All changes in traffic flow quoted below are for the year 2027, comparing predicted traffic levels with the proposed scheme in place against predicted traffic levels if the proposed scheme was not built.

6.2 Boreham

- 6.2.1 Traffic on B1137 Main Road in Boreham is predicted to increase in the AM peak by an additional 184 vehicles per hour (a 34% increase) and reduce in the PM peak by 93 vehicles per hour (a 14% reduction). The removal of junction 20a southbound means that some drivers from the west side of Hatfield Peverel would choose to travel via Main Road to join the A12 southbound at junction 19, where they otherwise would have joined the A12 at junction 20a.
- 6.2.2 Traffic on Plantation Road is predicted to increase in the AM peak by an additional 74 vehicles per hour (a 25% increase) and the PM peak by an additional 41 vehicles per hour (a 12% increase).

- 6.2.3 Although these roads would become busier due to the proposed scheme, comparing their predicted flows against the typical capacities of these type of single carriageway roads shows that the roads would not be operating above their maximum capacity. Even with the predicted increase in traffic in the AM peak, the B1137 Main Road and Plantation Road are predicted to have peak flows which are at less than 70% of the maximum capacity of those roads.
- 6.2.4 There was discussion during the Examination relating to the assumptions that inform the traffic model predictions. The Applicant's traffic model predicts that, for traffic approaching Hatfield Peverel from the B1019 Maldon Road wanting to join the A12 southbound towards Chelmsford or London, the majority of traffic would turn right at the Duke of Wellington mini roundabout and join the A12 southbound at the proposed new junction 21. Some Interested Parties stated that this traffic would be more likely to turn left instead and travel on the B1137 Main Road through Boreham towards A12 junction 19, thereby further increasing traffic in Boreham.
- 6.2.5 The Applicant's traffic modelling assessment of this was produced using the methodologies set out in the Department for Transport's Transport Analysis Guidance, specifically Unit M3.1 section 2.8. The prediction of which routes people take on their journeys takes into account both the journey time and distance of a trip. Even though the route via junction 21 is a longer distance, it is predicted to be quicker when taking into account the improved speeds on the widened A12 and the proposed reduced speed limits on the B1137. How these factors are weighed up is based on standard traffic modelling parameters.
- 6.2.6 At Issue Specific Hearing 3, Essex County Council raised concerns that the traffic model predictions assume traffic will comply with the reduced speed limits on the B1137 Main Road, but that the proposed scheme did not include any additional measures to encourage this reduction in speed. Acknowledging the concerns expressed by Essex County Council and other Interested Parties such as Chelmsford City Council and Boreham Conservation Society, the Applicant has committed within the new Requirement 14 of the dDCO [REP6-036] to the installation of average speed cameras, a new controlled pedestrian crossing on the B1137, and softer measures including road safety posters.

6.3 Duke of Wellington mini roundabout and junction 21

- 6.3.1 The proposed scheme does not include any changes to the Duke of Wellington mini roundabout junction between B1019 Maldon Road and B1137 The Street in Hatfield Peverel. However, traffic patterns would change at the junction as more traffic from the B1019 Maldon Road would turn right to use the new junction 21 to join the A12 southbound, instead of turning left to junction 20a. There would also be a significant reduction in traffic arriving from junction 20a to turn right for the B1019 Maldon Road.
- 6.3.2 Maldon District Council raised concerns during the examination that the poor performance of this junction negatively affects people living and working in Maldon district. However, as explained above, the Applicant's assessment shows that the proposed scheme would not make the performance of the junction worse. Overall, there is predicted to be a slight improvement to the

performance of the mini roundabout because of the proposed scheme. This is based on the change in the average level of delay across all arms of the junction. Although the average queue on the B1019 Maldon Road arm is predicted to increase from 45 metres to 62 metres in the AM peak, the corresponding increase in average vehicle delay on this arm is only 2 seconds. The Applicant's position (supported by Essex County Council) is therefore that the proposed scheme does not make the performance of the junction materially worse and so the Applicant should not be responsible for its improvement.

- 6.3.3 At junction 21 itself, the Applicant has worked with Essex County Council to include a requirement, Requirement 18, to widen the proposed junction 21 slip roads to limit the amount of reconstruction work needed on the strategic road network to deliver a potential future Maldon Road Bypass outside of the proposed scheme.

6.4 Messing, Inworth and Tiptree

- 6.4.1 Traffic on the B1023 north of the proposed junction 24 is predicted to reduce slightly overall. Traffic in the northbound direction would reduce because traffic from the Tiptree area travelling to the A12 northbound would join at the proposed new junction 24 instead of through Feering to the existing junction 24 location, so would not need to travel on this northern section of the B1023. Traffic in the southbound direction would increase because traffic from the Kelvedon / Feering area would travel south on the B1023 towards the proposed new A12 junction 24, instead of to the existing A12 junctions 23 or 24. Overall, there is predicted to be a slight decrease in traffic on this northern section of the B1023.
- 6.4.2 Notwithstanding this decrease on the northern section of the B1023, it is acknowledged that traffic is predicted to increase on the section of the B1023 through Inworth by 30-40%. This is because more traffic from Tiptree would use the proposed junction 24 to access the A12 southbound instead of travelling via Braxted Park Road. Analysis, including microsimulation of the B1023 road, has confirmed that the Applicant's proposed widening along the B1023 would appropriately address both the historic issues caused by the existing pinch points along the B1023 as well as those caused by the projected increase in traffic.
- 6.4.3 In Messing, traffic is also predicted to increase as some traffic from south of Colchester would travel via Messing to access the A12 via junction 24 from the B1022. The traffic through the village is predicted to increase from less than one car per minute to around two cars per minute. The Applicant has undertaken a careful assessment of potential impacts arising from the forecast increase in traffic in Messing. It considers that the forecast increase in traffic in Messing as a result of the proposed scheme is within the capacity of the existing road network to accommodate.
- 6.4.4 Some Interested Parties raised concerns regarding the forecast increase in traffic in Messing as a result of the proposed scheme and expressed their desire for the Main Alternative bypass. This has been addressed above. Both the Applicant and Essex County Council have concluded that the disbenefits of

the Main Alternative bypass, including its potential effects on other communities, outweigh the benefits.

- 6.4.5 Following further discussions with Essex County Council and Interested Parties, the Applicant has considered the introduction of additional mitigation measures in the villages of Inworth and Messing aimed at reducing vehicle speed and at discouraging rat running through the villages. The Applicant has considered all measures proposed by Essex County Council in their Local Impact Report. The Applicant has agreed to provide additional gateway features and signs in Messing and Tiptree, secured in Requirement 15 of the dDCO [REP6-036]. Some further measures suggested by Essex County Council have not been taken forward by the Applicant due to the effect that they would have upon other communities since they would result in a rerouting of traffic away from Messing towards Tiptree. The agreed additional measures are described in Section 5 above.
- 6.4.6 As a result of the scheme, traffic from Tiptree is predicted to use the proposed new junction 24 to access the A12 southbound instead of travelling via Braxted Park Road. This would increase traffic on the B1023 Church Road in Tiptree. Both Essex County Council and Tiptree Parish Council have suggested that a widened Appleford Bridge is needed as a result. That bridge forms part of the route between Tiptree and A12 junction 22. The suggestion is that reducing delays at this narrow bridge would reduce the likelihood of drivers from the south of Tiptree to use Church Road and the B1023 to access the A12 via Junction 24, so that more drivers would use the route via Braxted Park to access the A12 via junction 22. They suggest that this would result in less of an increase in traffic on the B1023 and along Church Road (Tiptree high street).
- 6.4.7 The Applicant's position is that the proposed scheme would, in fact, reduce traffic over Appleford Bridge by 244 vehicles per hour in the AM peak and by 179 vehicles per hour in the PM peak. Thus, the proposed widening of Appleford Bridge is not justified as a result of a grant of the DCO and this is not proposed by the Applicant.

6.5 Hinds Bridge

- 6.5.1 Hinds Bridge is an existing bridge on the B1023 between Feering and the new A12 junction 24. The bridge is owned and maintained by Essex County Council as Local Highway Authority. In its Deadline 4 submission [REP4-075], Essex County Council confirmed that it believes Hinds Bridge should be widened so that it can accommodate two large vehicles passing in opposite directions. This is because, although there is predicted to be a reduction in traffic in this location due to the proposed scheme in 2027, in 2042 there is predicted to be a 9% increase in traffic in the PM peak hour.
- 6.5.2 The Applicant's position is as set out in section 3.24 of the Written Submission of Oral Case for Issue Specific Hearing 3 [REP5-020]. It considers that widening of this bridge is not necessary to make the proposed scheme acceptable. The Applicant's careful assessment has found that there are no geometric issues with two cars passing one another. The existing width only gives rise to a priority situation if at least one heavy goods vehicle (HGV) is

involved. The worst-case 9% increase in total traffic predicted for 2042 is in the PM peak; this is the point in time when HGV traffic is at its lowest point compared to the rest of the day. Since the proposed scheme is predicted to decrease the number of HGVs in the PM peak hour even further (46% reduction), there is predicted to be an overall reduction in the number of times a car would meet an HGV. The Applicant maintains that the proposed scheme improves the existing situation in the context of Hinds Bridge. The scheme itself would not exacerbate the existing position but rather will improve it.

6.6 De-trunking

6.6.1 The proposed scheme includes two sections of offline widening. Thus the existing sections of the A12 in the vicinity of Rivenhall End, and between Feering and Marks Tey will no longer form part of the A12. These existing sections are proposed to be de-trunked and handed to Essex County Council as the local highway authority. The Applicant is proposing to retain the existing carriageway and reduce the speed limit to 50mph between Feering and Marks Tey and 40mph in Rivenhall End. Roundabouts are proposed at the junctions with Easthorpe Road, Wishing Well Farm and Braxted Road to allow drivers to access both directions of the de-trunked road. These roundabouts will also act as a traffic calming feature and will discourage traffic from driving in excess of the speed limit. The proposed retention of the existing carriageway provides:

- Resilience for the overall highway network;
- A safe alternative route for slow-moving vehicles (that will no longer be permitted to use the A12) which does not impede the movement of other vehicles;
- Retention of central reserve and vehicle restraint, thus reducing the likelihood of collisions between opposing vehicles to an extremely rare event, such as an HGV breach of the vehicle restraint system;
- A high quality route for emergency access;
- Provides capacity for future public transport changes should there be demand for such; and
- An improved walking/cycling route segregated from the carriageway.

6.6.2 Essex County Council has expressed concerns about the Applicant's proposal to retain the dual carriageway form. The Applicant has been engaged in discussions with Essex County Council regarding the approach to de-trunking prior to the submission of the DCO application and throughout the Examination.

6.6.3 After the DCO application was submitted in August 2022, Essex County Council stated its belief that *'the most pragmatic solution [for de-trunking of the A12] is to retain one side of the dual carriageway as highway (likely to be the current southbound carriageway) and to repurpose the other side with green infrastructure and provision for pedestrians and cyclists.'* [Appendix A, REP1-002].

- 6.6.4 Essex County Council suggests that this is needed in order to meet the requirements of NNNPS paragraph 5.205 which provides that Applicants should consider reasonable opportunities to support other transport modes in developing infrastructure. The council also suggests that this is required to meet emerging policy in the draft NNNPS (paragraphs 5.261, 5.2.64, 5.275, 5.277 and 5.280). Essex County Council considers that “more should be done to support the needs of vulnerable road users given that these will be the predominant mode along [the detrunked roads].” [REP6-098]
- 6.6.5 The Applicant has thoroughly considered the feasibility of Essex County Council’s suggestion in line with the NNNPS paragraph 5.205 to consider reasonable opportunities to support other transport modes in developing infrastructure.
- 6.6.6 In the absence of any detail from the council, the Applicant undertook a design exercise to develop a potential design of the enhancements proposed by Essex County Council. This enabled the potential implications of the enhancement proposal to be understood when compared with the proposals included within the DCO application.
- 6.6.7 In March 2023, Essex County Council submitted an alternative de-trunking proposal and technical note at Deadline 3 [REP3-081 and REP3-082]. The Applicant assessed this proposal against the design exercise it had undertaken in early 2023 as mentioned above. This is documented in the Applicant’s Technical Note on De-trunking Proposals [REP4-057]. In this technical note, the Applicant explains in detail the challenges that would be faced by the Applicant if it were to introduce Essex County Council’s proposed changes. This includes practical issues such the extent of the works required to construct new accesses to connect existing properties to the northern (northbound) carriageway, including significant level differences. In addition, this identified issues relating to the provision of appropriate gradients for driveways and Essex County Council’s proposed cycle track. This also identified the need for drainage infrastructure. The council has not identified any solution to these issues.
- 6.6.8 More fundamentally, on Essex County Council’s case, this proposal is said to be essential in order to secure compliance with NNNPS and the draft NPS. It must follow on the council’s case that this proposal forms part and parcel of, or is at the very least associated development linked to, a Nationally Significant Infrastructure Project. As such, in order to be permitted, as a matter of law it would have to be made subject to Environmental Assessment procedures. This would require the production of a new Transport Assessment and Environmental Statement, consultation upon them and for any representations received to be taken into account by the decision maker. Since that has not been done, it would be unlawful to include Essex County Council’s proposals within the DCO. If the council wished to ensure that the Secretary of State could grant a DCO with its proposals included then it would have had to design those proposals and subject them to EIA procedures. But it did not. In fact, the council’s proposals still remain at a high-level concept stage notwithstanding that it has known about the proposed de-trunked sections of the A12 for many years.

- 6.6.9 Adopting Essex County Council's proposal would thus require the withdrawal and resubmission of the current application for development consent. This would be expected to delay the delivery of an urgently required Nationally Significant Infrastructure project by approximately two years.
- 6.6.10 The Applicant's Technical Note on De-trunking Proposals [REP4-057] also included a high-level cost estimate which indicated that Essex County Council's proposal for the de-trunked sections of the A12 would cost approximately £5.4 million more than the Applicant's proposed design in the DCO application.
- 6.6.11 The Applicant's proposal to retain the dual carriageway provides a solution which has a higher inherent safety level compared to a single carriageway. That is because it separates opposing traffic flows and removes right-turns at accesses. The addition of appropriately sized roundabouts also provides safer turning manoeuvres and a measure of speed reduction effect.
- 6.6.12 The proposed scheme thus delivers sections of the de-trunked A12 which will be safe and serviceable in operational safety terms, and conversion to a single carriageway is not justified.
- 6.6.13 The Applicant's decision to produce a scheme design which bypasses the community of Rivenhall in particular, results in a considerable enhancement to the existing situation. For those living next to the current A12, they will experience over 60,000 fewer vehicles a day passing their homes. This will result in reduced noise and improved air quality.
- 6.6.14 The scheme also includes provision which will reduce severance and which includes entirely appropriate WCH facilities. The included enhancements to the WCH network in this area are:
- In Rivenhall End, a new 3m wide shared use cycle track is proposed to the north of the de-trunked A12, connecting with the existing cycle tracks and the proposed Snivellers Lane Bridge. A new crossing of the de-trunked A12 is also proposed to connect with Oak Road (south) to address severance issues.
 - In Feering, a new 3m wide shared use cycle track is also proposed to connect the existing cycle track to the north of the de-trunked A12 to Prested Hall Overbridge.
 - In Marks Tey, new cycle tracks and footways are proposed at junction 25, including the Marks Tey Bridge replacement and crossing points at London Road roundabout, Coggeshall Road and Old Rectory Junction.
- 6.6.15 These proposed enhancements improve the connectivity of the WCH network in Rivenhall End and from Feering to Marks Tey. WCH issues are addressed in more detail in the next section of these submissions.
- 6.6.16 Given that the proposed scheme retains non-motorised user shared walking and cycling provision adjacent to the de-trunked A12 and removes the current barrier to non-motorised users undertaking journeys between Witham, Rivenhall End, Kelvedon, Feering and Marks Tey, the Applicant considers that the policy

tests in the NNNPS and draft NPS are met. Essex County Council's argument to the contrary must be rejected.

- 6.6.17 This is all the more so since, following discussions with Essex County Council and the Examining Authority, the Applicant has included a new requirement, Requirement 19, in the dDCO [REP6-036] and added in provision at Article 15(7) regarding de-trunking. These provisions ensure that the roads cannot be de-trunked until the Secretary of State approves, in consultation with the relevant local highway authority, the detailed design of the de-trunked road including how the proposals maintain a safe and reliable highway network, the provision made for non-car transport modes, how existing accesses will retain access to the de-trunked road, how existing utilities will be safeguarded, the landscaping and planting details, the drainage details and a timetable for implementation of the proposal.
- 6.6.18 Requirement 19 also ensures that any proposals would not give rise to any materially new or materially different environmental effects in comparison with those reported in the environmental statement, thereby ensuring consistency with the requirements of EIA procedures.
- 6.6.19 The Applicant does not consider that Essex County Council's position is either coherent or justified. To deliver the council's proposals would require the current DCO application to be refused. This would result in a lengthy delay and additional cost before a modern trunk road between Chelmsford and Colchester could be delivered. In addition, with the DCO refused, it is far from clear that funding would remain in place.
- 6.6.20 The simple reality here is that the proposed scheme makes appropriate provision for enhancement of WCH and for "vulnerable users" which is entirely consistent with the NNNPS and the draft NPS.
- 6.6.21 As such these issues do not weigh against the grant of the DCO.

6.7 Walking, cycling and horse riding provision

Overall WCH opportunities

- 6.7.1 The proposed scheme provides significant improvements to the WCH network between Chelmsford and Colchester. The WCH network has been designed to comply with paragraph 5.205 of the NNNPS which states that
- "Applicants should consider reasonable opportunities to support other transport modes in developing infrastructure' and 'the Applicant should provide evidence that as part of the project they have used reasonable endeavours to address any existing severance issues that act as a barrier to non-motorised users."*
- 6.7.2 The proposed improvements include a total of 30km of new and/or improved WCH facilities, six road bridges with walking and cycling provision, five of which would be new or upgraded provision, five road bridges with walking provision and five new WCH bridges with one improved walking and cycling bridge. Overall, there would be 20km of additional WCH provision. The proposed scheme is also bringing over 3.5km of existing facilities up to compliance with

current guidance such as Local Transport Note (LTN) 1/20 Cycle infrastructure design. The Applicant has engaged with Essex County Council on the WCH provision and through the addition of a new requirement, Requirement 20, in the dDCO, the design of the WCH infrastructure including overbridges, at grade crossings and WCH links would be secured in accordance with Appendix B of the design principles [REP7-017].

6.7.3 The new WCH bridges are proposed in locations to address severance of existing PRoW across the A12 as follows:

- Paynes Lane bridge connects existing bridleways PRoW 213_23 and 213_145 to provide a continuous route across the A12. This would connect all WCH users to the proposed Beaulieu Park Station and wider Chelmsford area from Boreham without negotiating junction 19.
- Gershwin Boulevard bridge reconnects the historically severed PRoW 121_95 to provide pedestrian access between Witham and Olivers Drive.
- Little Braxted bridge replaces the existing at-grade crossing of the A12 along footpath 121_103 with a cycleway, connecting to PRoW 105_63 south of the A12 and PRoW 121_119 to the north via B1389 Colchester Road.
- Snivellers Lane walking and cycling bridge provides a desirable crossing point for public transport users accessing the nearby bus laybys on the new B1024 link road.
- Potts Green bridge formalises the crossing point over the A12 to connect PRoW 144-19 on the north side of the A12 and the proposed WCH route running parallel to the A12 on the south side. The propose WCH route provides connections to the new junction 25 roundabout at Hall Chase, PRoW 144_18 and PRoW 144_17.
- Marks Tey replacement bridge replaces the severed route PRoW 144_18 south of junction 25. The bridge provides onwards connections to proposed cycleways around junction 25 and Marks Tey Station.

6.7.4 The approach in LTN 1/20 is to provide guidance on a hierarchical basis. Following discussions with Essex County Council, the proposed scheme has agreed to adopt higher standards where possible for the WCH bridges. The Applicant recognises the need to strike a balance between attractiveness of bridges to cyclists regarding their alignment, and the visual intrusion these bridges might cause. The Applicant's preliminary design accords with the minimum standards contained within this guidance and the Applicant has proposed limits of deviation for the WCH bridges as shown in the Streets, Rights of Way and Access Plans [REP6-013 and REP6-014] to allow for further enhancements to the bridges above that required in the NNNPS.

Gershwin Boulevard Bridge

6.7.5 There are some locations along the A12 where legal pedestrian crossings of the A12 currently exist. As part of the proposed scheme's operational regime,

- pedestrians would be banned from the A12 between junction 21 and junction 25.
- 6.7.6 Section 136 of PA 2008 provides that an order granting development consent may extinguish a public right of way over land only if the Secretary of State is satisfied that:
- (a) an alternative right of way has been or will be provided, or
 - (b) the provision of an alternative right of way is not required.
- 6.7.7 Since the total loss of a public right to cross the A12 would be inconsistent with the general thrust of policy to support WCH within NNNPS, the Applicant has proposed alternative PRow provision to prevent severance at some of these locations.
- 6.7.8 One of these alternative PRowS is the proposed Gershwin Boulevard bridge near Witham. The primary purpose of Gershwin Boulevard bridge is to reconnect the existing footpath 121-95 north and south of the A12, which was in effect severed by the construction of the Witham bypass section of the A12. An informal gap within the central reserve safety barrier along the A12 and steps allowing pedestrian access to the A12 main carriageway currently exists in this location.
- 6.7.9 The Applicant is proposing to stop up this crossing and provide an alternative right of way via a bridge. The Gershwin Boulevard bridge is proposed to be designated as a footpath upon opening due to the classification of footpath 121_95 on either side of the A12. It would be designed to allow its reclassification to cycle track or bridleway in the future should the surrounding network be upgraded by the Local Highway Authority.
- 6.7.10 Footpath 121_95 continues south and merges with Maldon Road for a short length in the vicinity of a number of premises and residences, and then past James Cooke Wood and footpath 268_7 which runs parallel to the River Blackwater. Replacement land approximately 2.1ha in area is proposed south of the A12 at Gershwin Boulevard bridge, which would also provide a connection to Maldon Road near to Olivers bridge, via the open space to be provided. To the north of the existing A12, footpath 121_95 runs along Olivers Drive to provide local connectivity. A 3m wide path would be provided between Olivers Drive and the new Gershwin Boulevard bridge to provide a connection between the existing footway along Gershwin Boulevard and footpath 121_95 south of the A12.
- 6.7.11 The Gershwin Boulevard bridge proposal was included in the documentation shared during statutory consultation for the proposed scheme from June to August in 2021, and in supplementary consultation from November to December 2021. Both the statutory and supplementary consultation were advertised to over 33,000 households in the area, including residents of Gershwin Boulevard, Olivers Drive, Maldon Road and the surrounding area. In response to that consultation, comments were received from local residents.
- 6.7.12 It is fair to say that a greater number of representations regarding the proposed bridge were received from residents of Gershwin Boulevard, Olivers Drive, Maldon Road and the surrounding area during the Examination. Points raised

included the location of the bridge, the potential visual impact on nearby residents, potential noise impacts and air quality impacts resulting from the removal of trees, loss of amenity land, disruption during construction, anti-social behaviour and onwards connectivity. The Applicant has summarised the matters raised by residents and outlined the Applicant's position on each matter in the Gershwin Boulevard Issue Summary Note [REP6-094].

- 6.7.13 An alternative location for the bridge was also presented by some Interested Parties which has been captured, along with the Applicant's response, in the Gershwin Boulevard Bridge Technical Note [REP3-011].
- 6.7.14 The Applicant has considered each concern raised by residents in detail and has sought to identify whether there are ways to improve the proposed scheme.
- 6.7.15 The Applicant has assessed the alternative proposal presented by the Interested Parties and found that the alternative proposal does not resolve the concerns raised by some of the Interested Parties and does not reduce the visual impacts; rather, it simply relocates the similar impacts to be experienced by different receptors. This is supported by an assessment of the visual impacts that would be caused by the proposed Gershwin Boulevard Bridge and consideration of the likely landscape and visual effects that would be caused by a bridge at the alternative suggested location, which is contained within the Technical Note Gershwin Boulevard Bridge [REP3-011].
- 6.7.16 The proposed Gershwin Boulevard Bridge is assessed as having a very large adverse visual effect on the representative viewpoints presented in Appendix A Visual Impact Assessment during construction and in year 1. At year 15 when mitigation planting has established this would reduce to a moderate adverse visual effect. Landscape and visual effects of a bridge at the suggested alternative location would likely be comparable, however there would be greater scope for landscape and visual mitigation at the location selected as part of the proposed scheme.
- 6.7.17 Essex County Council and Braintree District Council both support the need for a bridge across the A12 in the vicinity of Gershwin Boulevard to address historical severance and have expressed a neutral position on the location of the bridge. Essex County Council's position is documented in REP5-033, and Braintree District Council's position is documented in REP5-026.
- 6.7.18 The Applicant submits that that the most appropriate location for the bridge is that presented in the DCO application. This provides minimal diversion to the existing footpath 121_95 across the A12 and provides onwards connections north into Witham or south towards footpaths 121_96 and James Cooke Woods and east to Blue Mills Hill and the Blackwater Rail Trail and beyond. The Applicant's proposed Replacement Land increases public space in the vicinity of the bridge from 0.35ha lost to the bridge footprint to 2.1ha of new green space. The proposed Gershwin Boulevard bridge provides connections to this open space and facilitates onward journeys to Witham River Walk, the Blackwater Rail Trail via Blue Mills Hill, Whetmead LNR and onwards to Little Braxted Lane.
- 6.7.19 As explained above, as a consequence of s136 of PA 2008, where a public right of way is proposed to be extinguished, the Applicant is obligated to provide

a reasonable alternative right of way unless re-provision is not required. The Applicant therefore considers that the provisions of s136 of PA 2008 and the relevant NNNPS policy tests are met.

- 6.7.20 The Applicant has proposed the position of Gershwin Boulevard bridge as the most reasonable alternative diversion route in accordance with paragraphs 2.9 and 5.205 of the NNNPS. The proposed Gershwin Boulevard bridge retains the right to cross the A12 and removes the current barrier to non-motorised users wishing to cross the A12 and provides a safe, enhanced connection to undertake journeys from Witham to areas south of the A12.

Footpath at Coleman Fisheries

- 6.7.21 As described above, the nature of the proposed scheme and standards for its design require that pedestrians are prohibited from the altered A12. As a result of this, the crossing of the A12 along footpath 121_103 is proposed to be severed and in the preliminary design the Applicant proposed an alternative route between the Colemans Cottage fishing ponds and the A12 to connect to Little Braxted Lane and the Little Braxted Lane bridge. This route was proposed as it is the most direct connection between the severed footpath 121_103 and Little Braxted Lane.
- 6.7.22 In light of comments received during the examination and consultation with Essex County Council, Essex Local Access Forum, and the landowners, the Applicant is proposing to remove the proposed footpath connection from the severed footpath 121_103 to Little Braxted Lane. The Applicant is now proposing to connect footpath 121_103 to footpath 121_101 via the proposed maintenance access tracks on the southern side of the A12. Footpath 121_101 crosses under the A12 via the Brain Bridge and continues to Maldon Road. This new connection would provide an enhanced PRoW for users in Witham, with the proposed Little Braxted Lane bridge acting as the diversion route for the legally closed crossing of the A12. The proposed footpath would sit on the alignment of the private means of access shown on sheets 8 and 9 of the revised Streets, Rights of Way and Access Plans [REP6-014], and on land proposed to be retained by National Highways. This new proposed alignment is a better facility as it reuses the existing footpath network and connects footpaths in the north-south direction. This footpath would also enable circular walks between Whetmead LNR and Little Braxted Road, and a woodland walk along the A12 to the community of Witham. This new footpath would accord with paragraph 5.184 of the NNNPS and paragraph 100 of the NPPF as it would provide access to the countryside and connect two existing PRoW to enhance the existing network in the area.

Paynes Lane

- 6.7.23 Paynes Lane bridge would address historic severance across the A12 and the Great Eastern Mainline, connecting existing PRoW currently severed. The proposed Paynes Lane bridge would also connect the existing community of Boreham to the proposed Beaulieu Park Station and associated Beaulieu development to avoid the current assumption of directing WCH users around junction 19. As a north-south WCH provision has not been proposed as part of

the Beaulieu Park development or junction 19 improvement scheme, Paynes Lane bridge would provide more connectivity to both the existing Boreham community and future Beaulieu Park residents.

- 6.7.24 In light of comments received during the Examination and consultation with Chelmsford City Council and Essex County Council, the Applicant has responded to the local authorities' design concerns in the Applicant's Response to the Examining Authority's First Round of Written Questions [REP2-025] and produced the Paynes Lane Technical Note [REP6-096] which details the design optioneering, proposed design and the elements of detailed design which are outstanding.
- 6.7.25 As per paragraph 4.32 of the NNNPS, design is a material consideration in the decision-making process for national networks infrastructure schemes. To meet the NPS criteria for 'good design' for national network infrastructure, the proposed scheme has designed a coherent warren truss structure for all WCH bridges which meets the consideration of visual appearance, functionality, sustainability and cost.

Network Rail

- 6.7.26 Network Rail Infrastructure Limited has raised concerns regarding the location of the proposed Paynes Lane bridge and the impact this might have on Network Rail assets in the vicinity of the bridge. Network Rail has concern about the accessibility and safety for its maintainers when accessing the railway's signalling assets. Network Rail also has concern about the proximity of the highway boundary to the operational railway.
- 6.7.27 The Applicant has been continuously engaged with the Interested Party throughout the development of the design and is committed to continue working with Network Rail to resolve any issues in the detailed design phase. The Applicant maintains that Paynes Lane bridge would stay outside of the Network Rail boundary fence and therefore not impact on the realignment and additional track required for the Beaulieu Park Station redevelopment. The Applicant will undertake a luminaire assessment and a signal sighting assessment and agree the outcome of these assessments with Network Rail.
- 6.7.28 Paynes Lane bridge, as shown on Sheet 2 of 30 in the Structures Engineering Drawings and Sections [REP6-029] shows the existing overhead line equipment with the necessary clearance envelope around the overhead line equipment. Any minor adjustments required to stay out of the overhead line equipment envelope are well within the limits of deviation and therefore would not affect the application or any Network Rail assets. The Applicant does not believe there is a reason to withhold consent of the A12 scheme due to the location of Paynes Lane bridge.

Conclusion

- 6.7.29 The Applicant considers that its proposals regarding WCH are entirely appropriate and consistent with PA 2008, NNNPS and the draft NNNPS.

7 Environmental Matters

7.1 The Approach to Assessment in the Environmental Statement

- 7.1.1 An environmental impact assessment of the proposed scheme has been undertaken in accordance with legislation, in particular the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations), the NNNPS, the Department for Transport's DMRB, the Planning Inspectorate's advice notes, and topic specific guidance.
- 7.1.2 A scoping report was prepared setting out the approach to the environmental impact assessment of the proposed scheme, which was submitted to the Planning Inspectorate on 28 October 2020. The Planning Inspectorate, on behalf of the Secretary of State for Transport, reviewed and consulted on the scoping report and published its Scoping Opinion on 7 December 2020, followed by a republished version on 15 March 2021 with an errata sheet. The revised Scoping Opinion formed the basis for the environmental assessment undertaken by the Applicant.
- 7.1.3 During the design development process, it became clear that the high-pressure gas main Little Braxted to Spring field operated by Cadent Gas Ltd (Cadent) would need to be diverted as part of the proposed scheme. An EIA screening exercise was undertaken by the Applicant against the EIA Regulations, which concluded that the diversion would give rise to likely significant effects and that the diversion would qualify as an NSIP under Section 20 of PA 2008 and be treated as an NSIP in its own right.
- 7.1.4 The Overarching National Policy Statement for Energy (EN-01) and National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) were reviewed to determine whether any changes were required to the EIA scope for the proposed scheme. The review concluded that the scope of the EIA for the environmental topics being assessed and the methodologies being applied for the proposed scheme adequately covered the requirements of EN-1 and EN-4 and that no modifications were required.
- 7.1.5 The results of the environmental assessment were presented in the Environmental Statement which was submitted to the Planning Inspectorate on 15 August 2022 with the DCO application for the proposed scheme. The Environmental Statement consisted of a non-technical summary, the main report, figures and supporting appendices.
- 7.1.6 The environmental assessments have been undertaken in accordance with the DMRB LA 104 Environmental Assessment and Monitoring as well as the aspect-specific DMRB standards. This is the established guidance for assessing the environmental impacts of highway schemes.
- 7.1.7 Various study areas were used to assess the impact of the proposed scheme on receptors based on DMRB standards and aspect-specific guidance. The specific details are explained in each of the aspect chapters of the Environmental Statement.

- 7.1.8 For the purposes of the assessment, construction was assumed to start in 2024, with the peak construction year in 2025, scheme opening in 2027 and the design year in 2042 (15 years after opening).
- 7.1.9 Extensive surveys were commissioned, particularly for a wide range of ecological features, as well as air quality; archaeology; ground investigations including groundwater monitoring and testing for contamination; landscape; noise and soil surveys for agricultural land classification. The impact assessments also included air quality, noise and flood risk modelling. Where potential likely significant effects were identified mitigation proposals were developed based on the mitigation hierarchy as described in Sections 7 and 8 of this Closing Statement.
- 7.1.10 The environmental assessment considers both the interrelationships between environmental effects (intra-project effects) where multiple residual effects from the proposed scheme affect a given receptor and cumulative effects of the proposed scheme with other projects on receptors. The assessment also considered the risks due to accidents and disasters. The only risk identified was inland flooding.
- 7.1.11 No transboundary effects were identified.
- 7.1.12 Supporting assessments were undertaken comprising a Habitats Regulations Assessment, a Water Framework Directive Assessment, Flood Risk Assessment, a Health Impact Assessment and a Minerals and Waste Assessment. These are all provided in the application documents.

7.2 Air Quality

Overview

- 7.2.1 An assessment was undertaken to address the requirements on air quality contained within the NNNPS. The most relevant of these are:
- 7.2.2 Paragraph 5.12, which states that '*The Secretary of State must give air quality considerations substantial weight where, after taking into account mitigation, a project would lead to a significant air quality impact in relation to EIA and / or where they lead to a deterioration in air quality in a zone/agglomeration*'; and
- 7.2.3 Paragraph 5.13, which states that '*The Secretary of State should refuse consent where, after taking into account mitigation, the air quality impacts of the scheme will: result in a zone/agglomeration which is currently reported as being compliant with the Air Quality Directive becoming non-compliant; or affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision.*'
- 7.2.4 The air quality assessment, reported in Chapter 6 of the Environmental Statement [APP-073], identified no likely significant effects on air quality during the construction phase for the proposed scheme.
- 7.2.5 The assessment identified no likely significant effects on air quality at human health and Pollution Climate Mapping receptors in the operational phase. The proposed scheme is therefore in line with NNNPS policy set out in paragraph 5.13.

- 7.2.6 Objections were raised by Colchester and Chelmsford City Councils concerning modelled exceedances of the annual mean nitrogen dioxide (NO₂) air quality objective (AQO) in the opening year (one location in Chelmsford and two locations in Colchester). The Councils' underlying concerns focused on Local Air Quality Management processes to declare Air Quality Management Areas (AQMAs) based on exceedance evidence. The Applicant provided a detailed explanation of the procedures for designating an AQMA and the preparation of a Project Air Quality Action Plan (PAQAP) in its response to ExQ2 2.2.1 and 2.2.5 in the Applicant's Responses to ExQ2 [REP4-055]. There is no requirement for the local authority to declare an AQMA at this stage. An AQMA would only be required should monitoring indicate that the AQO is exceeded, which is considered unlikely. The Applicant offered to install air quality monitoring at these locations over a 12-month period to confirm the situation. This was a proportionate compromise solution by the Applicant.
- 7.2.7 The air quality assessment identified a significant effect for ecological receptors within Perry's Wood owing to an increase in nitrogen deposition, as outlined in Chapter 9: Biodiversity, of the Environmental Statement [APP-076], where subsequent mitigation has been considered. While a significant ecological effect has been concluded after considering mitigation, compensation measures have been included within the proposed scheme to provide woodland planting in an area not affected by nitrogen deposition. The decision-maker will need to weigh the findings in terms of the planning balance as outlined in paragraph 5.12 of the NNNPS, but it so doing will need to have regard to the very robust nature of the air quality modelling exercise which has been adopted.

Robust nature of the modelling

- 7.2.8 The air quality assessment approach adopted follows that set out in DMRB LA 105. This is a standard approach applied nationally for highways schemes.
- 7.2.9 By using the guidance within DMRB LA 105, the proposed scheme can be assessed against the NNNPS policy requirements. The guidance provides a framework for assessing, mitigating and reporting the effects of motorway and all-purpose trunk road projects on air quality.
- 7.2.10 The results of the modelling work are considered to be conservative as emission rates applied in the modelling i.e. the rate of which gases are emitted from the road traffic, accounted for the underperformance of vehicles with the latest Euro 6 emissions standards. In other words, a gap factor was applied to the final results based on assumed roadside rates of reduction in nitrogen oxides (NO_x) and NO₂ by Defra's modelling tools compared to observed roadside monitoring trends.
- 7.2.11 In addition to the above, although vehicle emission rates have been adjusted to account for the number of electric vehicles in the fleet for any given year, the effects of recent Government policy have not been included. In November 2020 the Government announced a commitment to cease the production of petrol and diesel cars/light goods vehicles by 2030. This commitment was made after the fleet composition projections within Emission Factor Toolkit v10 (EFTv10) were produced (i.e. in 2019). The proportions of electric vehicles in future years within the EFTv10 are therefore likely to be underestimated. This means that

the modelling results set out in the air quality assessment of the proposed scheme are likely to be conservative as a result.

- 7.2.12 The robustness of the air quality modelling is exemplified by comparing the modelling results with two monitoring sites comparably located to the exceeding human health receptors R189 and R193 (i.e CBC131 and CBC132). The pollution modelling results presented in Table 7.1 show that the annual mean NO₂ was slightly overestimated at both monitoring sites in the base year, 2019. The latest monitoring results for 2021 are well below the NO₂ annual mean Air Quality Objective of 40 µg/m³. These monitoring results are likely to be commensurate with the current status on NO₂ at receptors R189 and R193.

Table 7.1 Comparison of modelled and monitored NO₂ results

Receptor	Annual mean NO ₂ µg/m ³					
	Monitored					
	2017	2018	2019	2020	2021	2027
CBC131	N/A	N/A	39.8	34.2	27.6	
CBC132	N/A	N/A	32.5	31.7	26.9	
	Modelled					
R189						41.0
R193						42.4
CBC131			41.8			39.6
CBC132			34.7			33.0

- 7.2.13 Further evidence of conservative modelling results was explained in the Written Submission of Oral Case for Issue Specific Hearing 1 (REP3-012). “Whilst air quality has been assessed through the application of modelling tools, recent monitoring evidence indicates that receptors are more likely to show compliance.”
- 7.2.14 The reality is that the air quality modelling is likely to over-estimate the ground level concentrations in the future. It is however more reliable in terms of identifying the likely incremental impact of the scheme. This means that any indication from the modelling that a particular threshold level is likely to be exceeded should be treated with caution; however, it also means that where the modelling indicates that a threshold level is not likely to be exceeded, that conclusion is likely to be robust.

Nitrogen dioxide (NO₂) and nitrogen deposition

Construction

- 7.2.15 In accordance with the NNNPS, the assessment of construction traffic effects concluded that the proposed scheme would be unlikely to interfere with the UK's reported ability to meet the EU Limit Value for NO₂ in the shortest possible time.
- 7.2.16 Two human health receptors (R189 and R193) were found to be at risk of exceeding the annual mean NO₂ AQO (40µg/m³) in the peak construction year 2025. In accordance with the DMRB LA 105 criteria on significance, these effects are likely to be not significant.
- 7.2.17 The air quality assessment concluded that the impact level of construction traffic on ecological receptors from nitrogen deposition, including veteran trees, would not be significant.

Operation

- 7.2.18 In accordance with the NNNPS, the assessment of operation traffic effects concluded that the proposed scheme would be unlikely to interfere with the UK's reported ability to meet the EU Limit Value for NO₂ in the shortest possible time.
- 7.2.19 Three human health receptors (R193, R189 and R225), representing a total of three residential properties, are at risk of exceeding the threshold of the NO₂ AQO (40µg/m³) in the opening year 2027. These values are below the guideline number of properties, for the whole scheme, that would constitute a likely significant effect according to the significance criteria in DMRB LA 105.
- 7.2.20 Of the ecology receptors within the study area, Perry's Wood local wildlife site and ancient woodland was assessed to remain at risk from nitrogen deposition (in the opening year) owing to the proposed scheme, and the impact was assessed as a likely significant effect. The assessment and conclusions made for Perry's Wood have been fully reported in Chapter 9: Biodiversity, of the Environmental Statement [APP-076]. A PAQAP [APP-105] has been developed to explore measures of mitigating the effects on the site. This found that no mitigation was practicable, and therefore compensation planting has been included within borrow pit F to off-set the effect.

Outcomes

- 7.2.21 In accordance with the DMRB LA 105, no significant NO₂ effects were identified owing to the proposed scheme at human health receptors in the peak construction and operational years. One significant ecological effect was identified at Perry's Wood where offset woodland planting has been identified within the Order Limits at a location not affected by nitrogen deposition.

Particulate matter (PM₁₀)

- 7.2.22 In accordance with paragraph 5.8 of the NNNPS, local scheme impacts on annual mean PM₁₀ concentrations have been assessed in the peak construction and operational years where no significant effects were identified.

Particulate matter (PM_{2.5})

- 7.2.23 In accordance with paragraph 5.8 of the NNNPS, local scheme impacts on annual mean PM_{2.5} concentrations have been assessed in the peak construction and operational years where no significant effects were identified. It is worth noting and fully explained (Environmental Statement Chapter 6: Air quality [APP-073]) that modelled PM₁₀ values were used to determine the concentration of PM_{2.5}. The road contribution of PM₁₀ was added to background PM_{2.5} concentrations as a proxy. This assumption would be considered worst case.
- 7.2.24 Finally, questions have been raised concerning the recent Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, which set a new PM_{2.5} Annual Mean Concentration Target of 10 µg/m³ to be met by 2040 in England. In addition to this, an interim target level for PM_{2.5} of 12µg/m³ by 2028 has been published within the UK Government's Environmental Improvement Plan. The Regulations do not set any interim targets.
- 7.2.25 The Applicant's position on these matters was provided in the Applicant's Responses to ExQ2 [REP4-055]. The impacts and effects of the proposed scheme have been assessed against the current air quality standards. Furthermore, the Regulations only apply at certain approved monitoring locations and that none of them is located sufficiently proximately to the proposed scheme to be affected by it.

On this basis, the Secretary of State can be satisfied that the 2023 Regulations and the interim PM_{2.5} target do not have any material implications for his decision making.

Proposed Mitigation

- 7.2.26 The Applicant has agreed with the relevant local authorities to monitor NO₂ at certain locations going forward. It is understood that with this in place, the relevant local authorities do not object to the proposed scheme on air quality grounds.

Conclusion

- 7.2.27 The proposed scheme will not give rise to significant adverse effects upon air quality.

7.3 Climate change

Overall introduction

- 7.3.1 In accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, an assessment has been undertaken of both the potential impact of the proposed scheme on climate (in terms of changes in greenhouse gas (GHG) emissions) and the potential impacts of future changes in climate on the project itself (i.e. the vulnerability of the project to climate change).

- 7.3.2 The assessment was undertaken in accordance with DMRB LA 114 Climate Version 0.0.1 standard (Highways England, 2021), hereafter referred to as DMRB LA 114.

Compliance with Policy

- 7.3.3 In compliance with paragraphs 4.40 to 4.42 of the NNNPS (DfT, 2014), possible future changes in climate over a 60-year appraisal period, and potential impacts on the proposed scheme associated with these climatic changes, have been considered.
- 7.3.4 Available projections (i.e. UK Climate Projections 2018 (UKCP18) (Met Office, 2020) have been used to understand possible changes in climate over the lifetime of the proposed scheme (i.e. up to the 2080s). Measures to mitigate these potential impacts, which are embedded within the design of the proposed scheme or would occur as a matter of course due to legislative requirements or standard sector practices (i.e. standard mitigation), have been identified and residual risks assessed (see Sections 15.8 to 15.11 of Environmental Statement Chapter 15: Climate [APP-082]).
- 7.3.5 In compliance with paragraph 4.43 of the NNNPS, consideration has also been given to potential changes to the risk of flooding should more radical changes in climate occur (as discussed in Environmental Statement Chapter 14: Road drainage and the water environment [APP-081]).
- 7.3.6 In compliance with paragraph 4.44 of the NNNPS, the UKCP18 projections (which are the latest available) have been used to understand possible changes in climate over the lifetime of the proposed scheme (i.e. up to the 2080s). The Independent Assessment of UK Climate Risk (Climate Change Committee, 2021) has also been reviewed (see Section 15.8 of Environmental Statement Chapter 15: Climate [APP-082]). As noted in Chapter 14: Road drainage and the water environment, of the Environmental Statement [APP-081], relevant climate change allowances, which have been agreed in consultation with relevant stakeholders (e.g. the Environment Agency), have informed the design of the proposed scheme. Based on the above, mitigation measures embedded within the design of the proposed scheme have been identified, along with standard mitigation measures, which are secured in the REAC, within the first iteration of the Environmental Management Plan [APP-185] (see Section 15.10 of Environmental Statement Chapter 15: Climate [APP-082]).
- 7.3.7 In compliance with paragraphs 5.17 and 5.19 of the NNNPS, changes in GHG emissions associated with the construction and operation of the proposed scheme have been estimated and compared to relevant UK carbon budgets in order to assess their significance (see Section 15.11 of Environmental Statement Chapter 15: Climate [APP-082]). Mitigation measures have been implemented or are proposed (see Section 15.10 of Environmental Statement Chapter 15: Climate [APP-082]) which would reduce GHG emissions associated with the proposed scheme, both in terms of its design and its construction. These measures are considered likely to substantially reduce the carbon footprint of the proposed scheme.

- 7.3.8 A review of the relevant requirements of the Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Department of Energy and Climate Change, 2011a; 2011b) (including the draft updated versions (Department for Business, Energy & Industrial Strategy (BEIS), 2021b; 2021c)), relating to the EIA of the diversion of an existing high-pressure gas main (the 'gas main diversion') owned and operated by Cadent Gas Limited (Cadent), identified that the requirements are not materially different to those set out in the NNNPS. As such, it is considered that by meeting the NNNPS requirements described above, the requirements of EN-1 and EN-4 are also met.
- 7.3.9 Likewise, the assessments undertaken and mitigation measures described above (in compliance with the NNNPS), also comply with relevant policies contained within the NPPF (Ministry of Housing, Communities & Local Government, 2021) and relevant local plans (Braintree District Council, 2005; 2017; 2021) (Chelmsford City Council, 2020) (Colchester Borough Council, 2017) (Maldon District Council, 2017).
- 7.3.10 During the Examination, several issues relating to GHG matters were raised by Interested Parties and the Examining Authority. The Applicant has fully addressed those issues, as summarised below. For further details, please see the Applicant's key submissions relating to climate and carbon matters which are:
- Applicant's Response to Relevant Representations [REP1-002] (in particular the response to RR-156 – Climate Emergency Planning and Policy – pages 958 to 967)
 - Applicant's Comments on Written Representations [REP3-009] (in particular the responses to Climate Emergency Planning and Policy – pages 39 to 82)
 - Applicant's Comments on Essex County Council's Local Impact Report [REP3-021] – pages 43 to 52
 - Written submission of oral case for Issue Specific Hearing 1 [REP3-012] - pages 82 to 87.

Assessing the significance of estimated changes in GHG emissions

- 7.3.11 While noting that 'it is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets', paragraph 5.18 of the NNNPS goes on to state that 'any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets'. There is, however, no set significance threshold for carbon (i.e. an absolute or relative change in carbon emissions that could be considered significant), therefore professional judgement has been used to assess whether increases in carbon emissions as a result of the proposed scheme could have a material impact on the ability of the UK

Government to meet its carbon reduction targets (and would therefore potentially be significant).

- 7.3.12 This approach accords entirely with the methodology for assessing significance set out in the Institute of Environmental Management and Assessment (IEMA) guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022) which explains:

“The Crux of significance is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050.”

- 7.3.13 Thus, to assess the significance of any change in emissions associated with a project, an assessment has to be made against a baseline which contains a trajectory towards net zero (e.g. the UK carbon budgets). The IEMA guidance (IEMA, 2022) also explains:

“A project that is compatible with the budgeted, science based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and ‘good practice’ reduction measures to achieve that has a minor adverse effect that is not significant. It may have residual emissions but is doing enough to align with and contribute to the relevant transition scenario, keeping the UK on track towards net zero by 2050 with at least a 78% reduction by 2035/37 and thereby potentially avoiding significant adverse effects.”

The assessment of the cumulative impact of changes in GHG emissions on climate

- 7.3.14 As set out in paragraphs 15.11.14 to 15.11.19 of Chapter 15: Climate [APP-082], the assessment of climate impacts undertaken is inherently cumulative. This is as a result of:

- the inclusion of the proposed scheme and other locally committed transport schemes and developments within the traffic model on which the road user carbon emissions calculations are based
- the fact that national carbon budgets themselves are cumulative since they address carbon emissions from a wide variety of sources across the different sectors of the economy
- the assessment providing for an overall change in emissions as a result of the proposed scheme which can be set against and in the context of the UK carbon budgets.

The geographic scale of the assessment of changes in GHG emissions

- 7.3.15 The only statutory carbon targets are the carbon budget targets and the Net Zero 2050 target set at a national level i.e. they are targets for the UK as a whole. There are no sectoral targets (e.g. for transport), nor any statutory targets set at a subnational geographic scale. No other trajectory has been produced for a less than national scale which is demonstrably consistent with the national carbon budgets. Mathematical exercises in apportioning emissions

derived from the national carbon budgets do not result in trajectories which can be appropriately used since, were the Government to undertake such an exercise, it may be that for policy reasons certain geographical areas might be weighted differently than others. It is then not reasonably possible for the Applicant to produce an alternative baseline trajectory against which the significance of the proposed scheme's carbon emissions could be assessed since it is unable to make the policy judgments relating to the apportionment to a smaller geographical area. Accordingly, there is no reasonable basis upon which the Applicant can assess the potential likely significant effect of the proposed scheme's carbon emissions at anything other than at the national level.

Potential impacts of the Transport Decarbonisation Plan (DfT, 2021) on road user GHG emissions

- 7.3.16 It is recognised that the magnitude of the reduction in road user GHG emissions which would occur in the future as a result of the impacts of the Transport Decarbonisation Plan (TDP) and other policy initiatives is uncertain. This is why a TDP sensitivity analysis was undertaken and both 'upper bound' (more pessimistic) and 'lower bound' (more optimistic) estimates of the impact of the TDP provided in Table 15.24 of Chapter 15: Climate [APP-082]. The impacts of the TDP are, however, expected to lead to a substantial decrease in GHG emissions from all forms of road transport between now and 2050 and beyond.
- 7.3.17 The 'upper bound' and 'lower bound' estimates used in the sensitivity analysis are founded upon the projections shown in Figure 2 of the TDP, which were produced by the DfT using a range of models, including the National Transport Model, adjusted for decarbonising transport measures. The relative reductions in GHG emissions over time suggested by the TDP projections were used to scale the estimated road user GHG emissions presented in Table 15.22 of Chapter 15: Climate [APP-082], which were calculated using the standard method (i.e. using Defra's Emission Factors Toolkit (version 11.0)). These scaled emissions estimates were then compared to UK carbon budgets in Table 15.24 of Chapter 15: Climate [APP-082] in accordance with the guidance set out in paragraphs 3.18 to 3.19 of DMRB LA 114.
- 7.3.18 It should also be noted that the results of the sensitivity test presented in Table 15.24 of Chapter 15: Climate [APP-082] are provided as contextual information and have not been used as the basis for the assessment of the significance of the impact of the proposed scheme on climate. Instead, the operational road user GHG emissions estimates summarised in Table 15.22 of Chapter 15: Climate [APP-082] have been used without the expected reductions anticipated from the TDP. Thus, the assessment of the likely significance of the carbon emissions associated with the grant of the DCO can be considered to represent a robust worst case.

The GHG mitigation measures proposed

- 7.3.19 There is a difference between mitigation for construction GHG emissions and operational GHG emissions, respectively, with operational GHG emissions (which are primarily influenced by operational road user GHG emissions) more heavily influenced by national policy (e.g. the TDP).

- 7.3.20 The established mitigation hierarchy set out in paragraph 3.22.1 of DMRB LA 114 has been followed for the proposed scheme, so that firstly actions have been taken to avoid / prevent carbon emissions, followed by actions to reduce or remediate emissions. As set out in paragraph 15.10.2 of Chapter 15: Climate [APP-082], measures have been embedded within the design of the scheme to reduce the magnitude of carbon emissions associated with construction phase activities by using as much existing infrastructure as possible, removing or modifying elements of the scheme and using borrow pits. Measures have also been taken to support active travel, thereby encouraging modal shift from private car and reducing operational phase road user carbon emissions, as well as to reduce carbon losses from existing carbon stores (such as soil and vegetation) and improve carbon sequestration. As set out in paragraph 15.10.6 of Chapter 15: Climate [APP-082], measures are also proposed to reduce emissions associated with the transport of employees and raw materials, waste treatment and transport. In addition, paragraph 15.10.9 of Chapter 15: Climate [APP-082] describes a number of enhancement measures, which have been identified, such as opportunities to use low emission construction plant and equipment and lower carbon materials.
- 7.3.21 With regard to measures which would be taken to further avoid or reduce carbon emissions during the construction stage, it is noted that the Applicant's 2030/2040/2050 Net Zero Highways Plan (National Highways, 2021) includes a commitment to ensure that all construction plant and compounds on the Applicant's construction and maintenance projects will be zero emissions by 2030 (i.e. after the proposed scheme is proposed to be constructed). However, the availability, diversity and affordability of low emission construction plant and machinery, for example, is likely to increase over time as we approach this milestone. Furthermore, whilst the suitability and performance of such equipment is currently being demonstrated on high profile projects such as HS2, it is not yet commonly used in the construction industry, nor available in large numbers or for all equipment types. It is therefore expected that some low emission construction plant will be used during the construction of the proposed scheme as the availability, affordability and technical readiness of such equipment improves over time, however, it is not yet considered possible nor appropriate to make specific commitments at this stage within the DCO, which it may not be possible to deliver.
- 7.3.22 With regard to measures which would be taken to further avoid or reduce carbon emissions associated with the consumption of raw materials, a voluntary 30% carbon reduction target has been set for the embodied carbon associated with the proposed scheme. It is noted, however, that such measures can only be developed and assessed at the detailed design stage when more detailed design information is available than currently. This is because it is only at this next stage when the 'final' design and associated material quantities are known, and where the practicality, cost effectiveness and any implications for design standards relating to safety and quality of such measures can be fully understood. As such, it is not considered possible to commit to specific embodied carbon reduction measures at this stage. These measures are not secured in the DCO for the reasons stated. As a result, they have not been

accounted for within the assessment nor relied upon within the assessment of significance presented in Chapter 15: Climate [APP-082].

Contextualisation against the Carbon Budget Delivery Plan

- 7.3.23 The Applicant notes that the Carbon Budget Delivery Plan (“CBDP”) was issued by Government on 30 March 2023 (Department for Energy Security and Net Zero, 2023). The CBDP sets out Government’s detailed proposals to enable the delivery of the fourth, fifth and sixth carbon budgets (i.e. to the end of 2037) in accordance with the UK’s net zero carbon commitment under the Climate Change Act 2008.
- 7.3.24 Therefore, the CBDP sets out detailed information on the package of proposals and policies that Government intends to deliver in order to meet the statutory net zero carbon commitment. The CBDP is based on an adjusted version of the Government’s Energy and Emissions Projections, which apply assumptions of future economic growth, fossil fuel prices, electricity generation costs, UK population growth and other key variables.
- 7.3.25 The Applicant notes paragraph 19 and Table 2 of the CBDP. Table 2 of the CBDP sets out projected sectoral emissions over the UK carbon budget periods, whilst paragraph 19 goes on to explain (with our emphasis added):
- “These figures represent the **projected** residual emissions, after proposals and policies set out in this report have taken effect. The figures shown for each carbon budget are total emissions over the five-year period. Alongside this, we have shown the actual emissions over the single year of 2021 to show current performance. These are only projections and should not be interpreted as hard sectoral policy targets. Within our overall carbon budgets it is vital to retain a degree of flexibility to adjust our plans as circumstances change given the complexity of the net zero system and the inherent uncertainty in any projections. Modelling cannot always take into account systemic feedback effects, which are hard to quantify. Other factors such as consumer behaviour, technological innovation and the speed and structure of future economic growth further contribute to intrinsic uncertainties of long-term sectoral emissions projections.”*
- 7.3.26 Accordingly, the CBDP provides indicative projected sectoral-based residual emissions. The CBDP confirms, therefore, that these figures are only projections and are not to be interpreted as hard sectoral policy targets. The CBDP further sets out the reasons why it is necessary to retain flexibility within the overall carbon budgets.
- 7.3.27 To assist the Examination, the Applicant is voluntarily providing a contextualisation of estimated GHG emissions associated with the proposed scheme against the CBDP Table 2 projections. This contextualisation is provided in Table 7.4 (for total residual emissions) and Table 7.5 (for domestic transport residual emissions) below.
- 7.3.28 This information is provided by the Applicant purely for contextualisation and does not provide an updated or alternative assessment of the significance of estimated changes in GHG emissions as a result of the proposed scheme. This is appropriate and proportionate, particularly given the limitations of the CBDP

Table 2 projections as noted within the CBDP and summarised above. Accordingly, the contextualisation provided below does not alter the assessment of the likely significant effects of changes in GHG emissions that is provided by the Applicant in Environmental Statement Chapter 15: Climate [APP-082].

- 7.3.29 For the contextualisation presented below, the approach is the same as that in the Environmental Statement Chapter 15: Climate [APP-082]. Accordingly, the net change in GHG emissions (i.e. Do-Something minus Do-Minimum GHG emissions) within relevant UK carbon budget periods has been compared to the estimated residual emissions presented in the CBDP.
- 7.3.30 The total residual emissions (after policy savings) in each of the budget periods have been taken as the values excluding International Aviation and Shipping (IAS). This is because in Table 1 of the CBDP, IAS is excluded from residual emissions for the fourth and fifth carbon budgets (although it is included within residual emissions for the sixth carbon budget).
- 7.3.31 For ease of reference, the Applicant sets out the CBDP Table 2 projected sectoral-based residual emissions below in Table 7.2.

Table 7.2 Summary of sectoral residual emissions across carbon budgets in Million tonnes of carbon dioxide equivalent (MtCO_{2e}) taken from Table 2 of the CBDP

Sector	Current (2021)	Fourth carbon budget (2023–2027)	Fifth carbon budget (2028-2032)	Sixth carbon budget (2033–2037)
Agriculture and land use, land use change and forestry	49	231	207	183
Buildings	88	350	320	217
Domestic transport	109	546	422	254
Fuel supply	20	93	69	48
Industry	76	340	207	111
Power	54	143	63	42
Waste and F-gases	30	125	96	75
Greenhouse Gas Removals	N/A	0	-32	-117
International aviation and shipping (IAS)	20	217	210	184
Total excluding IAS	426	1,829	1,353	813
Total including IAS	446	2,046	1,563	997

7.3.32 Similarly, for ease of reference, the Applicant sets out below in Table 7.3 the assessment of estimated changes in GHG emissions as a result of the proposed scheme as is provided within Table 15.23 of Environmental Statement Chapter 15: Climate [APP-082]. As per DMRB LA 114, the assessment of the significance of changes in GHG emissions as a result of the proposed scheme is informed by comparing emissions arising from the proposed scheme (i.e. net emissions) with national carbon budgets.

Table 7.3 Estimated GHG emissions as a result of the proposed scheme compared to UK carbon budgets as provided in Table 15.23 of Environmental Statement Chapter 15: Climate [APP-082]

Project stage	Estimated total GHG emissions over carbon budget periods (tCO ₂ e) (Do-Something scenario)	Net change in GHG emissions with proposed scheme over carbon budget periods (tCO ₂ e)	Net change in GHG emissions with proposed scheme within relevant carbon budget period (tCO ₂ e) (and as % of relevant carbon budget)		
			4 th carbon budget (2023–2027)	5 th carbon budget (2028–2032)	6 th carbon budget (2033–2037)
Construction	427,801	428,626 ^a	428,626 ^a (0.022%)	-	-
Operation	7,577,097	318,195	30,209 (0.002%)	147,364 (0.009%)	140,622 (0.015%)
Total	8,004,897	746,820	458,835 (0.024%)	147,364 (0.009%)	140,622 (0.015%)

^a Including construction phase GHG emissions and changes in carbon sequestration due to woodland being removed during the construction phase (prior to replanting).

7.3.33 Table 7.4, which is set out in the same format and using the same methodology as is described in paragraphs 15.11.6 to 15.11.8 of the Environmental Statement Chapter 15: Climate [APP-082], contextualises the proposed scheme's GHG emissions against the total residual emissions across all sectors as provided within Table 2 of the CBDP. Therefore, Table 7.4 shows the estimated change in GHG emissions as a result of the proposed scheme as a proportion of the emissions available within the fourth, fifth and sixth carbon budgets once Government policy measures have been applied (i.e. the residual emissions).

7.3.34 In summary, Table 7.4 shows that the estimated change in GHG emissions as a result of the proposed scheme as a proportion of total residual emissions in the fourth carbon budget is 0.025%; in the fifth carbon budget is 0.011%; and in the sixth carbon budget is 0.017%. It is noted that these percentages are very similar to those in Table 7.3.

Table 7.4 Contextualising the estimated change in GHG emissions as a result of the proposed scheme against CBDP total residual emissions (after policy savings)

Project stage	Estimated total GHG emissions over carbon budget periods (tCO ₂ e) (Do-Something scenario)	Net change in GHG emissions with proposed scheme over carbon budget periods (tCO ₂ e)	Net change in GHG emissions with proposed scheme within relevant carbon budget period (tCO ₂ e) (and as % of total residual emissions (excluding IAS))		
			4 th carbon budget (2023–2027)	5 th carbon budget (2028–2032)	6 th carbon budget (2033–2037)
Construction	427,801	428,626 ^a	428,626 ^a (0.023%)	-	-
Operation	7,577,097	318,195	30,209 (0.002%)	147,364 (0.011%)	140,622 (0.017%)
Total	8,004,897	746,820	458,835 (0.025%)	147,364 (0.011%)	140,622 (0.017%)

^a Including construction phase GHG emissions and changes in carbon sequestration due to woodland being removed during the construction phase (prior to replanting).

- 7.3.35 Table 7.5 contextualises estimated changes in road user GHG emissions (only) as a result of the proposed scheme against the residual emissions associated with the “domestic transport” sector within the CBDP across the 5-year carbon budget periods when the scheme is anticipated to be in operation.
- 7.3.36 In summary, the values shown in Table 7.5 identify that the estimated changes in road user GHG emissions as a result of the proposed scheme would comprise 0.005%, 0.033% and 0.053% of the residual emissions for domestic transport in the fourth, fifth and sixth carbon budget periods, respectively.

Table 7.5 Contextualising the estimated change in road user GHG emissions as a result of the proposed scheme against CBDP domestic transport residual emissions (after policy savings)

Source	Estimated total GHG emissions over carbon budget periods (tCO ₂ e) (Do-Something scenario)	Net change in GHG emissions with proposed scheme over carbon budget periods (tCO ₂ e)	Net change in road user GHG emissions with proposed scheme within relevant carbon budget period (tCO ₂ e) (and as % of domestic transport residual emissions)		
			4 th carbon budget (2023–2027)	5 th carbon budget (2028–2032)	6 th carbon budget (2033–2037)
Road users	7,545,425	302,432	28,682 (0.005%)	139,846 (0.033%)	133,904 (0.053%)

Analysis

- 7.3.37 While measures have been embedded within the design of the scheme to reduce its carbon footprint and standard mitigation measures are proposed to reduce GHG emissions, the proposed scheme is estimated to result in an increase in GHG emissions during both its construction and operation. Table 15.23 of Chapter 15: Climate [APP-082] shows that the construction of the proposed scheme is estimated to contribute approximately 0.022% of the fourth carbon budget. Operation of the proposed scheme is estimated to contribute approximately 0.002% of the fourth carbon budget, 0.009% of the fifth carbon budget and 0.015% of the sixth carbon budget. The impact of the proposed scheme on climate (i.e. GHG emissions) is, however, considered to be not significant as it is considered unlikely to have a material impact on the ability of the UK Government to meet its carbon reduction targets. As such, no significant residual effects are expected to occur, and the proposed scheme is considered to comply with the relevant requirements of the NNNPS and energy NPS.
- 7.3.38 Assets and infrastructure designed as part of the proposed scheme are likely to be affected by climate change. A number of potential risks have been identified and assessed which would be mitigated by applying robust design standards as part of the embedded design measures or implementing relevant mitigation measures and incorporating such measures into relevant asset management processes.
- 7.3.39 The assessment indicates that, with embedded and standard mitigation measures in place, it is unlikely the potential climate-related hazards identified would result in significant impacts during the construction or operational phases of the proposed scheme.

- 7.3.40 Therefore, no significant residual effects are deemed likely during construction and operation due to vulnerability to changes in climate and the proposed scheme is considered to comply with the relevant requirements of the NNNPS.

Conclusion

- 7.3.41 In summary, a robust and comprehensive assessment has been undertaken of both the impact of the proposed scheme on climate and potential impacts of possible changes in climate on the proposed scheme, in accordance with relevant guidance. This assessment has shown that the proposed scheme is unlikely to have a significant effect on climate or be significantly affected by climate change.

7.4 Noise and Vibration

Overview

- 7.4.1 All projects which may give rise to potential noise/vibration impacts are assessed with the three aims contained within paragraph 1.7 of the Noise Policy Statement for England in mind. These three aims are repeated as paragraph 5.195 within the NNNPS. They are:
- avoid significant adverse impacts on health and quality of life;
 - mitigate and minimise adverse impacts on health and quality of life; and
 - where possible, contribute to the improvement of health and quality of life.
- 7.4.2 The Applicant has explained how these aims have been met in response to ExQ2 2.15.3 in the Applicant's responses to ExQ2 [REP4-055]. The first aim has been achieved through the provision of a surface with better noise reducing properties than a conventional low noise surface and also through the use of noise barriers in certain locations to avoid or reduce significant adverse noise effects. To meet the second aim, adverse noise impacts from the proposed scheme have been minimised through the choice of alignment and the inclusion of earth bunding within the design. The use of measures to reduce the noise at source (i.e. surfacing) has provided widespread reductions in noise for communities living alongside the proposed scheme, thus achieving the third aim.
- 7.4.3 Any mitigation measures to achieve these aims have been considered within the context of Government policy on sustainable development, which includes taking into account factors such as cost, engineering constraints and adverse impact on other environmental topics. When considering mitigation, the principle of first considering noise mitigation at source has been followed (e.g. through surfacing). This is then followed by the consideration of noise mitigation measures between the source and receiver (e.g. noise barriers).
- 7.4.4 In summary, the noise and vibration assessment is predicting some temporary significant adverse effects during the construction of the proposed scheme. These are mainly through the use of strategic diversion routes when the A12

would be closed. During operation, Chapter 12 of the Environmental Statement [APP-079] concluded that there would be significant beneficial effects at 806 dwellings and 18 other sensitive receptors. Significant adverse effects are predicted at 123 dwellings and four other sensitive receptors. However, the total number of dwellings predicted to experience significant adverse effects dropped to 116, as reported in the Environmental Statement Addendum [AS-098]. This is due to changes in traffic distribution caused by the re-design of junction 25, which resulted in the removal of seven significant adverse effects along the B1408 in Copford.

Significant adverse noise effects along Main Road, Boreham

- 7.4.5 Concerns have been raised by local residents regarding the predicted significant adverse effects at 28 dwellings along Main Road in Boreham [RR-148, RR-151, RR-160]. In addition, in its first round of written questions, the Examining Authority requested to know what part of the proposed scheme is the cause of the significant adverse effects along Main Road [ExQ1 15.0.8 of PD-008a]. The Applicant has explained that these significant adverse effects are a result of an increase in traffic flow along Main Road. In this urban environment noise mitigation measures in the form of noise barriers cannot practicably be provided [REP2-025, in response to ExQ1 15.0.8]. This is because, for a noise barrier to be effective, it needs to be unbroken. In an urban situation such as Main Road, where access is required to the residential receptors via Main Road itself, it is not possible to have a barrier that is unbroken. Low noise road surfacing would also not be effective, as the low traffic speeds along Main Road would mean that the benefits from a low noise surface would not be achieved. A low noise surface is only considered to be effective by DMRB LA 111 when average speeds are above 75km/h. The predicted speeds along Main Road are between 48 and 62km/h and so low noise surfacing would not be effective.

Noise and vibration impacts within Messing

- 7.4.6 Messing-cum-Inworth Parish Council (MCI PC) and MIAG have expressed concern about the increase in noise and vibration through the village of Messing as a result of the proposed scheme [REP3-060]. There are 74 significant adverse effects predicted at buildings within Messing, with 71 of these at dwellings and three at other sensitive receptors. However, for all of these buildings, even with the proposed scheme in place, the absolute noise level is below the Significant Observed Adverse Effect Level (SOAEL). The Applicant has explained [REP3-012, reference 72] that the increase in noise is due to a predicted increase in traffic flow through the village and the criteria adopted in relation to changes in the noise environment. Due to the nature of the village, noise mitigation measures in the form of surfacing or noise barriers are not practicable, for the same reasons explained earlier for Main Road, Boreham. Thus, since all reasonably practicable noise mitigation has been adopted, the proposed scheme is policy compliant for these locations which lie between LOAEL (the lowest observed adverse effect level) and SOAEL.
- 7.4.7 In terms of a possible increase in vibration, the predicted increase in traffic through Messing would include some increase in HGV movements. The

increase in HGV movements through Messing is likely to be from those in the weight range 7.5 to 18t. Such vehicles already pass through the village, in part to provide deliveries to homes and businesses within Messing. The Applicant considers it unlikely that building damage would be caused by the passage of vehicles in this weight range in Messing as vehicles would be moving at relatively low speed, as explained in response to REP3-064-001 in the Applicant's Comments on Information received at Deadline 3 [REP4-056] and in response to MIAG in the Applicant's Comments on Other's Responses to ExQ2 [REP5-003].

- 7.4.8 Questions were also raised by Mcl PC and MIAG about the choice of study area for environmental topics [REP3-060]. In relation to noise, the Applicant has explained that the noise study area identified accords with the approach to identifying the appropriate study area set out in guidance within DMRB LA 111. This was followed and, through the application of professional judgement, the study area for detailed calculations was extended to include Messing [REP5-003, page 65]. This ensured that potential significant effects were examined and reported where they arise. The effects of traffic noise on the Messing Conservation Area and setting of listed buildings are discussed in Section 7.8 below.

Hatfield Peverel noise barriers

- 7.4.9 Questions have been raised on the exclusion of noise barriers alongside the A12 at Hatfield Peverel [REP1-020]. The Applicant has explained that while the inclusion of noise barriers was indicated during the Preliminary Environmental Information Report (PEIR), upon further investigation it was identified that through engineering constraints it was not sustainable to provide noise barriers in this location [REP2-030]. The Applicant has instead provided noise mitigation in the form of a road surface with better noise reducing properties than a conventional low noise surface. This surface would provide a more widespread reduction in noise than the use of noise barriers, and as a result there is predicted to be a significant beneficial effect for 35 dwellings and one other sensitive receptor and no significant adverse effects.

Conclusion

- 7.4.10 The noise and vibration impacts of the proposed scheme have been assessed. Since it has adopted all appropriate mitigation, the proposed scheme complies with the policy approach set out in the NNNPS. Noise and vibration impacts do not then weigh against the grant of the DCO.

7.5 Material Assets and Waste

- 7.5.1 The need for borrow pits has been challenged in the Examination together with the justification for the compulsory acquisition of land associated with them.
- 7.5.2 This has raised issues relating to:
- The volumes of material required.

- Interested Parties making errors in interpreting the volume figures that have been published.
- A lack of understanding regarding contingency planning and how this has been included for planning purposes.
- The gist of cost information produced which supports the need for the borrow pits.
- Reasonable alternatives considered to using borrow pits.

7.5.3 Across the documents submitted to examination, the Applicant has demonstrated a compelling case for the use of borrow pits on the proposed scheme.

The Need for Borrow Pits

7.5.4 The Applicant has demonstrated the need for the borrow pits across the several reports entered into Examination [APP-278, REP1-011, REP3-023, REP5-015]. The simple reality is that they are required to deliver the proposed scheme as efficiently as possible and are necessary in order to secure the benefits of the scheme. This is set out in the Borrow Pits Report [APP-278] Section 2.4.

Volumes and scheme deficit

7.5.5 Owing to several design constraints, an earthworks material volume deficit exists for the construction of the proposed scheme embankments. This deficit is 600,000 cubic metres of general earthworks fill, which is required to construct the earthworks embankments around proposed junctions 21 and 22. In addition to this, there is a requirement for 445,000 cubic metres of granular engineering material suiting specific purposes within the design such as reinforced earth retaining walls and road pavement foundations.

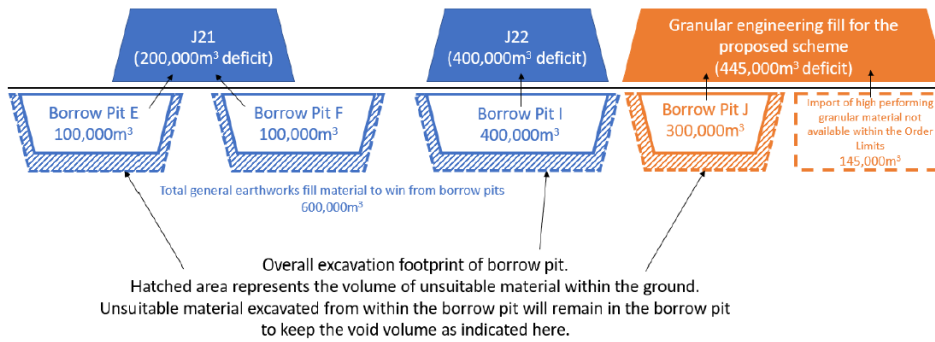
7.5.6 A significant amount of work has been completed using industry best practice methodology to define the volume deficit and fill required. This includes the use of three-dimensional modelling, standalone volume calculations and the production of a mass haul schematic to calculate, as accurately as practicable at this stage of the design, the volumes of cut and fill, and the extra material required to construct the proposed design.

The high-level summary figures are included here in Table 7.6:

Table 7.6 Cut and Fill Summary Figures

Element	Volume (m ³) ¹
General earthworks material required to construct the proposed scheme	1,900,000
General earthworks material available within proposed scheme excavations	1,300,000
Deficit of general earthworks material required to be won	600,000
Granular engineering material required to construct the proposed scheme	445,000
Note 1. Volumes have been taken from the Borrow Pits Supplementary Technical Note [REP1-011] Table 3.2 and have been rounded for simplicity.	

The deficit volumes have been broken down further in the Plate below to show how the general fill material deficit of 600,000m³ and granular engineering material deficit of 445,000m³ will be met.



Alternative Sources Considered

External import

7.5.7 At a strategic level, all reasonable alternatives have been fully explored as set out in the Borrow Pits Supplementary Technical Note [REP1-011] Section 4, which has led to the selection of borrow pits to deliver the identified earthworks material deficit.

7.5.8 These options include:

- Sourcing material from the market such as aggregate suppliers and local quarries, including the use of local railheads.

- Sourcing material from other local construction projects.
- Sourcing from borrow pits within the proposed scheme Order limits.

7.5.9 The report summarises that sourcing the required volume of material from the market, or other local sources, is not viable due to:

- The availability of the required volumes of the right material not being able to be guaranteed at this stage.
- The rate of import required to meet the proposed scheme programme not being able to be met due to the many external factors of road hauling material in from outside of the Order Limits.
- The cost of importing material from external sources being significantly more expensive (by as much as £25 million as noted in the report) than winning and processing material from borrow pits within the Order Limits of the proposed scheme.
- The GHG emissions associated with road hauling from external sources are also significantly more than from borrow pits within the proposed scheme Order Limits.

7.5.10 A more detailed summary, including the reasons for including or discounting a potential source of material, is provided in the Borrow Pits Summary Report [REP3-023] in Table 3.1.

7.5.11 The option of importing general fill material by rail has also been fully explored. All possibilities provided by the supply chain via rail heads (and sea ports) is of a granular engineering material nature (Class 6 or higher performing aggregates). As such, rail heads may feature in the import of these higher performing materials to the proposed scheme where appropriate. However, this is not appropriate for the general earthworks fill deficit, predominantly because the cost impact, transportation distance, effective triple handling and carbon generation associated with this activity are higher than the other sources investigated and it would under-utilise the quarried mineral that can be delivered by rail, which goes against one of the key principles for transitioning to a circular economy.

Blended approach (borrow pits and external import)

7.5.12 Attempting to meet the earthworks material deficit via a blended approach would only increase cost and traffic/environmental impacts compared to a solution solely using borrow pits.

7.5.13 The cost would increase by varying degrees depending on the 'blended' split ratio because the cost benefit from using borrow pits would likely reduce and the overall cost of winning the deficit material would be averaged between this potentially increased borrow pit rate and the higher external import rate.

7.5.14 Similarly, the GHG emissions associated with the blended method would also increase because the distance imported material needs to travel, and hence the

emissions calculated for external road import, are so much higher than those for using borrow pits.

- 7.5.15 As an example of attempting to use a 50/50 blended approach, the average return haulage distances from source to deposition location could be 4km and 100km respectively. This increases the overall mass haul distance by over 25 times (from circa 150,000km to over 3.8 million km) for this material.
- 7.5.16 This would mean that the peak construction traffic and environmental impacts associated with large scale import from external sources may be experienced over a longer period of time, bringing unnecessary detriment to local receptors.
- 7.5.17 Furthermore, an increasing reliance on road import from external sources would:
- Increase construction risks to the project, through reduced certainty (in sourcing and quality of material, plus the import rate achieved), which may lead to an increased import duration that would need to be mitigated through inefficient working (i.e. through winter).
 - Cause a necessity to rely on higher grade materials to ensure the project remains on programme, which is both a costly and inappropriate use of such materials.
 - Increase the temporary works elements required to facilitate a different earthworks strategy, of increasing the number of work fronts and using road-going vehicles. As mentioned in the Borrow Pits Supplementary Technical Note [REP1-011], this could include factors such as more and longer aggregate built haul roads and more construction plant to double/treble-handle the imported material.
 - Increase the safety hazards associated with the earthworks operations, including the logistics of merging the construction traffic with the road network traffic.
- 7.5.18 Therefore, considerable mitigation would likely be required to avoid a consequential delay to the delivery of the proposed scheme, making it more expensive to deliver the earthworks, with associated increases in overall preliminary costs. Delay would also delay the time at which the wider benefits of the scheme would come forward.

Deepening some borrow pits to remove others

- 7.5.19 A detailed and considered assessment of borrow pit sites was conducted to ensure that they are located at the most appropriate sites relative to their purpose and to minimise environmental impacts as set out in the Borrow Pits Supplementary Technical Note [REP1-011].
- 7.5.20 As with the blended approach to delivery, attempting to alter the volumes extracted from each borrow pit would disrupt the balance that has been achieved for optimising the approach. Additional material on-road haulage movements would be required over longer distances, which would have similar effects as mentioned above as well as increase construction traffic over existing

structures and junctions where commitments have been made in the Outline Construction Traffic Management Plan to reduce this impact.

- 7.5.21 Borrow Pit J has been included specifically for meeting the granular engineering fill material requirement for the proposed scheme and therefore cannot be swapped with Borrow Pits E, F and I which provide general earthworks fill material.

Cost information

- 7.5.22 The Borrow Pits Cost Information [REP3-023] sets out an appraisal which provides the gist of its conclusions founded upon the confidential information, explaining the cost generation exercise undertaken by the Applicant. It demonstrates what factors have been considered between the different sourcing options in the cost build up. The information in this report was then supplemented in the Borrow Pits Summary Report [REP5-015].
- 7.5.23 From the information provided in Borrow Pits Cost Information [REP3-023], it can clearly be seen that:
- For external import options, all land costs and borrow pit operating costs have been excluded from the estimates
 - Allowance for the reuse of unsuitable materials has been included for the restoration of borrow pits, but has not been included for offsite disposal of unsuitable material in the imported material scenario
 - For borrow pit options, dewatering and other required temporary works have been included along with other operating costs as well as lands costs.
- 7.5.24 The outcome is that from the range of sources investigated, borrow pits provide the best solution when all cost aspects are considered.

Environmental benefits of borrow pits

- 7.5.25 As summarised in Table 3.2 of the Borrow Pits Summary Report [REP5-015], GHG emissions associated with the transport of earthworks materials are estimated to be reduced by over 90% by sourcing materials from the borrow pits (e.g. for general fill material, transportation emissions are estimated to be 859 tCO₂e when sourced from borrow pits, compared to 14,619 tCO₂e when sourced from the market or other local sources).
- 7.5.26 GHG emissions associated with the transport of earthworks materials are estimated to be reduced by approximately 80% by transporting unsuitable material as backfill to the proposed borrow pits.
- 7.5.27 In a similar vein, the air quality for local communities that are in close proximity to the A12 would be impacted less by sourcing materials from the borrow pits by reducing earthworks related traffic movements.
- 7.5.28 If borrow pits were to be removed from the proposed scheme, the combination of transport effects would total an approximate 60% increase in external HGV movements, over the assessment made in the Transport Assessment [APP-253], into and out of the proposed scheme Order Limits.

- 7.5.29 The importing of material from sources outside of the Order Limits could cause an increase in HGV traffic on parts of the A12 leading to the proposed scheme. This would lead to an increase in noise for local communities that are near to the A12 and already exposed to high levels of noise.
- 7.5.30 Further to the above, the use of borrow pits on the proposed scheme would result in a reduction of construction vehicles that need to use the public highway.

Disposal of unsuitable material

- 7.5.31 The borrow pits provide a location to deposit unsuitable material generated from excavations along the proposed scheme, minimising the requirement to haul it outside of the proposed scheme boundary, potentially to landfill.
- 7.5.32 No allowance has been made for exporting unsuitable material as part of the proposed scheme because it is anticipated it would be used to restore the borrow pits. There is no certainty as to how this material would be disposed if export were required. Therefore, the environmental impacts of this could not be properly assessed. Without borrow pits, the disposal of unsuitable material becomes an expensive operation (valued at around £2.5 million in the Borrow Pits Cost Information [REP3-023]) that potentially impacts local landfill capacity and would not be in accordance with the waste hierarchy. Therefore, if borrow pits were removed from the proposed scheme this would give rise to environmental impacts for exporting material that have not been assessed as well as additional scheme cost.

Selection Of Borrow Pit Locations

- 7.5.33 The final borrow pit locations have been determined through a rigorous process of assessment, which reduced 19 total potential locations down to four. The selection of these borrow pit locations was carried out through continuous assessment with two key phases.
- 7.5.34 A desk-based study initially identified areas close to the proposed scheme that could provide the quality of material required in the volumes that were envisaged at that stage in the design development. Then, to refine the desk-based assessment, surveys were undertaken to gather real data from the locations identified. A Red / Amber / Green (RAG) analysis of the initial borrow pit areas was developed which identified 12 locations to take forward to site investigations.
- 7.5.35 Following the site investigation and survey works, the RAG analysis was revisited to refine and determine the optimal borrow pit locations for the proposed scheme.
- 7.5.36 The proposed scheme borrow pits are targeted at providing a combination of:
- Earthworks material and engineering fill close to the main earthworks deficit areas
 - Other granular construction materials for the proposed scheme's needs
 - Reception areas for material deemed unsuitable for engineering purposes

- A reduction in HGV traffic associated with earthworks material supply on public roads (import from external sources) and therefore the associated environmental impacts (GHG emissions)

- 7.5.37 The detail of the above assessment is provided in the Borrow Pits Supplementary Technical Note [REP1-011], Section 5, and is summarised in the Borrow Pits Summary Report [REP5-015], Section 4.
- 7.5.38 The four borrow pits (E, F, I and J) were chosen primarily because they performed best on balance for the above need when assessed against the criterion identified in Table 5.4 of the Borrow Pits Report [APP-278]. Ultimately, they contain the material required for the construction of the proposed scheme.
- 7.5.39 The environmental impacts, and mitigation required, of using the borrow pits were similar across all the proposed options for general earthworks fill material and are not considered to be a determining factor in identifying the preferred borrow pit locations.

Land required for borrow pits

- 7.5.40 Land required for excavating and managing a borrow pit is discussed in the Borrow Pits Report [APP-278], Section 3, and further developed in the Borrow Pits Summary Report [REP5-015], in Section 2.2. The Applicant has determined the land required in consultation with earthworks specialists to ensure suitable land is available to manage borrow pit activities, including the environmental impacts on receptors such as groundwater. Land is only being acquired to meet the material deficit identified (600,000m³ general earthworks fill material and 300,000m³ of locally available granular engineering fill material) in the areas required to meet it as efficiently as possible. Land has not been acquired specifically for the low-risk contingency event of backfilling Coleman's Farm Quarry.

Contingency For Coleman's Farm Quarry

- 7.5.41 The Applicant has included an environmental assessment and mitigation for a contingency in the unlikely event that Coleman's Farm Quarry cannot be backfilled by the quarry operator in the manner and timescales required for the delivery of the proposed scheme. The mitigation involves the use of Borrow Pit J.
- 7.5.42 Coleman's Farm Quarry lies directly under the footprint of the proposed junction 22 and A12 mainline embankments. The minerals are planned to be extracted under junction 22 by the quarry owner ahead of the construction works and thus, the quarry void requires backfilling with suitable material that provides a competent platform for the construction of the proposed scheme.
- 7.5.43 The planned approach to backfilling the quarry is discussed in the Borrow Pits Report [APP-278] in paragraphs 6.4.13 and 6.4.14. This approach is represented visually in the Borrow Pits Summary Report [REP5-015] in Plate 2.3.
- 7.5.44 To enable the backfilling operation, Coleman's Farm Quarry and the Applicant have completed a commercial backfill agreement to infill the land to a suitable

standard to support the new junction / road. This also avoids the unnecessary sterilisation of minerals and reduces compensation that might otherwise be due to the quarry owner.

- 7.5.45 This backfill agreement was completed in April 2023. Works are underway, with Coleman's Farm Quarry already extracting minerals and backfilling, utilising the existing planning consent while awaiting the s106 agreements in relation to applications (ESS/36/21/BTE, ESS/51/21/BTE & ESS/98/21/BTE) from Essex County Council, which vary its current quarry planning permission to revise the programme of working of material at the quarry. The Applicant is working closely with Coleman's Farm Quarry with regular progress meetings ongoing.

Conclusion

- 7.5.46 The Applicant has demonstrated the need for the borrow pits across the several reports entered into Examination and that they have a genuine purpose connected with delivering the proposed scheme as efficiently as possible to secure the benefits of the scheme. This is set out in the Borrow Pits Report [APP-278], Section 2.4. At a strategic level, all reasonable alternatives have been fully explored as set out in the Borrow Pits Supplementary Technical Note [REP1-011], Section 4, which has led to the selection of borrow pits to deliver the identified earthworks material deficit. Section 5 of the same report includes the assessment of potential borrow pit locations to determine the most suitable locations
- 7.5.47 from a range of alternative sites demonstrating a thorough and robust approach to site selection.
- 7.5.48 Borrow pits are needed to deliver the benefits of the proposed scheme in order to construct it in a way that is both proportionate and in the public interest, by:
- Reducing environmental impacts during construction
 - Minimising the cost to the Applicant (and hence the public purse)
 - Mitigating the impact on affected land interests
- 7.5.49 The benefits of the proposed scheme are detailed in the Case for the Scheme [APP-249].
- 7.5.50 The compulsory acquisition of land for borrow pits is necessary:
- To reduce the cost of the construction of the proposed scheme
 - To secure the quality and quantity of material required to construct the proposed earthworks
 - To deliver certainty of the proposed scheme programme (linked with cost, Open for Traffic date and design year)
 - To minimise the traffic impacts from construction activities and its related environmental impacts such as GHGs.

- 7.5.51 The extent of land take required is proportionate with the quantity of material that is required to be won to meet the scheme earthworks deficits, allowing sufficient space to extract the material, process it and mitigate impacts associated with its extraction.
- 7.5.52 The borrow pits are located specifically to suit the deficit areas identified within detailed volume calculation activities and have been honed down to an essential number/location of borrow pits. Therefore, no more land than is needed is being subject to compulsory acquisition. For example, land has not been acquired specifically for the contingency backfilling event at Coleman's Farm Quarry.
- 7.5.53 The Applicant is in the process of negotiating acquisition of the land needed for borrow pits by agreement, but this has not yet been achieved. Furthermore, the Applicant has sufficient funds available to acquire the land and compensate landowners in the event that compulsory acquisition is required.

Legitimate reason for borrow pits

- 7.5.54 Several design constraints have resulted in a highway alignment with an imbalance of earthworks material required to construct the proposed scheme embankments. Specifically, this constitutes an earthworks material deficit in the order of 600,000m³ of general earthworks material, shown to exist at the proposed junctions 21 and 22, as well as a need for 445,000m³ of granular engineering fill material needed throughout the proposed scheme.

Borrow pits are necessary for delivering the scheme

- 7.5.56 Without borrow pits the proposed scheme earthworks materials deficits would have to be met by importing material from external sources. The most reliable of these sources are existing quarries with the available material quantity, being within a suitable distance to road haul the material tempered by the availability of haulage vehicles to meet the needs of the proposed scheme as well as the quarry business. A less reliable option is to import construction and demolition wastes from other local schemes.
- 7.5.57 As demonstrated in the Borrow Pits Supplementary Technical Note [REP1-011], Section 4, external construction project sources cannot be relied upon to secure the quantity and quality of material required or ensure it is available exactly when required. While the quarries could be relied upon, the feasibility of using these as key sources of fill material for the proposed scheme are uncertain because of the availability of the target material, coupled with the cost and the rate at which it can be supplied to the deposition location. This carries a significant risk to the proposed scheme programme with substantial cost risk from delays that could be incurred.
- 7.5.58 Relying on these sources increases costs associated with the import of earthworks materials significantly (by as much as £25 million) because of the cost of procuring the material from the market and the indirect construction costs associated with transportation and placing of material, including the necessary construction mitigation to make this option achievable. This would have a direct bearing on the costs for the proposed scheme. See the updated

cost information in the Borrow Pits Summary Report [REP5-015], Section 5. Further to this point, the slower rate of import would lengthen the proposed scheme programme duration increasing the risk of failing to meet the Open for Traffic dates published and the assessed design year.

- 7.5.59 Relying on operational quarries supplying primary aggregates for the supply of earthworks material would under-utilise the quarried mineral for a significant portion of the required deficit, which goes against one of the key principles for transitioning to a circular economy.
- 7.5.60 A significant portion of excavated material that does not meet the engineering requirements for use on the proposed scheme (geotechnically unsuitable materials) would have to be exported as construction waste, most likely to landfill. Landfill is a finite resource, and the disposal of waste to landfill results in a continued need to expand existing, and develop new, landfill facilities resulting in adverse impacts on the natural environment. Disposing of this material to landfill would conflict with the Principal Contractor's duty under the Waste (England and Wales) Regulations 2011 to, on the transfer of waste, take all such measures that are available to it as are reasonable in the circumstances to apply the following waste hierarchy as a priority order – prevention, preparing for reuse, recycling, other recovery and disposal.
- 7.5.61 The traffic impacts associated with this scale of import/export from external sources would further detriment road users from increased HGV movements accessing construction areas directly from the A12 affecting journey time reliability, increasing the risk of road traffic collisions and increasing other associated health and safety risks to the workforce and general public. It also carries environmental impacts from increased GHG emissions associated with the greater distances road haulage lorries are required to travel to win the material.

Compulsory acquisition is proportionate

- 7.5.62 Land required for excavating and managing a borrow pit is discussed in the Borrow Pits Report [APP-278], Section 3, and further developed in the Borrow Pits Summary Report [REP5-015], in Section 2.2. The Applicant has determined the land required in consultation with earthworks specialists to ensure suitable land is available to manage borrow pit activities including the environmental impacts on receptors such as groundwater. Land is only being acquired to meet the material deficit identified (600,000m³ general earthworks fill material and 300,000m³ of locally available granular engineering fill material) in the areas required to meet it as efficiently as possible. Land has not been acquired specifically for the low-risk contingency event of backfilling Coleman's Farm Quarry.
- 7.5.63 As the borrow pits cannot be restored to existing ground levels, the inability to restore the worked areas to their former ground levels means the use of temporary possession powers in the DCO would not be possible. This then requires the land to be compulsorily acquired, unless agreement can be reached with the owner that restoration to existing levels is not necessary.

7.6 Biodiversity

Introduction

- 7.6.1 The Examination focused on several key areas in relation to biodiversity receptors, including the significant adverse effects predicted for Perry's Wood Local Wildlife Site (LWS) and Ancient Woodland, protected species (in particular bats and dormice), the Cadent gas main and associated receptors at Blue Mills, and the proposal to use culverts for main river crossings.
- 7.6.2 The Applicant has worked with consultees in order to answer questions on and resolve these issues, and this is reflected in the various iterations of the Statement of Common Ground for Natural England, the Environment Agency and the local authorities, in which an increasing number of matters have been moved to 'Agreed' during the course of the Examination.
- 7.6.3 The following text provides an overview of these key issues. Please refer to the Water Environment section below (section 7.9) with respect to culverts.

Compliance with National Networks National Policy Statement

- 7.6.4 Table 9.4 of Chapter 9: Biodiversity of the Environmental Statement [APP-076] summarises the National Networks National Policy Statement policies of relevance to biodiversity, and how the Applicant demonstrates compliance with these, as detailed below.
- 7.6.5 Paragraph 5.22 of the NNNPS requires that the Applicant's assessment should describe any likely significant effects on internationally, nationally and locally designated sites of ecological conservation importance, protected species, habitats, and other species identified as being of principal importance for the conservation of biodiversity. Section 9.8 of Chapter 9 [APP-076] identifies the designated sites which could be impacted by the proposed scheme. Additional information received from Maldon District Council within their Local Impact Report [REP2-068] identified two further proposed Local Wildlife Sites (Blue Mills and Barn Grove). As stated in Section 9.11 of Chapter 9 [APP-076] and summarised within Table 9.33, the Applicant has identified the potential for large adverse (significant) operation effects on Perry's Wood LWS and Ancient Woodland resulting from air quality effects due to nitrogen deposition exceeding the relevant thresholds.
- 7.6.6 As stated within the Written Submission of Oral Case for ISH1 [REP3-012], although the Local Wildlife Site is of County value, the boundaries coincide with the ancient woodland designation, which is of National value. Therefore, Perry's Wood LWS has been valued at a National level within the assessment. Perry's Wood LWS and Ancient Woodland is located approximately 270m south of the Order Limits along the B1023 Kelvedon Road as shown on Figure 9.1 of the Environmental Statement [APP-222]. As set out in Table 7.1 of Appendix 9.15 Assessment of air quality effects on ecological receptors [APP-139] it should be noted that:
- the baseline nitrogen deposition already exceeds the upper critical load of 20kg N/ha/yr

- site investigation found the only species that is potentially sensitive to additional nitrogen is compact rush of which there was only one plant in a disturbed area
- it is assessed that the potential loss of this species would not affect the quality of the woodland ground flora of the site, and it is probable that other factors (such as disturbance) have more influence than nitrogen deposition on the persistence (or not) of this species
- however, given the lack of scientific data for woodland habitats, a precautionary approach has been taken and it is assumed that there could be an effect on site integrity as 0.74ha (20%) of the site would be affected
- but the time taken for nitrogen emissions to reduce to Do Minimum levels is estimated at 11 years, so the effects are temporary and could theoretically be reversible.

7.6.7 According to DMRB LA 108, the significance of a moderate impact level on a site of National value could be either moderate or large. Again, a precautionary approach has been taken and significance is assessed as large adverse (significant).

7.6.8 As per item reference 99 of the Written Submission for the Oral Case for ISH1 [REP3-012], a PAQAP was produced for Perry's Wood LWS and Ancient Woodland (see Appendix 6.6 of the Environmental Statement [APP-105]). The PAQAP concluded there is no feasible mitigation for the air quality impact on Perry's Wood and so in accordance with the mitigation hierarchy it was decided to look at offsetting measures. As stated in paragraph 9.10.32 of Chapter 9 of the Environmental Statement [APP-076], offsetting would therefore be provided through the creation of 7.4ha of broadleaved woodland habitat as part of the restoration of Borrow Pit F. This planting is the large triangular block of woodland within the southern part of Borrow Pit F as shown on Sheet 7 of 21 Figure 2.1 Environmental Masterplan [REP6-043]. Offsetting for Perry's Wood LWS and Ancient Woodland will be secured through commitment BI16 of the REAC [REP6-052] within the first iteration of the Environmental Management Plan [APP-184]. The offsetting planting is located approximately 8km southwest of Perry's Wood. The location for the woodland was selected for two reasons. Firstly, it falls outside of the 200m buffer around the operational and construction Affected Road Network (ARN) and so would not be subject to air quality impacts. Secondly, it is immediately adjacent to an area of existing broadleaved woodland, providing continuity of habitat and maximising the functional value of the new woodland, which is in accordance with the Lawton principles of 'bigger, better and more joined up'. The design of this woodland would be developed at detailed design into the final landscape design. Indicative species lists are detailed in the Landscape and Ecology Management Plan [APP-193] in the first iteration Environmental Management Plan [APP-184]. The proposed species composition would reflect the species typical of Perry's Wood and other ancient woodlands in the local area, although not ash due to the prevalence of ash dieback in the area. The maintenance and management of this area of habitat would be the responsibility of National

Highways. Monitoring of the establishment of newly created habitat to offset impacts to Perry's Wood ancient woodland would be undertaken as per commitment BI14 of the REAC [APP-185] within the first iteration of the Environmental Management Plan [APP-184]. As per paragraph 9.12.3 of Chapter 9 [APP-076] the purpose of the monitoring would be to ensure habitats are establishing as desired and to make recommendations for alterations to management regimes where required. Management of the newly created habitat to offset impacts to Perry's Wood would be secured through commitment LV18 of the REAC [APP-185] and a five-year aftercare period as outlined within the Landscape and Ecology Management Plan [APP-193] would be established for all soft environmental features of the proposed scheme. The long-term management, maintenance and monitoring of the soft estate would pass to National Highways.

- 7.6.9 The Habitats Regulations Assessment [APP-201] concludes no likely significant effects on any European sites, when considered alone or in combination with any other plans and projects. The Examining Authority decided against publishing a Report on the Implications of European Sites on 22 May 2023.
- 7.6.10 Paragraph 5.23 of the NNNPS requires the Applicant should describe how the project plans to conserve and enhance biodiversity conservation interests. The Applicant has undertaken a suite of comprehensive desktop and field surveys in order to establish accurately the baseline and to identify relevant biodiversity conservation interests. The Applicant has taken into account the locations of these interests, and in accordance with the mitigation has where practicable, modified the design to avoid impacts to these features. In addition, opportunities to enhance biodiversity have been proposed. For example, as per page 161 of the Applicant's Response to Relevant Representations [REP1-002], the proposed scheme design has been refined where practicable to avoid impacts on habitats, protected and notable species, important hedgerows, trees subject to tree preservation orders (TPO) and within conservation areas, and trees designated as or identified as meeting ancient, veteran and Grade A criteria (paragraph 3.3.4 of Chapter 3 Assessment of Alternatives of the Environmental Statement [APP-070]). For example, the proposed bypass at the B1023 was discounted and replaced with pinch-point widening due to the potential for adverse impacts on the environment associated with the bypass (Table 3.4 of Chapter 3 Assessment of Alternatives [APP-070]).
- 7.6.11 The Applicant has also incorporated enhancement measures into the design of the proposed scheme as per paragraphs 9.10.116 to 9.10.121 of Chapter 9 [APP-076].
- 7.6.12 Paragraph 5.25 of the NNNPS requires the Development should avoid significant harm to biodiversity conservation interests, including through appropriate mitigation and consideration of alternatives. Design changes have been implemented where practicable to avoid impacts to ecological receptors. For example, value engineering of the refined Option 2 allowed for a number of additional design refinements, including retention of the River Ter Bridge width, avoiding potential effects associated with widening of the structure. The Applicant has committed to implementation of standard mitigation measures (as outlined within paragraphs 9.10.23 to 9.10.24 and as secured by the REAC

[REP6-052], and proposed additional mitigation as detailed in paragraphs 9.10.24 to 9.10.115 of Chapter 9 [APP-076]. Letters of No Impediment (with caveats) have been secured from Natural England for bats and badgers (see Appendix A and B of the SoCG [REP6-060]) to demonstrate that it is in agreement with mitigation for licensable impacts to these species. An Impact Assessment and Conservation Payment Certificate has been obtained from Natural England to secure mitigation for great crested newts which would be delivered by Natural England through their District Level Licence scheme.

- 7.6.13 Paragraph 5.26 of the NNNPS required that appropriate weight should be attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment. Sections 9.9 to 9.11 of Chapter 9 [APP-076] detail impacts, mitigation and significant effects to these ecological receptors such that the Secretary of State can be informed in the decision-making process. In summary, Chapter 9 [APP-076] concludes no significant adverse effects on designated sites of international, national and local importance, protected species, habitats and other species of principal importance as a result of construction of the proposed scheme. There would however be a significant beneficial effect on water vole associated with habitat creation south of junction 19 (as shown on Sheet 1 of Part 2 of the Environmental Masterplan [APP-086]). In terms of operational effects, there would be a significant adverse effect on Perry's Wood LWS and Ancient Woodland as a result of increases in nitrogen deposition. As stated above, offsetting would be provided through the creation of an area of broadleaved woodland (7.4ha) within an area of the Order Limits unaffected by changes in nitrogen emissions.
- 7.6.14 Paragraph 5.29 of the NNNPS requires that the development should not have an adverse effect on a Site of Special Scientific Interest (SSSI). Where an adverse effect on the site's notified special interest features is likely, an exception should be made only where the benefits of the development at this site clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs. As stated within paragraph 9.7.3 of Chapter 9 [APP-076], the desk-based assessment identified SSSIs within 2km of the proposed scheme and 200m of the ARN, and SSSIs which have hydrological connectivity to the proposed scheme. As per paragraphs 9.8.6 of Chapter 9 [APP-076] only a single SSSI, Marks Tey Brickpit SSSI, is located within 2km of the Order Limits, however the site is designated for geological reasons and therefore its value does not relate to ecological conservation. This site is therefore not considered further in Chapter 9 [APP-076] but is covered in Chapter 10: Geology and soils [APP-077]. As per paragraph 9.8.7 and 9.8.8 of Chapter 9, there is one SSSI with hydrological connectivity to the site, the River Ter SSSI (geological designation), which is located approximately 8km upstream of the proposed scheme to the north of Boreham, and one SSSI (Tiptree Heath SSSI, designated for heathland habitats) located within 200m of the ARN (see Figure 9.1 [APP-222]). However, Chapter 9 [APP-076] concludes no significant impacts on either site through construction or operation of the proposed scheme.

- 7.6.15 Paragraph 5.32 of the NNNPS requires that the development should not result in the loss or deterioration of irreplaceable habitats including ancient woodland and veteran trees. The proposed scheme would not directly impact any areas of ancient woodland. Impacts on Perry's Wood Ancient Woodland and proposed offsetting is provided above in relation to paragraph 5.22 of the NNNPS. As stated in paragraph 9.11.58 of Chapter 9 [APP-076], no verified veteran trees would be directly impacted by construction of the proposed scheme. However, five potential veteran trees (i.e., trees not formally designated but assessed as part of the baseline surveys for the proposed scheme to qualify as veteran trees) would be removed during construction. Where practicable, the design of the proposed scheme was refined to avoid impacts to these receptors, however, loss of these five trees was unavoidable. The Applicant acknowledges that this is irreplaceable habitat and while these cannot be directly replaced, mitigation to reduce the impacts would be provided in the form of young trees of the same species as those which would be removed would be planted with sufficient space around them to encourage development of an open crown. The significance of effects is concluded as not significant - the loss of five trees would only account for 7% of all potential and verified veteran and ancient trees within 15m of the Order Limits.
- 7.6.16 The air quality assessment [APP-139] has also shown there would be changes to air quality at one veteran tree, four potential veteran trees and one potential ancient tree during construction; and changes in air quality for six verified veteran trees, 16 potential veteran trees and one ancient tree during operation.
- 7.6.17 With respect to nitrogen deposition, less than 10% of the total number of verified veteran trees within 200m of the construction ARN would be impacted, which is also not considered significant. In addition, none of the operational impacts predicted for veteran trees (verified and potential) or ancient trees are considered significant. For trees where the duration of impact is estimated at less than 15 years, it is considered that any impacts due to the proposed scheme could be reversible and therefore negligible.
- 7.6.18 The Supplementary Arboricultural Survey [REP3-008] confirmed the presence of a further potential veteran black poplar tree and two transitional veteran trees at Blue Mills. REAC commitment BI50 [REP6-052] requires that the Cadent gas pipeline, Work No. U69, would be installed using no-dig techniques underneath the River Blackwater and the woodland subject to TPO 07/22 at Blue Mills. The line and depth would be selected to minimise impacts to the woodland protected by the TPO, the proposed Blue Mills LWS, the black poplar and otter holt at grid reference TL 83264 1361, and transitional veteran trees T2045 and T2078 as identified in the Supplementary Arboricultural Survey Report [REP3-008].
- 7.6.19 Paragraph 5.33 of the NNNPS requires that development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design. The Applicant should maximise such opportunities in and around developments. As detailed above in respect to Paragraph 5.23 of the NNNPS, the Applicant would provide enhancements for biodiversity receptors. In addition, the Applicant predicts net gains of 28.4% for habitats, 34.49% for hedgerows and 156.73% for rivers [AS-098].

- 7.6.20 Paragraph 5.35 of the NNNPS requires that habitats and species identified as being of principal importance should be protected from the adverse effects of development. Priority species and habitats are identified within Chapter 9 [APP-076]. The Applicant has assessed the potential for effects on these receptors including priority habitats proposed by Brice Aggregates for the restoration of Colemans Farm Quarry as stated in paragraph 9.8.140 of Chapter 9: Biodiversity [APP-076] in relation to the future baseline. The mitigation proposed for protected species and habitats would mitigate impacts to species and habitats of principal importance. As noted above in reference to Paragraph 5.26 of the NNNPS, Chapter 9 [APP-076] concludes no significant adverse effects on species of principal importance as a result of construction or operation of the proposed scheme.
- 7.6.21 Paragraph 5.36 of the NNNPS requires that appropriate mitigation measures are considered an integral part of a proposed development and the Applicant should include these in their assessment, including identifying how these measures will be secured. Impacts would be minimised by reducing the construction footprint as far as practicable, following standard mitigation and through landscape design and provision of enhancements where practicable. The green infrastructure principles identified within the Essex Green Infrastructure Standards Guidance (Essex County Council, 2022) have been incorporated within the proposed scheme, including through the Design Principles [REP2-006]. For example, landscape planting has been designed to support green infrastructure objectives, through the use of planting to maintain connectivity of existing wildlife corridors. Ecology mitigation areas have been located in areas with connectivity to existing habitats and these areas will be created in advance of construction where practicable. Other mitigation measures are detailed within Section 9.10 of Chapter 9 [APP-076]. Mitigation is secured via the REAC [REP6-052].
- 7.6.22 Paragraph 5.192 of the NNNPS requires that the Applicant should consult Natural England with regard to assessment of noise on designated nature conservation sites, protected landscapes, protected species or other wildlife. The results of any noise surveys and predictions may inform the ecological assessment. The seasonality of potentially affected species in nearby sites may also need to be taken into account. The assessment of noise arising both during construction and operational phases of the proposed scheme on biodiversity is presented within Chapter 9 [APP-076]. It includes consideration of disturbance to protected species as a result of changes in noise levels, specifically breeding and wintering birds, barn owl, bats, badger, freshwater fish, otter and water vole as well as Whetmead LNR and LWS. Where bat roosts and badger setts have been identified as being at risk of noise disturbance, these have been included in the draft bat licence (Appendix 9.16 [APP-140]) and draft badger licence (Appendix 9.17 [APP-141]). These were submitted to Natural England and a Letter of No Impediment was issued to the Applicant on 17 January 2023 and 1 June 2023 respectively. As per REAC commitment BI11 [REP6-052], pre-construction surveys would be undertaken to ensure the baseline is up to date and to inform the formal licence application.

Protected Species

7.6.23 The following section summarises general protected species issues. Protected species issues specific to the Cadent gas main and main river crossings are summarised under the subheadings ‘Gas pipeline impacts’ and ‘Main River Crossings’ within this section.

Protected species licences

7.6.24 The Applicant has determined from baseline data collected to inform the DCO submission that licences for three protected species (bats, great crested newts and badgers) would be required to enable construction of the proposed scheme. The Applicant has committed (B111 of the REAC [REP6-052]) to undertaking pre-construction for bats, badger, barn owl, otter, water vole and reptiles to update baseline surveys prior to construction.

7.6.25 The Applicant has been working within Natural England to agree draft licences for bats and badgers, and to agree use of Natural England’s District Level Licence for great crested newts. The status of the licences is as follows and is reflected within the SoCG [REP7-019].

- Great Crested Newts: an ‘Impact Assessment and Conservation Payment Certificate’ has been obtained by the Applicant to use the District Level Licensing; the certificate was countersigned by Natural England on 23 March 2022.
- Badgers: a letter of no impediment was issued by Natural England on 17 January 2023 and is included within Appendix A of the SoCG with Natural England [REP6-060]. A final version of the SoCG will be submitted prior to the end of Examination.
- Bats: a letter of no impediment was issued by Natural England on 1 June 2023 and is included within Appendix B of the SoCG with Natural England [REP6-060]. A final version of the SoCG will be submitted prior to the end of Examination.

Bats

7.6.26 Representations were received from Essex County Council regarding the effect of the proposed scheme with respect to bats, in particular the two rarer species recorded during field surveys (barbastelle and Nathusius’ pipistrelle) and mitigation to maintain connectivity across the proposed scheme.

7.6.27 In their response to Essex County Council’s Local Impact Report [REP2-055, Applicant’s Response [REP3-021]] the Applicant provided some context to the data for barbastelle and Nathusius’ pipistrelle. Recordings of these species were infrequent compared to other bat species and comprised a single Nathusius’ pipistrelle during a transect survey (on the eastern edge of Coleman’s Reservoir), an incidental record (i.e. a passing bat) of a single Nathusius’ pipistrelle on an emergence/re-entry survey, and approximately 30 passes of Nathusius’ pipistrelle from 1,140 nights of surveying over a six month period (recorded on static detectors and during transect surveys), equating to

- an average of 0.03 passes per night, with no more than one pass in any one location in a single night.
- 7.6.28 A total of 38 barbastelle passes from 1,140 nights of surveying over a six-month period (recorded on static detectors and during transect surveys). That would be an average of 0.03 barbastelle passes per night.
- 7.6.29 Core sustenance zones (CSZ) (Bat Conservation Trust, 2016) are defined as the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. The Applicant has confirmed that the proposed scheme is outside the CSZ for known Nathusius' pipistrelle roosts and on the extremities of the CSZ for known barbastelle roosts. Therefore, it is unlikely that the proposed scheme would impact the commuting and foraging habitat of bats using the known roosts.
- 7.6.30 The Applicant has confirmed that the low levels of records of barbastelle and Nathusius' pipistrelle on the proposed scheme is suggestive of commuting behaviour only, as it is recognised that barbastelle bats in particular forage intensively in select foraging areas to which they are highly faithful. The passes were also recorded throughout the survey season (May to October), which indicates that the proposed scheme supports general commuting activity for this species rather than being specifically linked to key transitional or sensitive periods for bats (such as maternity season). It is also important to recognise that the landscape within the Order Limits is predominantly arable and while there are small blocks of woodland, these do not support barbastelle which is primarily a woodland specialist with a strong preference for roosting in trees and foraging in woodland.
- 7.6.31 Data show that barbastelle activity, while infrequent, is fairly distributed across the extent of the proposed scheme, both north and south of the existing A12. Highest activity levels were recorded near Marks Tey (junction 25) and Feering (junction 24), with an average of 1.31 and 1.00 pass(es) per night respectively, although these numbers remain low. These data indicate that barbastelle bats are either crossing the existing scheme or navigating east to west (or vice versa) along it. In either case, it is considered that this species is therefore adept at navigating the existing A12 and will continue to do so. Taking into consideration the foraging and roosting preferences for this species (as mentioned above), the survey data support the conclusion that the proposed scheme supports low numbers of barbastelle in a commuting capacity only.
- 7.6.32 Mitigation to offset impacts due to fragmentation of the proposed scheme comprises several different measures. This is of benefit as it reduces the risk of mitigation being ineffective by not relying on one technique, and also caters for the preferences of different bats species.
- 7.6.33 The Applicant acknowledges the importance of hedgerows and other linear habitat features for bats in aiding connectivity across the landscape. Minimising loss and fragmentation of existing hedgerows and maximising planting of new hedgerows was therefore desirable to maintain connectivity for bats. Although construction of the proposed scheme would result in a loss of 14.47km of hedgerow, this would be mitigated through the creation of 42.23km of new

hedgerow (paragraph 9.11.87 and 9.11.88 of Chapter 9: Biodiversity [APP-076]). Other ways in which connectivity for bats would be maintained are summarised below (commitment references for the REAC [REP6-052] are indicated in brackets where applicable):

- The retention of existing culverts (Boreham Culvert, River Ter Bridge, Brain Bridge and Domsey Brook Bridge) which have been shown to be used by bats to cross under the existing A12.
- Provision of new culverts (Rivenhall Brook Culvert and Domsey Brook East crossing) which could be used by bats to cross under the new offline sections of the A12.
- Sympathetic design of new and modified culverts to improve their value to bats.
- Design of landscape planting to avoid fragmentation of foraging and commuting habitats and to improve the connectivity of habitats either side of the proposed scheme.
- Where possible, linear planting would tie in with culverts to guide bats through these as opposed to over nearby side roads (as per commitment BI21 of the REAC [REP6-052]).
- At detailed design, landscaping proposals would be developed to include linear woody planting on the embankments of Braxted Road Overbridge, Highfields Overbridge replacement, Ewells Overbridge replacement, Prested Hall Overbridge, Easthorpe Road Overbridge and Wishingwell Overbridge (as per commitment BI21 of the REAC [REP6-052]).
- Use of larger stock and faster-growing native trees at strategic locations on the new embankments and existing A12 where practicable, to act as hop-overs and to guide bats over the new road (as per commitment BI21 of the REAC [REP6-052]).
- Temporary lighting would be provided to ensure safe working conditions and to maintain security within construction compounds and working areas. Best practice measures would be implemented where practicable to ensure temporary lighting is avoided or directed away from bat roosts and important commuting habitats, as well as heritage assets, residential and/or other ecological receptors such as watercourses, woodland and badger setts (as per commitment LV11 of the REAC [REP6-052]).

7.6.34 In Section 9.9 of Chapter 9 [APP-076] the Applicant acknowledges the potential for severance impacts on bats during operation of the proposed scheme resulting from physical impacts on existing wildlife corridors and road lighting (for light-shy species such as the brown long-eared bat). Landscape planting would be designed to maximise biodiversity delivery by improving the value of habitat throughout the proposed scheme and improving wildlife connectivity by incorporating linear habitats such as hedgerows and lines of trees, linking with retained woodland and hedgerows where feasible. Vegetation loss and

retention is illustrated on the Retained and Removed Vegetation Plans [REP6-032, REP6-033].

- 7.6.35 As per paragraph 9.10.6 of Chapter 9 of the Environmental Statement [APP-076] the use of permanent lighting would be developed at the detailed design stage in accordance with best practice guidance (including Bats and artificial lighting in the UK, Bat Conservation Trust Guidance Note 08/18 (Bat Conservation Trust and Institution of Lighting Professionals, 2018)) to minimise impacts on wildlife including sensitive design of lighting to avoid creating a barrier to aquatic species or foraging bats on watercourses. Lighting would be limited to junctions; handrail lighting on the bridges for walkers, cyclists and horse riders; and side road approaches to junctions. Lighting would be designed to best practice to reduce light spill. LED luminaires would be used, which use less energy than conventional luminaires, while reducing light spill into adjacent areas. The Applicant has committed (commitment LV11 of the REAC [REP6-052]), to implementing best practice measures where practicable to ensure temporary lighting is avoided or directed away from heritage assets, residential and/or ecological receptors such as watercourses, woodland, badger setts, bat roosts and important commuting habitats. It is acknowledged that there would be some loss of low quality commuting habitat as a result of construction of the proposed scheme, particularly where the new A12 alignment is proposed and therefore the potential for localised severance. However, there is sufficient alternative commuting habitat which is generally of higher quality directly south of the new A12 alignment (particularly near junction 25) that would allow bats (especially barbastelle, which are less likely to use culverts) to divert for a short distance before resuming existing flight paths adjacent to the existing A12.
- 7.6.36 The Applicant has also worked with Essex County Council to identify locations where advanced planting may be practicable and may benefit bats. Following these discussions, and as documented in the Statement of Common Ground [REP7-027], Essex County Council is now in agreement with effects on and mitigation for bats.

Dormice

- 7.6.37 Essex County Council raised questions with respect to dormice during the Examination. The Applicant submitted a Supplementary Dormouse Report to Examination [AS-036] to present the results of additional surveys undertaken in 2022 for the gas main diversion. No dormice or evidence of dormice were recorded during the gas main diversion surveys carried out in 2022. In addition to this no dormice were recorded during previous surveys conducted for the wider scheme in 2017 and 2020 (Dormouse Survey Report [APP-130]). The Applicant has therefore concluded that dormice are likely absent from the footprint of the proposed gas main diversion and wider Order Limits. As documented in the Statement of Common Ground with Essex County Council [REP7-027], Essex County Council is now in agreement with this position.

Gas pipeline impacts

- 7.6.38 The need to divert the Cadent gas main is detailed within Section 4.2 of this Closing Statement. An explanation of the alternatives assessed to the proposed design is detailed within Section 5.6 of this Closing Statement.
- 7.6.39 Numerous representations were submitted during the Examination with respect to the gas main regarding the impact on ecological receptors, in particular from Maldon District Council and a local landowner. The Applicant has undertaken a suite of surveys by in order to assess the effects of the Cadent gas main on biodiversity receptors (as stated in item reference 97 of the Written submission of the oral case of ISH1 [REP3-012]):
- Phase 1 habitat data (Appendix 9.8: Phase 1 Habitat Survey Report [APP-132]).
 - Riparian mammal data (Appendix 9.10: Riparian Mammal Survey Report [APP134] and Supplementary Riparian Mammal Survey Report [REP2-029]).
 - Badger data (Appendix 9.2: Badger Survey Report [APP-126] and Supplementary Badger Survey Report [REP2-026]).
 - Bat data (Appendix 9.4: Bat Survey Report [APP-128] and Supplementary Bat Survey Report [AS-032]).
 - Dormouse data (Supplementary Dormouse Survey Report [AS-036]).
 - Botanical data (Supplementary Botanical Survey Report [REP2-027]).
 - Tree data (Supplementary Arboricultural Survey Report [REP3-008]).
 - Reptile surveys have also been undertaken by the Applicant to inform the detailed design of the proposed scheme:
 - Reptile survey report Blue Mills [REP2-028].
- 7.6.40 The Applicant has identified key receptors within the gas main corridor through field survey and consultation with third parties, and these are listed below (the valuation of importance is presented in brackets and aligns with DMRB LA 108 and Table 9.22 of Chapter 9: Biodiversity [APP-076]):
- Blue Mills proposed LWS (County)
 - Wet woodland priority habitat (National)
 - Lowland mixed deciduous woodland priority habitat (National)
 - Woodland subject to TPO 07/22
 - Potential veteran black poplar (National)
 - Transitional veteran oak trees (County)

- Potential otter holt (within the black poplar) (County)
- Low populations of slow worms and common lizards (Local)
- Barn Grove proposed LWS (County)
- Two hedgerows qualifying as priority habitat (National)

7.6.41 Following completion of surveys, it has been concluded dormice are likely to be absent from the entire Order Limits and would therefore not be impacted by the proposed scheme. There is therefore no potential for effects on dormice as there is no pathway to impact.

7.6.42 No evidence of water vole was recorded within habitats at Blue Mills. The landowner submitted video footage of a small mammal to the Examination [REP2-072], however it is the Applicant's view that this is either a bank or field vole (not discernible due to video quality but definitively not water vole due to size, tail length and general appearance). Water vole were not recorded in other sections of the River Blackwater or the River Brain, which converges with the River Blackwater in this location. Water vole are therefore considered likely absent from the Blue Mills area of the proposed scheme, although preconstruction surveys for water vole would be undertaken by the Applicant to ensure this has not changed, as committed by BI11 in the REAC [REP6-052].

7.6.43 The Applicant has demonstrated application of the mitigation hierarchy to the design of the proposed scheme including the Cadent gas main diversion. The Applicant has sought to avoid impacts, firstly through consideration of alternative options which included an assessment of environmental effects amongst other considerations (see Section 7 of this Closing Statement). The Applicant has also sought to avoid and minimise impacts within the preferred corridor through the following REAC commitments [REP7-015]:

- LV13, to retain as much existing vegetation as practicable;
- LV15, to reduce the working width as far as reasonably practicable through woodland and where the gas main diversion crosses hedgerow field boundaries and use trenchless techniques for all main river crossings;
- BI3, exclusion zones would be marked around retained parts of Blue Mills proposed LWS in accordance with the Retained and Removed Vegetation Plans [REP6-032, REP6-033].
- BI48, the arboricultural survey confirmed that the mature black poplar within the Order Limits at Blue Mills proposed LWS qualified as a potential veteran tree. The results of the arboricultural survey will be used to inform an appropriate control, whereby a combination of route and construction methodology would be designed to minimise the impacts on the black poplar and other sensitive features in this area.
- BI50, the Cadent gas pipeline, Work No. U69, would be installed using no-dig techniques underneath the River Blackwater and the woodland subject

to TPO 07/22 at Blue Mills. The line, depth and locations of temporary works required to install the pipe including the launch and receptor pits would be selected to minimise impacts to the woodland protected by the TPO, the Blue Mills proposed LWS, the black poplar and otter holt at grid reference TL 83264 1361, and transitional veteran trees T2045 and T2078 as identified in the Supplementary Arboricultural Survey Report [REP3-008];

- RDWE38, to use trenchless techniques under the River Blackwater;
- RDWE61, hydrological impacts on wet woodland at Blue Mills proposed LWS would be mitigated through incorporating impermeable material to prevent flow of water along any trenches excavated during construction.

7.6.44 Where impacts cannot be avoided the Applicant has committed to mitigation measures, specifically REAC commitment LV14 [REP6-052], to replant along the easement in accordance with the utility company's guidance and best practice. As per commitment LV10 of the REAC [REP6-052], the Applicant is committed to seeking opportunities for planting early in the construction phase where practicable to minimise the duration of impacts.

7.6.45 As stated within the notes on Sheet 8 of 21 of the Retained and Removed Vegetation Plans – Part 1 [REP6-032], the Applicant would restrict vegetation loss to a corridor of a maximum of 30m within the Order Limits for the gas main (secured by commitment LV15 of the REAC [REP6-052]). The Applicant has, as stated in the Written Submission of Oral Case ISH1 [REP3-012], drawn the Order Limits for the diversion at a width greater than 30m to enable Cadent to determine the most appropriate route for the gas main, taking into consideration sensitive environmental receptors and ground conditions, as is the usual procedure when consenting such infrastructure. By having a wider Order Limits the Applicant has allowed for greater flexibility in the design for this purpose. The Retained and Removed Vegetation Plans [REP6-032, REP6-033] therefore present a worst-case scenario and there is potential for the scale of the impact to be reduced through detailed design (as acknowledged by Maldon District Council in paragraph 3.1 of their Deadline 5 submission [REP5-044]). During Examination, the Applicant updated the REAC [REP7-015] to include commitment BI50 which would avoid loss of trees from TPO 07/22 through no-dig techniques underneath the woodland which would further reduce construction impacts.

Blue Mills proposed LWS, lowland mixed deciduous woodland and wet woodland

7.6.46 The extent of Blue Mills proposed LWS is shown within Figure 1 of the REAC [REP6-052] of this document. Botanical surveys undertaken by the Applicant have confirmed the site predominantly comprises lowland mixed deciduous woodland, however the Applicant has identified a localised area of wet woodland (as shown on Figure 1 of the Supplementary Botanical Report [REP2-027]). Wet woodland is a ground water dependent terrestrial ecosystem, whereas lowland mixed deciduous woodland is not dependent on groundwater. Taking into account commitment BI50 which minimises the effects on the

proposed LWS and the priority woodland habitats, the Applicant has identified that on a worst-case basis the proposed LWS and woodland habitats have the potential to be affected through loss of a 30m corridor of habitat through the northern part of the proposed LWS (which comprises lowland mixed deciduous woodland) due to clearance of vegetation to enable construction of the gas main (NB the more southerly part of the proposed LWS overlaps with TPO 07/22 and therefore would not be impacted by loss of a 30m corridor of trees). It is assumed that the no-dig technique employed to install the pipeline would not create a permeable pathway and, therefore, no significant effects would be expected during operation of the proposed scheme due to changes in hydrology.

- 7.6.47 In addition to REAC commitment BI50 [REP6-052]) to minimise direct impacts to the more southerly section of the proposed LWS which comprises the wet woodland and parts of the lowland mixed deciduous woodland, the Applicant has also committed (Commitment LV15 of the REAC [REP6-052]) to reducing as far as reasonably practicable the working width for the installation of the gas main diversion to the remainder of the proposed LWS, thus minimising impacts to the site, however it is still possible a corridor of up to 30m would be cleared through the part of the proposed LWS which does not overlap the TPO.
- 7.6.48 The Applicant would mitigate this impact through new planting, carried out in accordance with the utility company's guidance and best practice standards, as secured by commitment LV14 of the REAC [REP6-052]. There would be a no planting zone on and close to the edge of the pipeline. However, there would be scope to replant parts of the 30m corridor to reduce the width of the gap in the long term. Planting proposals would be developed at detailed design. The loss of the central part of the corridor would be a permanent effect, however it is the Applicant's view that this would effectively create a ride through the woodland. This would increase the diversity of habitats, providing open areas which may benefit some plant and insect species. Whereas other insects and plants, as well as birds and mammals, could benefit from the woodland edge habitat.
- 7.6.49 In accordance with LA 108, the Applicant has considered whether the integrity of the proposed LWS, lowland mixed deciduous woodland and wet woodland would be affected when determining the level of impact. Although construction of the pipeline would lead to a loss of trees through part of the proposed Blue Mills LWS, as described above, the ride which would be created may benefit some species. The Applicant therefore concludes that the adverse impact caused from constructing the pipeline is temporary and would not affect the integrity of the resource in the long term. In accordance with DMRB LA 108, the level of impact is assessed as negligible adverse, particularly considering the removal of vegetation is only limited to part of the proposed LWS as a consequence of REAC commitment BI50 [REP6-052]. The residual significance of effect of a negligible adverse impact on a county receptor (Blue Mills proposed LWS) or national receptor (lowland mixed deciduous woodland) is neutral or slight adverse (not significant). There would be no pathway to effect for the wet woodland at Blue Mills.

TPO 07/22, potential veteran black poplar and transitional veteran trees

- 7.6.50 The arboricultural survey [REP3-008] undertaken by the Applicant confirmed a female black poplar within the woodland at Blue Mills. A second black poplar is located south of the Order Limits. The survey also confirmed the tree is a potential veteran (defined by the Applicant as a tree not formally designated but assessed as part of the A12 field surveys to qualify as a veteran tree). The arboriculture survey also confirmed mature oaks classified as transitional veterans (i.e., the next generation of veteran trees), but at the current time would not be assessed as potential veteran trees.
- 7.6.51 As stated above, the width of the Order Limits along the gas main diversion will enable flexibility with respect to the alignment of the pipeline. The Applicant has communicated the location of the black poplar to Cadent and has highlighted the presence of the mature oaks.
- 7.6.52 As per REAC commitment BI50 [REP6-052], the Applicant has confirmed the gas pipeline (Work No. U69) will be installed using no-dig techniques underneath the River Blackwater and the woodland subject to Tree Preservation Order 07/22 at Blue Mills proposed LWS. The line and depth would be selected to minimise impacts to the woodland protected by the TPO, the Blue Mills proposed LWS, the black poplar and otter holt at grid reference TL 83264 1361, and traditional veteran trees T2045 and T2078 as identified in the Supplementary Arboricultural Survey Report [REP3-008].
- 7.6.53 As stated on page 208 of the Applicant's Comments on Information Received at Deadline 5 [REP6-090], work to be carried out to trees subject to TPOs including Maldon District Council TPO 07/22 Blue Mills are detailed within Schedule 9, Part 4 of the dDCO [REP7-005]. As per row 8 of the table, TPO 07/22 Blue Mills would only be subject to felling, pruning and lopping of branches. No work to roots would be permitted.
- 7.6.54 The Applicant therefore concludes that with consideration of REAC commitment BI50 there would be no pathway to effects on TPO 07/22, the potential veteran black poplar and the transitional veteran trees, impacts are therefore avoided and are therefore assessed as not significant.

Potential otter holt

- 7.6.55 Representations were received from Maldon District Council with respect to the potential for impacts to otters through disturbance if using the potential holt at the time of construction.
- 7.6.56 The Applicant has confirmed that impacts on otters would be mitigated. As per commitment BI4 of the REAC [REP6-052], works would be timed to avoid sensitive periods for protected species where reasonably practicable and appropriate. Where this cannot be achieved, this would be managed in accordance with advice and, where required, supervision from an Ecological Clerk of Works and in accordance with any protected species licence requirements. The Applicant has also committed (BI9 of the REAC [REP6-052]) to buffer zones around sensitive features such as otter holts which would be implemented as directed by the Ecological Clerk of Works. As per commitment BI34 of the REAC [REP6-052], should the Applicant identify any new resting

places, and should they be in a place that would be disturbed, damaged or destroyed as a result of the proposed scheme, the Applicant would obtain a European Protected Species Mitigation licence from Natural England to agree the specific mitigation approach. Lastly, commitment BI50 requires the Applicant to use a no-dig technique underneath the River Blackwater and the woodland subject to TPO 07/22 at Blue Mills with the line and depth selected to minimise impacts to the otter holt at grid reference TL 83264 1361.

- 7.6.57 The Applicant has explained, as stated on page 21 of the Applicant's Comments on Maldon District Council's Local Impact Report [REP3-018], that whilst, there is potential for noise and vibration impacts to otters if using the potential holt at the time of construction (depending on the alignment of the gas main diversion), once the installation equipment is in the ground the soil would attenuate any noise from the machine as it moves through the ground.
- 7.6.58 The plant at the launch and reception points of the tunnel boring machinery are small items and would not generate high levels of noise. However, when the location of the plant in relation to the otter holt are known, the Applicant would undertake calculations to predict the expected noise level. If the expected noise level is high, then the Applicant has explained that mitigation measures can be provided as described below.
- 7.6.59 Where possible, tunnel boring would be started at the furthest point from the otter holt. This would enable any vibration to increase gradually and thus reduce the sudden nature of any disturbance from vibration.
- 7.6.60 Tunnel boring would be a continuous operation, thus avoiding starting and stopping of the machine. The start-up operations of the equipment can often generate the highest levels of vibration. A continuous operation may require night and/or weekend working.
- 7.6.61 The commencement of tunnel boring would be avoided during periods of use by otters.
- 7.6.62 In the event that the expected noise levels cannot be mitigated, as a last resort the Applicant would obtain a European Protected Species Licence from Natural England for disturbance of the holt (in accordance with REAC commitment BI34 [REP6-052] as detailed above) to avoid breach of wildlife legislation.
- 7.6.63 The Applicant estimates that the trenchless crossing of the River Blackwater and woodland would take several weeks to complete (i.e., would be a temporary impact) and would be undertaken within daylight hours (thus avoiding night-time disturbance when otters are more active and potential impacts to their movements may be greater). Otter would also retain access to the potential holt following completion of the works.
- 7.6.64 It is the Applicant's view that applying a worst-case scenario the machinery for the trenchless crossing would create a vibration level of between 1 and 10mm/s peak particle velocity which in accordance with Table 3.33 of DMRB LA 111 Noise and vibration would be a moderate level of impact. Human thresholds have been used as a proxy in the absence of studies on the impact of ground vibration on otters. In accordance with DMRB LA 108 and as per Table 9.9 of

Chapter 9: Biodiversity [APP-076] this would result in a slight (not significant) effect on a County value receptor.

7.6.65 The Applicant is continuing to work with Cadent to develop the design and construction of the proposed gas main diversion, fully taking into consideration the potential otter holt, among other environmentally sensitive constraints.

7.6.66 In summary, it is anticipated that the trenchless crossing of the River Blackwater and TPO 07/22 (LV15 and BI50 in the REAC [REP6-052]), would avoid impacts to otters and the potential holt in the black poplar. Disturbance impacts would be temporary and of short duration. With mitigation, it is considered that there would be no long-term or significant impacts on the conservation status of otters.

Reptiles

7.6.67 The species and size of reptile populations identified by the Applicant at Blue Mills are consistent with that across the rest of the proposed scheme. Mitigation proposed by the Applicant is detailed within paragraphs 9.10.90 to 9.10.98 of Chapter 9 [APP-076] and secured by commitment BI40 of the REAC [REP6-052]. As stated in Table 9.29 (summary of construction effects) and Table 9.31 (summary of operational effects), effects on reptiles are assessed as slight beneficial and neutral respectively.

Barn Grove proposed LWS

7.6.68 Representations received during Examination identified Barn Grove proposed LWS approximately 25m east of the Order Limits for the gas main diversion. The Applicant has confirmed (Applicant's Comments on Maldon District Council's LIR [REP3-018]) that the woodland within the proposed Barn Grove LWS is not listed on the Ancient Woodland Inventory (Natural England, 2021, The Ancient Woodland Inventory).

7.6.69 The proposed Barn Grove LWS would not be subject to any vegetation loss or other direct impacts as a result of the gas main diversion (see Sheet 9 of the Retained and Removed Vegetation Plans, Part 1 [REP6-032]).

7.6.70 The Applicant acknowledges the presence of a very large population of opposite-leaved golden-saxifrage, an Essex Data Red List species, within the proposed Barn Grove LWS and that this is likely the largest population in Maldon District. Given the proposed Barn Grove LWS is outside the Order Limits, no impacts are anticipated on the population of this flowering plant from the gas main diversion.

7.6.71 Given the proximity of the proposed Barn Grove LWS to the proposed Blue Mills LWS, the Applicant acknowledges there is potential for protected and notable species of fauna recorded within the proposed Blue Mills LWS to move freely between the two sites, using hedgerow 002 and the ditch that runs alongside it (Supplementary Botanical Survey Report [REP2-027]) as a commuting and/or foraging route. The severance of this hedgerow, which connects the two sites and will be crossed by the gas main diversion, may temporarily impact free movements of species between the sites. However, due to the standard mitigation listed below, this impact is considered temporary and

reversible and would be an effect on the individual species as opposed to the potential LWS.

- 7.6.72 Based on the nature and relatively short duration of works associated with the construction of the gas main diversion, there are not anticipated to be any resultant significant air quality, noise and vibration impacts at the proposed Barn Grove LWS. The implementation of standard mitigation measures will further minimise any potential impacts. According to the citation, proposed Barn Grove LWS supports wet woodland habitat either side of a ditch which flows through the site. The ditch continues west and would be crossed by the gas main diversion. The map in the proposed LWS citation indicates the woodland is upstream of where the gas main diversion crosses the ditch and would therefore be unaffected by construction across the ditch. However, the existing and proposed REAC commitments outlined above with respect to the proposed Blue Mills LWS (LV14, LV15 and BI50 [REP6-052]) could also be implemented with respect to this ditch crossing to ensure no impacts from hydrology.
- 7.6.73 The Applicant has identified the potential for operational effects on the wet woodland component of the LWS should the backfilled trench at the pipeline crossing draw water away from the surrounding habitats, however this is considered unlikely given mapping indicates the ditch is downstream of the wet woodland component of Barn Grove LWS.
- 7.6.74 The standard and embedded mitigation measures detailed within Section 9.10 of Chapter 9: Biodiversity [APP-076] (and as committed to in the REAC [REP6-052]) are of relevance to the proposed Barn Grove LWS, in particular:
- Pre-construction surveys using current best practice guidance would be undertaken for bats, barn owl, badger, otter, water vole and reptiles to update baseline surveys prior to construction (commitment BI11 of the REAC [REP6-052]) due to the potential for wildlife to create new roosts, setts, holts, nests and burrows. These data would be used to inform mitigation licences where required.
 - Ecological Clerk of Works would be employed where relevant to the works being undertaken (commitment BI12 of the REAC [REP6-052]).
 - Following inspection by the Ecological Clerk of Works, clearance of habitats within the construction area would be conducted under appropriate supervision where there is potential for impacts to protected species (commitment BI5 of the REAC [REP6-052]).
 - Works would be timed to avoid sensitive periods for protected species where reasonably practicable and appropriate (commitment BI4 of the REAC [REP6-052]).
 - Buffer zones around sensitive features such as confirmed bat roosts, badger setts, otter holts, water vole burrows, birds' nests and watercourses would be implemented as directed by the Ecological Clerk of Works (commitment BI9 of the REAC [REP6-052]).

- Exclusion zones would be marked where appropriate around protected habitat areas such as trees, woodlands, hedgerows and watercourses to avoid accidental damage and retain vegetation in accordance with the Retained and Removed Vegetation Plans [REP6-032, REP6-033] (commitment BI2 of the REAC [REP6-052]).
- The working width for the installation of the gas main diversion would be reduced as far as reasonably practicable through woodland and where the gas main diversion crosses through hedgerow field boundaries. Trenchless crossings (i.e., no-dig techniques) would be considered where reasonably practicable (commitment LV15 of the REAC [REP6-052]).
- Replanting along the easement of the gas main diversion would be carried out in accordance with Cadent's guidance and best practice standards (commitment LV14 of the REAC [REP6-052]).
- Pollution of watercourses from surface water runoff during construction would be prevented through standard mitigation (commitment RDWE32 of the REAC [REP6-052]).

7.6.75 To mitigate impacts associated with construction plant and equipment noise, the Applicant would undertake standard measures as necessary during the construction phase of the works, including programming works to minimise work outside of normal work hours where practicable and specifying use of lower-noise emitting equipment where practicable (commitment NV1 of the REAC [REP6-052]).

7.6.76 With regard to air quality, a Dust Management Plan would be developed and implemented based on the Dust Management Plan provided in the first iteration Environmental Management Plan. The Dust Management Plan would adopt a range of industry standard good practice construction phase dust mitigation and monitoring measures, and general control measures in compliance with DMRB LA 105 (commitment AQ1 of the REAC [REP6-052]).

7.6.77 The Applicant has assessed the level of impact in accordance with DMRB LA 108 and Table 9.8 of Chapter 9 [APP-076] as negligible adverse (not significant).

Hedgerows

7.6.78 Hedgerow surveys undertaken by the Applicant [REP4-064] determined that neither of the two hedgerows which would be crossed by the gas main diversion qualified as 'important' under the hedgerow regulations, however both qualified as priority habitat. The hedgerows are therefore assessed as being of National value in accordance with DMRB LA 108 and as per Table 9.22 of Chapter 9 [APP-076]. With the implementation of mitigation (specifically commitment LV15, to reduce the working width as far as reasonably practicable through where the gas main diversion crosses hedgerow field boundaries, commitment LV14, to replant along the easement in accordance with the utility company's guidance and best practice, and commitment LV10 of the REAC [REP6-052], opportunities for planting early in the construction phase would be sought where practicable), impacts to the hedgerows are assessed as temporary and there

would be no effect on the integrity of the resource. Therefore, as stated in Chapter 9 [APP-076] there would be no significant effects on hedgerows.

Landscape and visual impacts

- 7.6.79 Representations were received from Interested Parties throughout the Examination process, regarding the landscape and visual impacts that would be caused by the loss of vegetation along the gas main diversion, especially because there would be restrictions to replanting along the easement.
- 7.6.80 The Supplementary Arboricultural Survey Report [REP3-008] was published at Deadline 3. This assessed the trees along the gas main diversion in the vicinity of the River Blackwater, including the woodland subject to Tree Preservation Order at Blue Mills, which was made following DCO submission (TPO 07/22). The survey identified five A Grade trees, one of which was assessed as a potential veteran (black poplar). The Retained and Removed Vegetation Plans were updated at Deadline 6 to illustrate the TPO designation and trees of status [REP6-032 and REP6-033].
- 7.6.81 While the Retained and Removed Vegetation Plans [REP6-032 and REP6-033] illustrate trees at risk within the full extent of the lateral limits of deviation (for the gas main diversion), the Environmental Statement assumes vegetation loss would be restricted to a 30m corridor as a realistic worst-case assessment. In other words, the actual width of construction for the gas main diversion would typically be much narrower than the limits of deviation, as described in Section 2.6 and shown in Plate 2.7 of Chapter 2: The Proposed Scheme [APP-069]. It may also be feasible to retain some of the other trees identified as trees at risk on the Retained and Removed Vegetation Plans [REP6-032 and REP6-033]. This would be determined at the detailed design stage.
- 7.6.82 The Applicant is working with Cadent to limit the actual impact of the gas main diversion on the woodland at Blue Mills. The Applicant is committed to refining routes of final utility diversions and the gas main diversion and methods of construction to retain as much existing vegetation as practicable, in particular mature vegetation and woodland (LV13 of the REAC [REP6-052]). To minimise impacts, the working width for the installation of the gas main diversion would be reduced as far as reasonably practicable through woodland and where the gas main diversion crosses through hedgerow field boundaries. All main river crossing(s) would be installed using trenchless techniques. Trenchless crossings would be considered where practicable (LV15 of the REAC [REP6-052]) and is committed by BI50 under the TPO 07/22.
- 7.6.83 Landscape effects are assessed within Appendix 8.2: Landscape effects schedule, of the Environmental Statement [APP-120], where the gas main diversion is assessed as part of the wider proposed scheme. The gas main diversion largely falls within landscape sub area A9A. In year one of operation, the assessment notes that the gas main diversion would present changes to the pattern of the low-lying valley landscape as a result of loss of woodland and characteristic willow plantations along the River Blackwater. In year 15 of operation, the assessment notes that the gas main diversion easement would restrict the capacity to reinstate woodland and willow plantation within the River Blackwater Valley. As stated under mitigation LV14 in the REAC [REP6-052],

replanting along the easement of the gas main diversion would be carried out in accordance with the utility company's guidance and best practice standards. The assessment concludes that for landscape sub area A9A there would be effects of large adverse significance in year one and effects of moderate adverse significance in year 15.

- 7.6.84 Visual effects are assessed within Appendix 8.3: Visual effects schedule, of the Environmental Statement [APP-121]. Representative viewpoint 35 assesses visual effects from PRow 268_23, east of woodland along the River Blackwater. The assessment in year one of operation from representative viewpoint 35 acknowledges that loss of vegetation would open up views across the Blackwater River Valley towards the A12. The assessment concludes that there would be a significant effect (moderate adverse) for users of the PRow in year one of operation. In year 15 of operation, the assessment notes that establishment of mitigation planting within the gas main diversion easement would help to reinstate the character of the view of the Blackwater River Valley.
- 7.6.85 As per commitment LV14 of the REAC [REP6-052], planting along the gas main diversion would be carried out in accordance with the utility company's guidance and best practice standards. Where woodland vegetation is lost and trees cannot be replaced *in situ* due to the restrictions of utility easements, native shrub planting would be used in line with the relevant utility company's guidance. Where tree lines and tree belts are lost and cannot be replaced due to the restrictions of utility easements, native hedgerow planting would be used in line with the relevant utility company's guidance. There would be a no planting zone on or close to the edge of the pipeline. However, there would be scope to replant parts of the 30m corridor to reduce the width of the gap in the long term. Planting proposals would be developed at detailed design.

Main River Crossings

- 7.6.86 The Environment Agency has raised concerns relating to the potential for impacts on riparian mammals (particularly otter) and fish as a result of the proposed two new culverts (Domsey Brook and Rivenhall Brook); extensions of the existing crossings of the Domsey Brook and the Roman River, and extension of the current bridge crossing of the River Brain. As stated by the Environment Agency in paragraph 1.5.10 of their Written Representation [REP2-054], 'replicating the existing structure [Ashman's Bridge] will not create a barrier to fish or mammals. Therefore, we have no objection to the proposed structure'.
- 7.6.87 Chapter 9 Biodiversity [APP-076] concludes no significant effects on riparian mammals or fish, or any other receptor, as a result of the proposed main river crossings. In addition, as stated in Section 9.10 of Chapter 9 [APP-076] (and again in the Applicant's Comments on Written Representations [REP3-009]), there would be significant beneficial impacts on water vole associated with habitat creation, particularly within ecological mitigation areas south of junction 19 and south of the River Brain, where pond and ditch networks are proposed (as shown on Figure 2.1 Environmental Masterplan [APP-086 and APP-087]).

- These areas would provide an increase in both the quality and area of water vole habitat available (paragraph 9.11.181 of Chapter 9 [APP-076]).
- 7.6.88 The Applicant has provided further detail on the impacts of individual river crossings on protected species in the Technical Note on Proposals for Main River Crossings [REP6-095]. See also the Applicant's response at Deadline 6 within the Statement of Common Ground [REP6-061] and Applicant's Comments on information received at Deadline 5 [REP6-090].
- 7.6.89 The Applicant is providing a suite of mitigation measures for riparian mammals to reduce the likelihood of fragmentation and facilitate continued safe passage of these species across the proposed scheme. The Applicant has designed the culverts in accordance with CIRIA guidance (C786). All new and widened culverts exceed the minimum dimensions specified for riparian mammals. Based on the literature currently available with regards to otters and water vole the Applicant does not consider the proposed crossings would reduce permeability or introduce any new barriers to riparian mammals. In addition to installing mammal ledges on new culverts, the Applicant is retrofitting mammal ledges to existing structures (as per commitment BI32 of the REAC [REP6-052]) which would be an improvement on baseline conditions.
- 7.6.90 Fencing would be installed as a supplementary measure to further mitigate mortality of otters. Located in areas where the A12 crosses the main watercourses it would direct otter to the culvert entrances which provide safe crossing points under the A12 and would dissuade them from entering the carriageway.
- 7.6.91 While the Applicant has taken reasonable steps to obtain data on riparian mammals in the study area, it is acknowledged there is a lack of data to support or refute that culverts are an effective mitigation measure for mammal passage. Therefore, the Applicant has committed to undertaking post-construction monitoring of the structures with proposed mammal ledges to determine whether the ledges are enabling safe passage of wildlife (including otters) under the A12 (as per commitment BI49 in the REAC [REP6-052]) and these data would be used to inform the design of river crossings for future National Highways projects.
- 7.6.92 As explained in the Technical Note on Proposals for Main River Crossings [REP6-095], the Applicant does not consider the main river crossings to be a barrier to fish and eel passage. In addition, the invert of the proposed new Main River culverts would be buried beneath the natural bed of the watercourse to allow the continuation of sediment conveyance and reduce the impact on local flow dynamics (as committed to in RDWE 39 in the REAC [REP6-052]). This would replicate the natural stream bed material within the structure to aid permeability to fish and eels.
- 7.6.93 Fish, otters and water vole are valued as County level receptors in accordance with DMRB LA 108. In accordance with Table 3.13 of DMRB LA108, in order to have a significant effect (i.e., moderate or above) on a County level receptor the proposal would have to result in a major adverse level of impact. Table 3.11 of LA 108 defines a major adverse impact as 'permanent or irreversible damage which affects the integrity or key characteristics of the resource'. It is the

Applicant's view that the proposed scheme would not lead to permanent or irreversible damage which would affect the integrity or key characteristics of the resource.

Biodiversity Net Gain

- 7.6.94 While the Applicant has sought to demonstrate to the Examining Authority and key stakeholders how it will meet its aspirations for Biodiversity Net Gain (BNG) across the proposed scheme (Biodiversity net gain report [APP-138], Metric 3.0 calculator [REP6-083], Section 9.4 of the Environmental Statement Addendum [AS-098]), there is no requirement in law or policy for promoters of NSIPs to deliver BNG.
- 7.6.95 BNG has been agreed with Natural England and Essex County Council as evidenced within the SoCG ([REP7-019] and [REP7-027] respectively). The Applicant notes Maldon District Council's requests for the Applicant to calculate BNG at a district level, however as stated in the Applicant's Comments on Information Received at Deadline 5 [REP6-090], calculations have been done at a scheme-wide level and the Applicant does not propose to undertake them at a district level. It should be noted it would not be possible to achieve further net gain within Maldon District without further permanent land take and that land cannot be compulsory purchased for the purpose of biodiversity net gain alone.
- 7.6.96 The Applicant also notes the Environment Agency's comments with respect to combining rivers and ditches in the metric. However, as stated within the Applicant's Comments on Written Representations (paragraph 1.6.4 of [REP3-009]), Metric 3.0 is designed to include both rivers and ditches in the rivers and streams metric, rather than separating them. They are both individual habitat types in the rivers and streams metric and distinctiveness multipliers are assigned as such to account for that. There is no statement in the user guide for Biodiversity Net Gain Metric 3.0 suggesting to separate those habitat types defined as 'other rivers and stream' and those defined as 'ditches' into separate metrics. Therefore, to do as such would deviate from the methodology for assessing biodiversity units in the rivers and streams metric. The 0.36% net gain detailed in the footnote of Appendix 9.14: Biodiversity Net Gain Report [APP-138] does show that some gain has been achieved for the 'other river and stream' habitat type. A notable increase in the 'ditches' habitat type of 293.29% is also a major driver in the final, overall score for the Rivers and Streams Metric.
- 7.6.97 The BNG calculations carried out by the Applicant in relation to the DCO Change Application (as submitted to the Examining Authority at Deadline 5 [AS-098]) present updated BNG predictions of 28.4% for habitats, 34.49% for hedgerows and 156.73% for rivers. While there is a slight increase in habitats, a slight reduction in hedgerows and no change for rivers as a result of the proposed changes, the predicted BNG for all habitat types remains substantially greater than the provision for the anticipated mandatory requirement to provide a 10% BNG (as associated with the Environment Act).

- 7.6.98 The Applicant will undertake interim BNG calculations throughout detailed design and will continue to seek opportunities to maximise biodiversity net gain.

7.7 Water environment

Culverts

- 7.7.1 The Environment Agency has raised concerns relating to two new culverts (Domsey Brook and Rivenhall Brook); extensions of the existing crossings of the Domsey Brook and the Roman River; and extension of the current bridge crossing of the River Brain, replicating the existing design, which the Environment Agency states adversely affects flows in summer with consequences for fish and eels. The Environment Agency has contended that open span bridges should have been explored in place of the proposed culverts for main river crossings. It remains unclear whether the Environment Agency is contending that the DCO should be refused as a result of this submission or whether it contends that this is a factor which should be weighed in the balance against the scheme.
- 7.7.2 The Applicant has outlined its position in the Technical Note on Proposals for Main River Crossings [REP6-095]. See also the Applicant's response at deadline 6 with the SoCG [REP6-061] and Applicant's Comments on information received at Deadline 5 [REP6-090].
- 7.7.3 As explained above in Section 5, alternative options to a proposed development can be relevant in decision making in exceptional circumstances.
- 7.7.4 The Applicant has carefully appraised the likely impacts of its proposals. It recognises that the proposed culverts will have adverse effects. However, with the mitigation proposed it does not identify the culverts as giving rise to likely significant effects. The Applicant has demonstrated that these works would not introduce further barriers to species movement on these watercourses, and proposed mitigation including placement of natural substrate in the culverts and mammal ledges for passage during high flows (commitments RDWE 39, RDWE 42 and BI32 in the REAC [REP6-052]). The Environment Agency's position is that these commitments are not sufficient. The Environment Agency has also voiced concern on the need to see alternatives. The Applicant's position is that the environmental assessment has been undertaken in accordance with the NNNPS (see NNNPS Accordance Tables [APP-251]) and in line with the mitigation hierarchy as presented in DMRB LA 104, whereby the Applicant has sought to avoid impacts where possible. As detailed in Environmental Statement Chapter 3: Assessment of Alternatives [APP-070], the refinement of Option 2 for the proposed scheme provided environmental benefits including reducing potential development within the floodplain. By using the existing crossing of the River Blackwater (Ashman's Bridge), potential effects from severance of the river from construction of a new structure were avoided.
- 7.7.5 The Applicant has assessed the likely significant effects of culverting in Chapter 14: Road Drainage and the Water Environment of the Environmental Statement [APP-081 (paragraph ref 14.11.39 and Table 14.16; and paragraph ref 14.13.1 to 14.13.17)]. This concludes that the proposed scheme would not give rise to

any significant residual effects [APP-081 (paragraph ref 14.13.18; Table 14.19)].

- 7.7.6 No significant adverse effects were identified for the main river crossings, no likely significant effects have been identified under the Habitats Directives as explained in the Habitats Regulations Assessment No Significant Effects Report [APP-201] or the Water Environment Regulations (WFD Regulations) Compliance Assessment [APP-159], and project design and mitigation for the main river crossings do not significantly affect flood risk (Flood Risk Assessment [APP-162]).
- 7.7.7 Since the Applicant's assessment does not identify any 'conspicuously harmful effects' arising from the proposed culverts, no duty arises as a matter of law for the Secretary of State to consider alternative proposals to them.
- 7.7.8 The Environment Agency has not presented its own assessment of the likely significant effects of the proposed culverts. The Environment Agency has not asserted and does not assert that the proposed culverts will give rise to significant adverse effects.
- 7.7.9 The Environment Agency has produced no assessment of the degree of impact that it says the culverts would cause conducted by a professionally qualified expert. Thus, the Environment Agency is not stating that the proposed scheme would have significant adverse effects. Rather, it is asserting that the project creates a risk of significant adverse effects.
- 7.7.10 No reasoned assessment has been produced by the Environment Agency to support the assertions made. Nothing has been produced by the Environment Agency which addresses in detail the existing baseline conditions, which include culverts and barriers to the movement of fish, mammals and reptiles. No assessment of the incremental effect of the proposed development has been produced by the Environment Agency.
- 7.7.11 The result is that the issues between the Applicant and the Environment Agency have to be determined by reference to the evidence. It is for the Secretary of State to resolve the issues by reference to that evidence. On the one hand, the Applicant has produced a highly detailed impact assessment undertaken by suitably qualified experts. On the other hand, the Environment Agency has produced a series of unevidenced assertions and a case founded upon a misunderstanding of national policy.

The Flawed Policy Approach

- 7.7.12 The Environment Agency's position in its representations is that as a matter of policy **any** degree of harm must be avoided. This can be seen for example from paragraph 1.11 of REP5-031 where the Environment Agency states: it is the responsibility of the Applicant to accurately assess and show that there will be **no adverse effects** on ecology, including protected species, as a result of the proposals."
- 7.7.13 Further, in its Deadline 6 representations (REP6-104), the Environment Agency stated:

*“There is **the potential for** biodiversity to be significantly adversely affected with the proposals as they are presently set out, and we could not currently agree that the new crossings would result in **neutral impacts** on fish and otter. We would like to see some new meandering sections designed to compensate for the lengths of river darkened by increased crossing length.”*

- 7.7.14 As can be seen the Environment Agency appears to consider that the policy requirement is to achieve a neutral impact i.e. no adverse effect. This is a misinterpretation of policy which in fact requires no significant harm, as is explained further below.
- 7.7.15 Further, it is the Environment Agency’s contention that a risk of significant harm is sufficient to engage paragraph 5.25 and the need to avoid that risk of harm. This too is misconceived.
- 7.7.16 The first ground of claim in the A428 Black Cat DCO High Court challenge by the Transport Action Network was that the duty to avoid harm in paragraph 5.25 of the NNNPS was engaged by a risk of significant harm as opposed to a conclusion that significant harm would be caused – that was dismissed as unarguable by the Judge. It follows that as a matter of law, a risk of significant harm does not engage the mitigation hierarchy as set out in paragraph 5.25 of NNNPS. There is no assessment before the Examination which demonstrates that the proposed culverts would cause significant harm.

The Need to Consider Alternatives

- 7.7.17 As a result, it is not the case that the culverts give rise to such conspicuous effects that it would be irrational not to consider alternatives to them. Accordingly, as a matter of law there is no duty to consider alternative proposals to the culverts.
- 7.7.18 It follows that a duty to consider alternatives to the culverts could only arise if policy gives rise to an obligation on the part of the decision maker to consider alternatives. The Applicant submits that there is no relevant adopted policy which gives rise to such a duty.
- 7.7.19 The Environment Agency’s position continues to be that policy requires any degree of harm to be avoided (see above). Thus, since there is a degree of harm, the Environment Agency maintains that open span bridges should have been considered in place of the proposed culverts. However, it was not until REP5-031 that the Environment Agency identified the policies which it considers justifies its position.
- 7.7.20 It is important to note that, when responding to the Applicant’s submission that there is no policy requirement to consider alternatives, the Environment Agency did not identify any paragraph within the existing NNNPS which it states that any degrees of impact should be avoided. Indeed, such a submission would be obviously wrong for the following reasons.
- 7.7.21 NNNPS states at paragraph 5.25 that
- “As a general principle, and subject to the specific policies below, development should avoid **significant** harm to biodiversity and geological conservation interests, including through mitigation and consideration of*

reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.”

7.7.22 The policy in NNNPS is to avoid significant harm. Thus a duty to avoid such harm could only arise if the culverts gave rise to significant harm. As explained above however, the only professional assessment of the degree of harm before the Examination demonstrates that the proposed culverts do not give rise to significant harm to biodiversity. It is submitted that in the absence of significant harm arising as a result of the proposed culverts, there is no policy requirement to consider alternatives to them arising under the NNNPS.

7.7.23 The Environment Agency in REP5-031 goes on to refer to a number of paragraphs within the draft NNNPS (March 2023) and asserts that the draft NNNPS

“includes the requirement to apply the mitigation hierarchy, defined at paragraph 4.21 as the principle that environmental harm resulting from a development should as a first option be avoided, then adequately mitigated, or, as a last resort, compensated for. This is further detailed in paragraph 5.43 and 5.51.”

7.7.24 Paragraph 4.21 appears under the heading “Biodiversity Net Gain”. It states:

“Applicants should use the most appropriate version of the Department of Environment, Food and Rural Affairs (Defra) biodiversity metric (as advised by Defra) to calculate their biodiversity baseline and inform their biodiversity net gain outcomes, and to present this data as part of their application. Biodiversity net gain should be applied in conjunction with the mitigation hierarchy and does not change or replace existing environmental obligations.”

7.7.25 Thus, this paragraph relates to using the BNG metric. The draft NNNPS does not identify how BNG is to apply to NSIPs. This paragraph does not create a requirement to avoid all adverse impacts. Rather, the relevant policy test is to be found in draft paragraph 5.51:

*“As a general principle, and subject to the specific policies below, development should, at first **avoid significant harm to biodiversity** and geological conservation interests, including through consideration of reasonable alternatives. If avoidance is not possible, mitigation needs to be considered (as set out in paragraphs 5.43 to 5.49 above). Where significant harm cannot be avoided or mitigated it should be compensated for as a last resort, with on-site mitigation being considered prior to off-site. The Secretary of State will give significant weight to any residual harm.” (emphasis added)*

7.7.26 The policy framework for the mitigation hierarchy contained within the draft NNNPS is thus unchanged from that set out in paragraph 5.25 of the existing NNNPS: it is **significant harm** to biodiversity that is to be avoided.

- 7.7.27 Thus, in the absence of any significant harm (see above), the draft NNNPS does not support the Environment Agency's contention that any degree of harm gives rise to a policy duty to consider alternatives.
- 7.7.28 Draft NNNPS paragraph 5.43, also mentioned by the Environment Agency, is referred to in draft paragraph 5.51. It applies where significant harm cannot be avoided. It states:
- "5.43 To avoid harm or disturbance in line with the mitigation hierarchy the applicant should demonstrate that:*
- developments are designed to avoid the risk of harm and to minimise the footprint of the development and/or to retain the site's important habitat features*
 - developments are designed and landscaped to provide green corridors and minimise habitat fragmentation (for example using underpasses or green bridges to link habitats)*
 - during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works*
 - during construction and operation, best practice will be followed to ensure that risk of disturbance or damage to species or habitats follows the mitigation hierarchy (including as a consequence of transport access arrangements). For example, plan for construction work to be carried out at specific times to avoid sensitive times and location, such as the breeding season for wild birds and lifecycles of migratory fish."*
- 7.7.29 It is submitted that paragraph 5.43 cannot be read as giving rise to a policy approach which is different to that set out in paragraph 5.51. Paragraph 5.43 includes the phrase "in line with the mitigation hierarchy". That must mean in line with the hierarchy approach set out in paragraph 5.51. Accordingly, paragraph 5.43 does not give rise to a freestanding requirement to consider alternatives where any degree of harm arises; rather, it applies in a context where alternatives are to be considered only where significant harm arises.
- 7.7.30 In the light of the above, the Environment Agency's policy position is founded upon a failure to construe both the existing and the draft NNNPS appropriately. There is no general policy duty to avoid any and all degrees of harm; rather, there is a duty to avoid **significant** harm. Neither policy document supports the policy position which the Environment Agency contends that it does. To accept the EAs submission regarding the effect of the draft NNNPS would be to misinterpret policy and to err in law.
- 7.7.31 The proposed scheme has been assessed for compliance with the Water Framework Directive [APP-159]. This assessment concluded that the proposed scheme would not cause deterioration in the status of most identified quality/supporting elements, that it would not cause changes which would permanently prevent or compromise the Environmental Objectives being met in other water bodies, would not cause a permanent exclusion, or compromise achieving the objectives in other bodies of water within the same River Basin District and would not cause changes that would cause failure to meet good

groundwater status or result in a deterioration of groundwater status. The proposed scheme options would not cause deterioration in the status of any groundwater body. Thus, the Directive does not provide any legal or policy basis for requiring the assessment of alternatives to the proposed culverts.

- 7.7.32 The final element of policy to which the Environment Agency has referred in REP5-031 is its own internal policies which it has produced to the Examination. These policies are inconsistent with national policy as contained in the NNNPS and indeed as set out in the draft NNNPS. They are internal policies only. The Applicant does not believe that they have been subject to consultation with the public or other stakeholders. As such, it is submitted that they should be given little if any weight in the DCO decision making process. They certainly are an insufficient basis for suggesting that where a culvert gives rise to any degree of harm whatsoever a full alternatives option appraisal is required.
- 7.7.33 Further, in the present case, the Environment Agency's position on the A12 widening scheme is out of step with its approach on other projects. The Environment Agency has referred to the use of an open span bridge on the A47 Tuddenham scheme, however, that bridge was provided within a protected corridor and was justified by the degree of harm that would otherwise have arisen i.e. a culvert in that location would have given rise to significant adverse impacts. The open span bridge in that scheme does not set any kind of precedent against culverts generally; rather its provision is entirely in line with the submissions made above.
- 7.7.34 The Applicant has wide experience of dealing with the various regional offices of the Environment Agency and considers the approach adopted in the present case to be inconsistent with the position the Environment Agency has adopted in other regions elsewhere. Usually, it is important to give weight to the views of the Environment Agency, however the assertive position adopted by this region of the Environment Agency is not justified on the evidence. Its position is not justified by the less than significant harm that the culverts would be likely to cause. The Environment Agency's position is not justified by any legal duty to have regard to alternatives, its position in relation to policy is founded upon a misinterpretation of national policy and by reference to internal policies which are inconsistent with national policy and to be given no weight.
- 7.7.35 The Applicant submits that its proposals regarding the use of culverts accord with policy since they avoid significant adverse impacts.
- 7.7.36 The Environment Agency has also stated that it is not prepared to consent to the disapplication of their permitting regime under the DCO and will require the Applicant to submit applications for flood risk activity permits for the culverting. Furthermore, the Environment Agency states that they may consider it appropriate to refuse the flood risk activity permits on the basis that the culverting is environmentally damaging.
- 7.7.37 The Applicant has proposed changes to the dDCO and is no longer seeking to disapply the environmental permitting regulations through the DCO.
- 7.7.38 It is then important to consider whether the Environment Agency's position regarding those further consents represents a potential impediment to the scheme. It is submitted that it is not since the Environment Agency could not

use its powers to refuse consent of a scheme which the Secretary of State has approved.

- 7.7.39 In the event that the Secretary of State makes the DCO in its current form (i.e. including culverts in the design of the authorised development) that would include the culverts to which the Environment Agency has objected. Thus, the Secretary of State would have concluded that the Applicant and not the Environment Agency's position is to be preferred – he would in effect have overruled the Environment Agency's objection to the culvert.
- 7.7.40 As a matter of law, it would not then be open to the Environment Agency, in considering whether or not to grant the Environmental Permits, to act inconsistently with the Secretary of State's independent factual judgment on the issue and to refuse to grant the Environmental Permits on the basis that open span bridges should have been used instead of culverts. Those arguments would have been fully heard and rejected, and the Environment Agency would not retain the right to maintain and act upon its original opinion. The principle of that development would have been established by the grant of development consent.
- 7.7.41 This position is clear from case law, in particular the Court of Appeal in case of (R. v Warwickshire CC Ex p. Powergen Plc (1998) 75 P. & C.R. 89) ("Powergen"). Further details are provided in the Applicant's submission at Deadline 6: Technical Note on Proposal for Main River Crossings, Section 4.5 [REP6-095].
- 7.7.42 During ISH5 on 27 June 2023 the ExA suggested that, in light of the Environment Agency's stance on the issue of culverts, the Applicant should prepare a document to set out a Water Framework Directive Article 4(7) derogation on a without prejudice basis in the event that the ExA in preparing its report and the Secretary of State, as competent authority, would find this helpful in considering WFD requirements. Subsequently, at Deadline 7, the Environment Agency submitted representations in which it disagrees with aspects of the WFD assessment undertaken by the Applicant.
- 7.7.43 The Applicant is therefore undertaking the drafting of an Article 4(7) derogation without prejudice to the Applicant's position that the proposed scheme is compliant with WFD requirements. Although the Applicant is endeavouring to respond to the ExA's request prior to the close of the Examination, this may not be feasible because of the short period of time available for consultation with the Environment Agency.

Drainage at Inworth

- 7.7.44 Paragraph 5.108 of the NNNPS requires that the proposed scheme remains safe and operational for its lifetime and does not increase flood risk elsewhere. The Flood Risk Assessment addendum [AS-096] demonstrates how the drainage and flood mitigation proposals for the B1023 through Inworth have been developed to ensure that the road would remain operational in up to a 1% (1 in 100) plus climate change flood event.

- 7.7.45 The proposals both mitigate the impact of additional impermeable surfacing due to the proposed scheme (through improvements to the existing drainage network) and mitigate the existing surface water flood risk to the road (by the provision of flood storage areas) for events up to a 1% (1 in 100) plus climate change magnitude. As such, the proposed drainage and flood mitigation works at Inworth are considered to fully meet with the NNNPS requirements.

DMRB HEWRAT vs CIRIA Methodologies

Introduction

- 7.7.46 The assessment of the impact of the proposed scheme on surface water and groundwater quality is set out in the Water Quality Assessment Report [APP-158].
- 7.7.47 In summary, the assessment of impact has been undertaken in accordance with DMRB guidance and in particular DMRB LA 113 Road Drainage and the Water Environment. The methodology includes use of a detailed tool based on observed studies and investigations developed by National Highways in collaboration with the Environment Agency and other organisations around 2007/8 to predict the impact of pollutants from highway schemes to macroinvertebrates in the water environment.
- 7.7.48 Although the methodology outlined within DMRB LA 113 refers to use of CIRIA guidance documents throughout, including the SuDS Manual (CIRIA, c753, 2015), it should be clear that the approach by the Applicant to assessing the impact on water quality for discharge from all roads relating to the proposed scheme does not use the Simple Index Approach that forms part of the CIRIA SuDS Manual. The SuDS manual itself states that, as directed in Note 1 below Table 26.2, '*Motorways and trunk roads should follow the guidance and risk assessment process set out in Highways Agency (2009)*'*

*Note. HD45/09 which is referred to by Highways Agency (2009) has subsequently been updated to LA 113 Highways Agency (March 2020).

Compliance with the National Planning Policy

- 7.7.49 The proposed scheme has been assessed for compliance against the Planning Act 2008, the NNNPS and the NPPF, and this is referred to within Section 14.4 of Environmental Statement Chapter 14: Road Drainage and Water Environment [APP-081].
- 7.7.50 NNNPS paragraph 2.220 states that
- 'The Government's planning policies make clear that the planning system should contribute to and enhance the natural and local environment by, amongst other things, preventing both new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by, water pollution. The Government has issued guidance on water supply, wastewater and water quality considerations in the planning system. Where applicable, an application for a development consent order has to contain a plan with accompanying information identifying water bodies in a River Basin Management Plan.'*

- 7.7.51 NNNPS paragraph 2.222 states
‘For those projects that are improvements to the existing infrastructure, such as road widening, opportunities should be taken, where feasible, to improve upon the quality of existing discharges where these are identified and shown to contribute towards Water Framework Directive commitments.’
- 7.7.52 With regard to the water environment, NPPF Paragraph 174 e) closely reflects NNNPS paragraph 2.220.
‘Planning policies and decisions should contribute to and enhance the natural and local environment by:
e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;’
- 7.7.53 The water quality assessment undertaken for the proposed scheme considers 92 water discharge points from the road termed ‘outfalls’. Forty-six of the outfalls are assessed to require embedded mitigation to meet water quality standards, 29 outfalls are assessed not to require embedded mitigation but are designed to have mitigation which is considered a form of enhancement, and 17 outfalls do not require embedded mitigation and therefore do not have mitigation.
- 7.7.54 The assessment has identified that 46 (of 92) outfalls require embedded mitigation to ensure no significant effects on the water environment. Mitigation for the proposed scheme has been provided at all of these outfalls and is to be provided in the form of sustainable drainage features such as filter drains, swales and wet ponds. These features filter, adsorb and break down pollutants in road run-off.
- 7.7.55 In addition to the outfalls requiring embedded mitigation, a further 29 outfalls have been provided with water quality mitigation features typically in the form of wet ponds. These are located typically in locations where mitigation is required for reduction in hydraulic flows of water from the road. This is considered to be ‘enhancement’ above and beyond the requirements of the detailed DMRB assessment method for water quality.
- 7.7.56 The remaining 17 outfalls that, following the method of the DRMB, do not require embedded mitigation and have not been provided with mitigation. Locations where outfalls are not provided any mitigation were raised in Essex County Councils Local Impact Report (LIR) [REP2-005]. These outfalls have been referred to in numerous Representations as ‘no treatment outfalls’. A more detailed response to the LIR and subsequent ExA question is provided in REP4-055 ExQ2 2.18.3. Opportunities for providing further enhancements will be considered and discussed with relevant organisations as part of the ongoing detailed design process.

Conclusions

- 7.7.57 Using the established DMRB methodology, the proposed scheme assessment has identified the importance of water environment receptors including some of High importance. All receptors have been assessed for the magnitude of impact of the proposed scheme using the appropriate DMRB assessment methods. Where required by assessment, the proposed scheme provides embedded mitigation in the form of sustainable drainage systems (SuDS). Results show that many outfalls passed the HEWRAT routine runoff assessments at the Step 2 stage, prior to consideration of mitigation. However, measures that provide treatment have also been included in some of these drainage catchments which provides a betterment for water quality compared to the existing situation, as currently no (or limited) mitigation is provided. The resultant significance of effects is at worst slight adverse (not significant). The detailed design process and ongoing liaison with relevant organisations may allow further opportunities for improvements to be included to the benefit of the water environment.

7.8 Cultural Heritage

- 7.8.1 The likely significant effects of the proposed scheme on cultural heritage were assessed in accordance with the DMRB LA 106 Cultural Heritage Assessment (Highways England, 2020), and presented in Chapter 7: Cultural Heritage [APP-074] of the Environmental Statement. This considered the known heritage baseline and the impacts on heritage assets that may occur during construction and operation of the proposed scheme and the resultant potential effects.
- 7.8.2 A total of 45 residual significant effects during construction, and six during operation, on designated and non-designated cultural heritage assets were assessed to remain after all forms of mitigation had been applied (see Table 7.14 of Chapter 7 [APP-074]). Of the residual significant effects identified, none was assessed to meet the test equating to substantial harm under NNNPS 2014.
- 7.8.3 With regards to cultural heritage, the Examination focused on the potential for the proposed scheme to affect the settings of two scheduled monuments: a Neolithic long mortuary enclosure at Appleford Farm, Rivenhall End (Asset 399); and a Medieval moat at Marks Tey Hall (Asset 818).
- 7.8.4 Two other issues discussed below are the impact of significant adverse effects of traffic noise on the Messing Conservation Area and Listed Buildings and the potential impact of the proposed scheme on Boreham House a Grade I listed building.

Schedule Monuments at Appleford Farm and Marks Tey

- 7.8.5 Table 7.4 of Environmental Statement Chapter 7: Cultural Heritage [APP-074] summarises the NNNPS policies of relevance to cultural heritage.
- 7.8.6 Paragraph 5.127 of the NNNPS requires the Applicant to

‘describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be

proportionate to the asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance'.

- 7.8.7 This information was presented in the relevant entries in Environmental Statement Appendix 7.1: Cultural Heritage Gazetteer [APP-106], and subsequently expanded upon in the Deadline 3 submission responding to Historic England's written representation [REP3-009, sub questions REP2-060-006 and REP2-060-007].
- 7.8.8 It was suggested by Historic England that the impacts from construction and operation of the proposed scheme on the setting of both assets should be considered to be of moderate adverse significance rather than slight adverse as presented by the Applicant. The Applicant considers its assessment of the effect of the proposed scheme on the settings of these two scheduled monuments, the Neolithic long mortuary enclosure north of Appleford Farm, and the medieval moat at Marks Tey Hall, to be accurate, as set out in Environmental Statement Appendix 7.1: Cultural Heritage Gazetteer [APP106]. The Applicant considers that the proposed mitigation measures, which include landscape planting, noise bunds, and enhanced low noise surfacing (shown on sheets 11 and 18 of the Environmental Masterplan [APP-087 and REP4-015] and in figures submitted by the Applicant at Deadline 7 [REP7-047]), would result in a residual effect of slight significance on both assets.
- 7.8.9 The Applicant has set out its view that the visual setting of the Neolithic long mortuary enclosure at Appleford Farm, Rivenhall End (Asset 399) within a post-medieval farmland landscape and already in close proximity to the existing A12, contributed little to the understanding of its significance. This is in contrast with its topographic position relative to the River Blackwater and Domsey Brook, and its relationship with a number of buried archaeological sites potentially forming a wider contemporary landscape, which would not be affected.
- 7.8.10 Construction and operation of the proposed scheme would not affect the relationship between the scheduled Medieval moat at Marks Tey Hall and grade II* listed Marks Tey Hall south barn (Asset 816), grade II listed Marks Tey Hall (Asset 819), and Barn to the north-west of Marks Tey Hall (Asset 817) and their group value as indicators of the longevity of the site would still be evident. The arrangement of assets forms an inward-looking setting, surrounded by mature vegetation and later buildings, leaving the asset largely concealed from outside views, except as a prominently vegetated area within the wider farming landscape. Although construction of the junction between Hall Chase and the A12 would affect the historic route to the moated site, it would still be legible in the landscape as a farm connected to the main road by its own access road, similar to nearby contemporary farms like Hammer Farm and Wishing Well Farm to the south-west.
- 7.8.11 The Applicant also noted that in both cases the archaeological remains of the scheduled monuments contributed strongly to their significance, and that this would not be affected by construction or operation of the proposed scheme.
- 7.8.12 The Applicant has consulted with Historic England on the matter of the two scheduled monuments and both parties agree that additional mitigation within

the Order limits would not further reduce the effects of the proposed scheme on the setting of the affected assets. Historic England has requested mitigation or compensation measures outside the Order limits to offset the effects on the setting of the scheduled monuments. However, the Applicant continues to maintain (as set out in response to ExQ3 3.7.1 [REP6-089]) that such mitigation is not necessary given the assessment that the effect would already be reduced to a residual effect of slight significance.

7.8.13 Paragraph 5.131 of the NNNPS states that

"substantial harm to or loss of grade II listed buildings and grade II registered parks and gardens should be exceptional and that substantial harm to, or loss of, scheduled monuments, grade I and II listed buildings and grade I and II* registered parks and gardens should be wholly exceptional."*

7.8.14 Following the methodology set out in Section 7.5 of Chapter 7: Cultural Heritage [APP-074], no impacts deemed to equate to substantial harm were assessed for either of the scheduled monuments described above. Historic England also assessed the impacts to amount to less than substantial harm in their written representation [REP2-060], meaning any potential harm should be weighed against the public benefits of the proposed scheme in line with Paragraph 5.134 of the NNNPS.

7.8.15 The scheme will deliver very significant benefits in the public interest (see above). Applying paragraph 5.134 of NNNPS, the Applicant considers that the harm that the proposed scheme would cause to the significance of the scheduled monuments is outweighed by these benefits.

Messing Conservation Area

Study Area

7.8.16 As set out in Chapter 7: Cultural Heritage [APP-073] of the Environmental Statement, a 300m study area extending in all directions from the Order Limits was applied to all heritage assets, which is considered appropriate to assess the potential physical and setting impacts on designated and non-designated cultural heritage assets.

7.8.17 A wider study area of 1km from the Order Limits was used to assess impacts on the settings of designated heritage assets, comprising scheduled monuments, listed buildings, registered battlefields, registered parks and gardens and conservation areas.

7.8.18 Beyond 1km, a selection of designated heritage assets was assessed for setting impacts based on professional judgement. Within this wider area heritage assets were only assessed where there was considered to be potential for significant effects to occur.

7.8.19 The study areas used for the cultural heritage assessment are shown on Figures 7.1 [APP-215] and 7.2 [APP-216] of the Environmental Statement.

7.8.20 The study areas and approach to assessment were agreed during consultation meetings with the cultural heritage stakeholders including Historic England,

Essex County Council, Colchester Borough Council, and Chelmsford City Council.

- 7.8.21 Messing Conservation Area is located approximately 2kms to the southeast of the existing A12 and is linked to the B1023 upgrade section of road, approximately 1.8km to the west of the village, by the Kelvedon Road. Messing village is therefore outside the main study area where direct impacts could occur.

Traffic Noise Impacts

- 7.8.22 Although significant noise impacts were predicted for receptors within Messing in Chapter 12: Noise and Vibration [APP-079] of the Environmental Statement, the Conservation Area and individual Listed Buildings are designated for their heritage values. The impact of the predicted noise increases on historic buildings are therefore assessed only in relation to their impact on each heritage interest of each heritage asset, in particular its aesthetic, historic, evidential or communal interest.
- 7.8.23 Noise impacts from additional traffic within the settings of a heritage asset are indirect impacts which, in the case of Messing, did not have the potential to result in significant heritage effects because they do not result in a loss of the main heritage values of those receptors. Therefore, on this basis Messing was not scoped into the cultural heritage assessment.
- 7.8.24 Further details of the operational impacts of traffic noise on heritage assets in Messing are set out in the Applicant's Comments on Others' Responses to ExQ2 [REP5-003].

Boreham House

- 7.8.25 Boreham House, a heritage asset which is designated as a Grade I Listed Building, is located approximately 350m south-west of junction 19 (Boreham interchange) on the A12. Although there will be a loss of trees and vegetation from within the setting of Boreham House, the Environmental Statement Chapter 7: Cultural Heritage [APP-074] assesses the overall impact on Boreham House to be Slight adverse. This is because, although the setting of Boreham House does contribute towards its overall heritage value, this is only one aspect of Boreham House's heritage value. Other aspects include its architectural/aesthetic value, historic value, evidential value and communal value and many of these would remain unaffected.
- 7.8.26 The assessment of the impact on Boreham House in Environmental Statement Chapter 7: Cultural Heritage [APP-074] takes into account a 'worst case' for tree loss around Boreham House based on Appendix 8.4: Arboricultural Impact Assessment [APP-122] and the Retained and Removed Vegetation Plans Part 1 [REP6-032]. This includes loss of trees along the frontage of Boreham House, including loss of one TPO and part of a group of TPO trees opposite The Generals at risk of being removed. They also take into account the widening of Main Road on the approach to junction 19, recreating the access into Boreham House, and footpath works and trees along the north-eastern boundary of Boreham House that are at risk of removal due to the proposed scheme.

- 7.8.27 Since statutory consultation, it has been determined that the existing belt of trees protected by TPOs west of Boreham House, that currently intercepts views from Boreham House towards the junction, can be retained.
- 7.8.28 At detailed design it will be determined whether ‘at risk’ trees can be retained, taking account of more detailed highway design and topographic surveys. If, however, the trees cannot be retained, they would be replaced after construction using the same or similar species to those removed, as close to the location of the original, as per LV4 in the REAC [REP6-052] which states:
- “Existing vegetation within the Order Limits including temporary works areas would be retained as far as reasonably practicable. Particular attention would be given to the retention of mature vegetation including the following, which would be retained in accordance with, as a minimum, the Retained and Removed Vegetation Plans [TR010060/APP/2.14].*
- Vegetation to be removed is shown on the same plan.*
- *Ancient, veteran and notable trees (both verified and potential)*
 - *Trees subject to tree preservation orders*
 - *Specimen trees*
 - *Category A and B trees*
 - *Important hedgerows*
 - *Ancient woodlands All trees to be retained would be protected throughout the construction period in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.*
- Where it is necessary to remove trees subject to tree preservation orders, such as in front of Boreham House, and trees within the Chelmer and Blackwater Navigation Conservation Area, they would be replaced on completion of construction using the same or similar species to that removed as close to the location of the original as practicable, subject to consideration of species with regards to climate change and resilience to pests and disease.”*
- 7.8.29 New woodland, tree, shrub, and hedge planting are proposed as part of the mitigation strategy for the proposed scheme, and planting locations are indicated on Figure 2.1 Environmental Masterplan [REP6-043 to REP6-045] that would form the basis of the planting design to be developed during the detailed design stage.
- 7.8.30 All trees to be retained would be protected throughout the construction period in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. Particular attention would be given to the retention of mature vegetation, which would be retained in accordance with, as a minimum, the Retained and Removed Vegetation Plans [REP6-032 and REP6-033].

7.9 Landscape and Visual

Introduction

- 7.9.1 No questions relating directly to landscape and visual effects have been raised within the Examining Authorities Written Questions [PD-008a, PD-009 and PD-014].
- 7.9.2 Material issues associated with landscape and visual effects raised during the Examination are in relation to Gershwin Boulevard Bridge and the gas main diversion. Landscape and visual issues relevant to Gershwin Boulevard Bridge are addressed within this response. Landscape and visual issues relevant to the gas main diversion are addressed within Section 7.6 of this Closing Statement.

National Networks National Policy Statement

- 7.9.3 The relevant parts of the NNNPS relating to decision making and the policy test(s) to be applied for landscape are:
- 5.1.49: Landscape effects depend on the nature of the existing landscape likely to be affected and nature of the effect likely to occur. Both of these factors need to be considered in judging the impact of a project on landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.
 - 5.1.56: Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development document in England has policies based on landscape character assessment, these should be given particular consideration. However, local landscape designations should not be used in themselves as reasons to refuse consent, as this may unduly restrict acceptable development.
 - 5.1.57: In taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation.
 - 5.1.58: The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development.

Gershwin Boulevard Bridge

- 7.9.4 Representations were received from Interested Parties throughout the Examination process regarding the visual impact that would be caused by the

proposed location of Gershwin Boulevard Bridge. A suggested alternative location for the new bridge was put forward by Interested Parties.

- 7.9.5 The Applicant has provided a technical note which assesses the visual impacts that would be caused by the proposed scheme in the vicinity of Gershwin Boulevard bridge, explains the design narrative for the proposed bridge, and considers the alternative location as suggested by Interested Parties. This document is available in the examination library as REP3-011.
- 7.9.6 The proposed Gershwin Boulevard Bridge is assessed as having a very large adverse visual effect on the representative viewpoints presented in REP3-011 during construction and in year 1. At year 15, when mitigation planting has established, this would reduce to a moderate adverse visual effect.
- 7.9.7 Visual effects at the alternative suggested location for the new bridge cannot be assessed in the absence of a proposed design of the structure, details relating to loss of vegetation and mitigation planting. However, likely landscape and visual effects that would be caused by a bridge at the alternative suggested location have been considered to allow comparison between the two locations in Section 3.4 of REP3-011, based on professional judgement.
- 7.9.8 The technical note concludes that whether the proposed Gershwin Boulevard Bridge is provided in the proposed location or at the suggested alternative location, a similar amount of vegetation that screens the A12 would need to be removed. Much of this loss is due to the widening of the A12 regardless of the location of the bridge. At the suggested alternative location, due to the presence of the Gershwin Boulevard and a lake north of it, there would be limited opportunity to replace lost vegetation and mitigate open views across the lake that would be experienced by residents in this area. The Applicant's proposed location is adjacent to amenity land where it is proposed to provide tree and shrub planting to offset the lost vegetation and help mitigate views of the new bridge and the A12.
- 7.9.9 Mitigation planting is shown on Environmental Statement Figure 2.1 Environmental Masterplan Part 1, Sheet 8 [REP6-043] and Figure 2.2 Illustrative Cross Sections Part 1, Sheet 5, Section D-D [REP6-046]. Illustrative Cross Section DD shows the relationship between residential properties in Witham and the proposed Gershwin Boulevard bridge and proposed planting. During detailed design the inclusion of evergreen species, larger stock and fast-growing species would be considered to provide early establishment and screening.
- 7.9.10 While the landscape and visual effects of a bridge in either location would likely be comparable, there would be greater scope for landscape and visual mitigation at the location proposed by the Applicant.

Conclusion

- 7.9.11 The Applicant has considered the landscape and visual effects that would be caused by Gershwin Boulevard Bridge at the proposed and alternative suggested location and has proposed mitigation at the proposed location that would minimise harm to the landscape.

- 7.9.12 The Applicant has also assessed the landscape and visual effects that would be caused by the gas main diversion and has proposed mitigation that would minimise harm to the landscape.
- 7.9.13 The relevant parts of the NNNPS relating to decision making and the policy test(s) to be applied for landscape have been addressed as follows.
- 7.9.14 NNNPS 5.1.49: The nature of the existing landscape is considered within Section 8.8 of Chapter 8: Landscape and visual [APP-075], and the nature of the landscape effects likely to occur as a result of the proposed scheme has been considered within the assessment of likely significant effects in Section 8.11. To avoid or minimise harm to the landscape and views, embedded landscape mitigation measures have been developed as presented within Section 8.10. Landscape mitigation planting is illustrated on the Environmental Masterplan Figure 2.1 [REP6-043, REP6-044 and REP6-045].
- 7.9.15 While the visual effects at the alternative location for the new footbridge cannot be assessed in the absence of a proposed design for the structure, the likely landscape and visual effects have been considered to allow comparison between the two locations based on professional judgement.
- 7.9.16 NNNPS 5.1.56: No locally designated landscapes would be affected by Gershwin Boulevard Bridge at the proposed or alternative location or by the gas main diversion. The Local Policy Accordance Tables [APP-252] details how the proposed scheme confirms to policies based on landscape character assessment.
- 7.9.17 NNNPS 5.1.57: To avoid or minimise harm to the landscape and views, embedded mitigation measures for landscape have been developed as presented within Section 8.10 of Chapter 8: Landscape and visual [APP-075]. Further design considerations and landscape objectives have been defined as part of an overarching set of scheme-specific design principles presented within the Design Principles document [REP6-058], which have been used to inform development of the proposed scheme design, including both the highway alignment and the Environmental Masterplan Figure 2.1 [REP6-043, REP6-044 and REP6-045].
- 7.9.18 NNNPS 5.1.58: Visual effects for the proposed scheme are assessed within Chapter 8: Landscape and visual [APP-075] and Appendix 8.3 Visual Effects Schedule APP-121. Representative viewpoint 35 is of relevance to the gas main diversion.

8 EMP, REAC and Project Design

8.1 General Approach to Mitigation

- 8.1.1 Chapter 5 of the NNNPS sets out the policy requirements regarding mitigation for each environmental topic. Although the policy wording varies from topic to topic, the general requirement is that the Applicant must demonstrate that appropriate mitigation measures have been incorporated into the proposed scheme in both design and construction.
- 8.1.2 The first approach the Applicant has taken is to embed mitigation within the proposed scheme design. Embedded mitigation is an intrinsic part of design evolution and includes, for example, design refinements and the process of assessing alternative options (see Section 5 of this Closing Statement), as well as including features within the design to avoid or reduce potential impacts (for example noise bunds, landscape planting, and sustainable drainage features). Embedded mitigation forms part of the proposed scheme description in Chapter 2: The proposed scheme, of the Environmental Statement [APP-069] and is shown on the Environmental Masterplan [REP6-043, REP6-044, and REP6-045].
- 8.1.3 Standard mitigation (measures required regardless of the Environmental Impact Assessment process because they are generally imposed through legislative requirements or standard sector practices) and additional mitigation (further measures to reduce likely significant effects) have also been included in the proposed scheme and are identified in each of the relevant chapters within the Environmental Statement. Standard and additional mitigation make up 'essential mitigation' as per DMRB LA 104. Essential mitigation is defined as measures critical for the delivery of the scheme which can be acquired through statutory powers and is included in the first iteration Environmental Management Plan [REP4-022] and REAC [REP6-052], which are covered further in Section 8.3 of this Closing Statement.
- 8.1.4 This approach conforms with the mitigation hierarchy, whereby significant adverse effects have first been avoided where practicable through design refinements and alternatives; any remaining likely significant effects have then been reduced where practicable through proposed essential mitigation measures; and then finally, where effects cannot be mitigated, compensatory measures have been considered, for example by providing replacement habitat.
- 8.1.5 Where likely significant adverse effects on the environment are predicted, consideration has been given to the appropriateness of monitoring measures. The purpose of monitoring measures is to ensure the mitigation measures required to avoid, reduce and offset significant adverse effects are delivered and perform as intended, in accordance with the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations).
- 8.1.6 Enhancement measures have also been considered. An enhancement is defined as a measure that is over and above what is required to mitigate the adverse effects of the proposed scheme. Unlike mitigation and compensation

measures, enhancements are not generally factored into the determination of significance or secured in the dDCO; however, the potential benefits of these measures are presented within the relevant aspect chapters of the Environmental Statement, in accordance with the NNNPS.

- 8.1.7 By following the above approach to mitigation, the Applicant believes it has included appropriate mitigation as part of the proposed scheme in compliance with the requirements of the NNNPS and the EIA Regulations.

8.2 Environmental Management Plan

- 8.2.1 In addition to identifying appropriate mitigation measures, the Applicant is required to demonstrate how these measures will be secured. A first iteration of the EMP has been produced [REP4-022], in line with DMRB LA 120 Environmental Management Plans, which contains all measures, including the REAC, to manage environmental effects in construction and operation. This first iteration of the EMP has been submitted with the DCO application and provides the framework for the future production of the more detailed second iteration of the EMP prior to construction. A third iteration of the EMP would be produced after construction for the handover stage.
- 8.2.2 The second and third iteration EMPs are secured through requirements 3 and 4 in the dDCO [REP6-036] and must be approved by the Secretary of State, following consultation with the relevant planning authorities and the Environment Agency on matters related to its functions.
- 8.2.3 The first iteration of the EMP contains outline topic-specific management plans [APP-186, REP4-025, APP-188 to APP-196, REP4-027 and REP4-029], such as the Landscape and Ecology Management Plan and Site Waste Management Plan.
- 8.2.4 A separate Outline Construction Traffic Management Plan [REP6-054] has also been included in Volume 7 of the DCO application which sets out measures for managing traffic and access during the construction phase. These specific management plans will be updated and developed into the final management plans by the Principal Contractor prior to construction.

8.3 Register of Environmental Actions and Commitments

- 8.3.1 The REAC is included in Appendix A of the first iteration EMP [REP6-052]. The REAC identifies the actions and commitments (i.e. the essential mitigation) included within the Environmental Statement to address the environmental effects of the proposed scheme.
- 8.3.2 The REAC has been updated three times during the Examination – once at Deadline 4 [REP4-023], once Deadline 6 [REP6-052] and again at Deadline 7 [REP7-015] to include new or updated environmental commitments. These new or updated commitments have been included in response to ongoing engagement with stakeholders and Interested Parties during the Examination process.
- 8.3.3 The REAC table will be updated by the Principal Contractor when they prepare the second iteration EMP relevant to the scope of works. The REAC table will

be updated as required as the proposed scheme progresses to track progress of the commitments and record outcomes and evidence of the actions taken, as well as recording and addressing any additional environmental issues that arise during construction. The REAC will be updated again for the third iteration EMP.

8.3.4 Mitigation in future iterations of the EMP will be based on the commitments within the REAC [REP7-015] as a minimum. In the event that the Principal Contractor is able to:

- Define an alternative measure
- Refine measures included in the REAC, which would achieve the same environmental outcome at the relevant location

The Principal Contractor would have to provide evidence to National Highways that the use of the alternative measures would not lead to any materially new or materially different environmental effects compared to those as presented in the Environmental Statement.

8.4 Design Principles

8.4.1 The NNNPS provides guidance and imposes requirements on matters such as good scheme design, as well as the treatment of environmental impacts. Paragraphs 4.28-4.35 of the NNNPS set out the criteria for 'good design' for national networks noting that design '*should be an integral consideration from the outset*'. The draft NNNPS (2023) builds upon and further emphasises the importance of good design.

8.4.2 The Design and Access Statement [APP-268] provides context for the proposed scheme; design evolution in response to consultation feedback; and how the proposed scheme integrates 'good design' in its walking, cycling and horse riding, landscape and structural proposals.

8.4.3 To guide the detailed design process further and to ensure that 'good design' remains an integral element of the proposed scheme, the Applicant has prepared a series of both scheme-wide and area-specific design principles, contained in the Design Principles document [REP6-058]. The design principles set out a unified approach to design and create an overarching, shared resource for stakeholders over the required design outcomes.

8.4.4 The design principles are a result of the outcomes of consultation and engagement and respond to the design objectives set out in the following:

- NNNPS (Department for Transport, 2014)
- The Road to Good Design (Highways England, 2018)
- Design principles for National Infrastructure (National Infrastructure Commission)
- Essex Green Infrastructure Strategy (Essex County Council, 2020)
- Technical Design Standards (i.e. DMRB)
- Technical Design Standards (Gas Pipeline) (i.e. IGEM/TD/1)

- Place Services: Essex Tree Palette (Essex County Council, 2018)
- Police, Fire & Crime Commissioner for Essex Guiding Principles

8.4.5 As with the mitigation measures in the first iteration Environmental Management Plan [REP4-022] and REAC [REP6-052], the design principles have been developed having regard to the conclusions of the Environmental Statement to secure necessary design mitigation. It also secures principles to ensure the proposed scheme is designed sensitively, applying 'good design' outcomes where reasonably practicable.

8.4.6 By virtue of Requirement 10 of the dDCO [REP6-036], the detailed design of the project must be carried out in accordance with the design principles. The design principles are also controlled by certified plans and drawings which the proposed scheme must be designed in accordance with as per Requirement 10 and Schedule 12 of the dDCO [REP6-036].

8.4.7 The Applicant considers that the proposed scheme meets the requirements of the NNNPS relating to 'good design' and is wholly consistent with policy emerging in the draft NNNPS. There are no reasons on design grounds to withhold development consent.

8.5 Monitoring

8.5.1 The Applicant has accepted that Essex County Council wish to see monitoring of traffic levels on local roads when the proposed scheme is operational. The Applicant has therefore included requirement 16 within the dDCO for an operational traffic monitoring scheme. The seven locations included in the drafting are those that were identified within Essex County Council's Local Impact Report [REP2-055].

8.5.2 Since then, Essex County Council have increased their suggested monitoring sites to 29 different locations. The Applicant will discuss further with Essex County Council, but remain of the position that the sites included in the drafting are sufficient.

8.5.3 Although the Applicant agrees with the principle of monitoring, it is not in agreement with Essex County Council on the consequences flowing from any monitoring that may be undertaken. The Applicant accepts that while it is possible to monitor and analyse the impact of the proposed scheme, there is a level of uncertainty around the extent to which the proposed scheme is responsible for observed changes. While this level of uncertainty is acceptable for a monitoring report that focuses on trying to understand the impacts of the scheme, it does not allow definitive "blame" to be placed on the A12 scheme for traffic changes and therefore responsibility for funding or delivering mitigation.

8.5.4 In addition, given that the proposed scheme results in an overall reduction of traffic on Essex's local road network, any suggestion that the Applicant should in principle be expected to monitor and bear all impacts on the local road network arising from the scheme would involve a significant and problematic extension of National Highways' role in delivering improvements to the strategic road network, through both the RIS process and under the terms of National

Highways' Licence, which authorises National Highways in respect of the SRN only. The Applicant considers it inappropriate to hold a fund for undefined mitigation schemes to be delivered from 2033 at the earliest.

9 Case and Justification for Compulsory Acquisition

9.1 Legal tests

Requirement for the land s122(2)(a) & (b) PA 2008

- 9.1.1 The Applicant's case is that the DCO should be made, and therefore this must be followed by an assessment by the Examining Authority of whether the compulsory acquisition powers sought in the application for development consent should be granted.
- 9.1.2 In its application for the proposed scheme, the Applicant seeks compulsory acquisition and temporary possession powers in respect of certain land interests set out in the Book of Reference [REP6-042] for the scheduled works to be constructed. The Applicant needs these powers to acquire the land interests ready for the construction and operation of the proposed scheme; to use land temporarily; and to acquire, suspend, interfere with or extinguish rights over land and impose necessary restrictive covenants. The Applicant has sought to deliver the proposed scheme in a way that is both proportionate and in the public interest by reducing environmental impacts, minimising the cost to the Applicant (and therefore the public purse) and mitigating the impact on affected land interests.
- 9.1.3 In addition to land required for the construction of the proposed scheme and associated development, land is also required for ecological mitigation purposes. It is proposed that freehold of the land is secured, to enable the applicant to provide and maintain the required mitigation. Section 9.9 of the Environmental Statement Chapter 9 Biodiversity [APP-076] presents an assessment of the effects caused by the construction and operation of the proposed scheme on designated sites, habitats, flora and fauna. Some impacts (particularly with respect to reptiles) can only be mitigated through the creation of new habitats. These new habitats would require additional land that has been included within the Order Limits. The need to mitigate is driven by the Wildlife and Countryside Act 1981 (as amended) and policies 5.25, 5.33 and 5.36 of the NNNPS.
- 9.1.4 The Applicant has submitted a detailed technical note setting out the compelling case for acquisition of land for ecological mitigation [REP3-010]. The majority of ecological mitigation areas included within the design for the proposed scheme are for the purpose of reptile mitigation, which would include the creation of 48.67ha of habitats (see Section 3: Calculation of loss of habitats [REP3-010]) to provide receptor sites for reptiles. These sites would be created in advance of construction where practicable. In line with Standing Advice from Natural England, the Applicant has applied general design principles (as detailed in Section 4.4 of the technical note [REP3-010]) to identify suitable land within which these receptor sites can be created.
- 9.1.5 In its Statement of Reasons [REP6-040] the Applicant has set out its case in full for the acquisition of land. Annex A to the Statement of Reasons [REP6-086]

contains a plot-by-plot justification. The Secretary of State can therefore be confident that the grant of compulsory powers requested is in accordance with section 122 of PA 2008.

- 9.1.6 The tests for compulsory acquisition of land (including the creation and acquisition of new rights over land) are set out in section 122 of PA 2008 and further explained in the guidance related to procedures for the compulsory acquisition of land (DCLG, 2013) ("**the CA Guidance**").
- 9.1.7 Section 122 provides that an order granting development consent may include powers of compulsory acquisition only if the Secretary of State is satisfied that the conditions in subsections (2) and (3) are met. More specifically:
- (1) Subsection (2) provides that the land must be (a) required for the development; (b) required to facilitate or is incidental to the development; or (c) replacement land which is to be given under sections 131 or 132 of the PA 2008. The Applicant has not sought to distinguish between land falling under subsection 122(2)(a) and (b) but identifies in article 41 of the draft Development Consent Order and on the Special Category Land Plans [REP6-012] where the land is required as replacement land.
 - (2) Subsection (3) requires that there is a compelling case in the public interest for the land to be acquired compulsorily.
- 9.1.8 In respect of these legal tests, the CA Guidance explains that the Applicant should be able to demonstrate to the satisfaction of the Secretary of State that the land in question is needed for the development for which consent is sought. The Secretary of State will need to be satisfied that the land to be acquired is no more than is reasonably required for the purposes of the development.
- 9.1.9 In addition to the statutory requirements, the Government has adopted Guidance on Compulsory Purchase Process and the Criche! Down Rules ("the Guidance"). The Guidance identifies a number of factors that the Secretary of State will take into account in deciding whether to authorise compulsory acquisition. The CA Guidance identifies similar factors. These are:
- (1) Whether there is a compelling case in the public interest for the acquisitions;
 - (2) Whether the Applicant has a clear idea of how it intends to use the land which it is proposing to acquire;
 - (3) Whether the Applicant can show that all the necessary resources are likely to be available to achieve that end within a reasonable time-scale; and
 - (4) Whether the purpose for which the acquiring authority is proposing to acquire the land could be achieved by any other means. This may include considering the appropriateness of any alternative proposals put forward by the owners of the land.
- 9.1.10 In this context the Applicant makes the following points:
1. The significant public interest benefits that the proposed scheme will deliver have been addressed above. These must be weighed against the rights and

interests of the individuals with interests in the land to be acquired. The Statement of Reasons explains the case for compulsory acquisition. Further, given that discussions continue regarding objections to the compulsory acquisition included within the dDCO, the Applicant intends to separately provide a final update in respect of the case for acquisition in respect of the lands referred to in each objection prior to the close of the Examination.

2. Annex A to the Statement of Reasons provides the purposes for which each plot in the Book of Reference is required. In each case, the reason why the land is required and what it will be used for is explained.
3. In respect of funding, the DCO Application was accompanied by a Funding Statement [APP-043] in compliance with Regulation 5(2)(h) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the "2009 Regulations") and in accordance with the Department for Communities and Local Government guidance 'Planning Act 2008: Guidance related to procedures for compulsory acquisition' (September 2013) (**CA Guidance**).
4. On 11 March 2020, the Government published its second Road Investment Strategy for the period 2020-2025 (RIS2). RIS2 commits the Government to spending £27.5 billion to both build new road capacity and improve the quality and reduce the negative impacts of the existing Strategic Road Network (SRN). Part 3: The Investment Plan sets out the Government's expenditure priorities which confirms the ongoing commitment to the proposed scheme.
5. RIS2 states that the proposed scheme may also include the delivery of additional improvements around the site of the Colchester Braintree Border Garden Community, subject to support from the Housing Infrastructure Fund. However, on 15 May 2020, it was concluded that the Colchester Braintree Borders Garden Community should be removed from the local plan and therefore the proposed scheme does not include any additional elements around this site and the Housing Infrastructure fund is therefore no longer relevant to the delivery of the proposed scheme.
6. The Government and National Highways commitments set out in the Funding Statement demonstrate that the proposed scheme will be fully funded by the Department for Transport and consequently the proposed scheme is not dependent on funding contributions from other parties. Thus, funding is available and will be available when required. As demonstrated in these submissions, in the Statement of Reasons and below, the proposed development cannot proceed without the proposed compulsory acquisition.

9.1.11 In respect of the fourth topic of the CA Guidance listed at 9.1.9 above, and in relation to the position with Affected Parties and holders of interests in the Order land more generally, Paragraph 25 of the CA Guidance states that Applicants should seek to acquire land by negotiation wherever practicable; but

acknowledges that for long linear schemes (such as this application), securing all required land by agreement is unlikely to be practicable. The Applicant has sought to engage with landowners and progress with negotiations is set out in the Applicant's Status of Negotiations Compulsory Acquisition Schedule [REP7-048].

- 9.1.12 No land is sought for the proposed scheme from major commercial operations that is anticipated to require the permanent relocation of the existing occupier. At specific locations, such as where the existing A12 is to be widened over the B1023 Inworth Road, engineering solutions have been adopted to mean that the permanent relocation of commercial occupiers at that location is not necessary. Commercial discussions have progressed with the operators of Colemans Quarry and will continue.
- 9.1.13 For agricultural occupiers, an agricultural liaison officer will be appointed to work with affected agricultural parties, including to keep those parties informed on timetable and likely impacts on their activities – see Ref No: PH2, page 44 and 45, relating to Chapter 13: population and human health, of the Environmental Statement, in the Applicant's REAC [REP7-015].
- 9.1.14 For the residential properties to be acquired permanently for the proposed scheme, as well as for the properties that have applied for statutory blight or the Applicant's discretionary purchase scheme, of the 22 blight and discretionary purchase applications accepted by the Applicant, 19 of the 22 properties have been acquired or terms agreed. It is anticipated the position in respect of Wishing Well Farm will be agreed very soon (See 3.2 of the Applicant's written submissions of oral case for CAH3 [REP7-044]). Negotiations continue for the remaining two residential properties required permanently for the scheme where blight applications have been accepted but valuations are still being discussed.
- 9.1.15 Particular attention has been paid to those residents most directly affected by the works at Station Road and Bury Lane in Hatfield Peverel, by either permanent acquisition, temporary possession or potentially restricted access. The Applicant's team has met with all of the Interested Parties frequently to explain the proposals, impacts and timetable, to try to understand their individual circumstances and make proposals accordingly. These parties have all been offered, and have agreed or are considering, to one of
- Blight
 - Discretionary Purchase
 - Temporary Accommodation
 - Alternative temporary access arrangements or
 - Are only subject to short term impacts from temporary possession of gardens that will facilitate access during the period of the works.
- 9.1.16 Focus has been paid to communicate to the Interested Parties how they can safely and conveniently remain in the properties affected whilst works are ongoing, ensuring that they have access, whilst also retaining access for

essential services such as waste collection and emergency services. In some cases, temporary possession is sought to enable access to some of the properties. The success of this engagement is evidenced by the low level of representations received by the ExA from these Interested Parties.

- 9.1.17 In the case of Mr Mahoney, land is required in addition to enable temporary works principally to mitigate impacts for other residents on Station Road. A Position Statement is agreed and negotiations with the District Valuer are advanced. The matters raised by Mr Mahoney in CAH3 regarding the duration of utilities were discussed with him on Wednesday 5th July.
- 9.1.18 Arrangements for the wider community, not directly affected by acquisition, possession or restricted access are set out in the Outline Construction Traffic Management Plan [REP6-054], principally in Section 5.9.
- 9.1.19 In addition to the statutory requirements under the Planning Act 2008 and its associated CA Guidance, the Government has adopted Guidance on Compulsory Purchase Process and the Crichel Down Rules (“the Guidance”). The Guidance identifies a number of factors that the Secretary of State may take into account in deciding whether to authorise compulsory acquisition. Included in these, at paragraph 19, is a list for consideration of steps to be taken aimed at assisting parties affected by proposals for compulsory purchase.
- 9.1.20 The listed considerations in Paragraph 19 of the Guidance are:
- “providing full information from the outset about what the compulsory purchase process involves, the rights and duties of those affected and an indicative timetable of events; information should be in a format accessible to all those affected...”*
- 9.1.21 The Applicant’s consultation letter issued for S42 consultation to parties interested in land [APP-054] provided a link to all National Highways CA guidance documents. The consultation brochure also included a timeline.
- “appointing a specified case manager during the preparatory stage to whom those with concerns about the proposed acquisition can have easy and direct access...”*
- 9.1.22 For all affected landowners a case manager was allocated by the Applicant’s external agent. S42 consultation letters were sent to all landowners, with the relevant contact details offering meetings and all landowners have been engaged with in this way (see APP-054).
- “keeping any delay to a minimum by completing the statutory process as quickly as possible and taking every care to ensure that the compulsory purchase order is made correctly and under the terms of the most appropriate enabling power...”*
- 9.1.23 This is less relevant for applications for development consent where a timetable for applications has a legislative basis. The Applicant has throughout the pre-application and application stages of the process sought to move the application forward in a timely manner, with a correctly drafted order and application documents, under the correct powers. The articles of the Order relating to compulsory acquisition and temporary use of land have not materially

altered during the examination process. The Applicant's successful change request application reduced the land sought to be acquired compulsorily, as a result of the Applicant's continuing consideration of the extent of powers proposed.

“offering to alleviate concerns about future compensation entitlement by entering into agreements about the minimum level of compensation which would be payable if the acquisition goes ahead...”

- 9.1.24 The Applicant has made offers in respect of the permanent acquisition cases to give landowners an understanding of the compensation package proposed. Such offers have either been accepted or the relevant party is seeking to negotiate an improved package. All offers will be made in accordance with the Compensation Code.

“offering advice and assistance to affected occupiers in respect of their relocation and providing details of available relocation properties where appropriate...”

- 9.1.25 The Applicant is working with the owners of relevant residential properties regarding temporary accommodation.

- 9.1.26 Where people have to move on a temporary basis, such as at Station Road Bridge, Hatfield Peverel, the Applicant has committed to fund those costs. The Applicant stated in its responses to relevant representations that it will continue to engage with the relevant parties affected to keep them informed on timetable and assist with the identification of appropriate alternative accommodation for the duration of the works at this location. [PDA-004, AS-035-002]

“providing a ‘not before’ date, confirming that acquisition will not take place before a certain time...”

- 9.1.27 Indicative dates for the scheme's implementation were given in the Applicant's S42 and S47 consultation brochures. Given there are limited business relocations proposed, the usefulness of specific “not before” dates to assist with business planning for parties affected has been limited.

“give consideration to funding landowners' reasonable costs of negotiation or other costs and expenses likely to be incurred in advance of the process of acquisition...”

- 9.1.28 The Applicant has agreed to reimburse the reasonable costs of a number of landowners in obtaining professional valuation and compensation advice.

- 9.1.29 Paragraph 19 of the CA Guidance first requires the Applicant to demonstrate that its application is firmly rooted in any relevant national policy statement. The Applicant has demonstrated this in the Case for the Scheme [APP-249] and its Appendices [APP-250, APP-251 and APP-252]. Section 2 of this Closing Statement deals with this in more detail.

- 9.1.30 In addition, paragraph 19 of the CA Guidance requires applicants to properly manage any potential risks or impediments to implementation of the proposed scheme. The Applicant is not aware of any matters that should be regarded as impediments to the delivery of the proposed scheme, as explained in paragraph 7.4.1 of the Statement of Reasons [REP6-040].

- 9.1.31 The Consents and Licences Position Statement [APP-041] addresses the Applicant's requirement to take into account the need to obtain any other consents.

Replacement Land – s122(2)(c) PA 2008

- 9.1.32 In relation to section 122(2)(c) of the Planning Act 2008 (PA 2008), the Applicant seeks authorisation for powers of compulsory acquisition in respect of "replacement land" to be given in exchange for Order land under section 131 (for freehold acquisition of land forming part of an open space) and section 132 (for new rights over part of open space land).
- 9.1.33 Section 131 of PA 2008 applies to the compulsory acquisition of any land forming part of a common, open space or fuel or field garden allotment and section 132 of PA 2008 applies to the compulsory acquisition of any rights over land forming part of a common, open space or fuel or field garden allotment. Special Parliamentary Procedure (SPP) is to apply where a DCO authorises the compulsory acquisition of land or new rights over such land. This means that the DCO will be subject to SPP unless the Secretary of State is satisfied that one of four circumstances applies in the case of Section 131. In respect of this Application for development consent the Applicant is relying on the following exception:
- Replacement land (being land not less in area than the relevant special category land to be compulsorily acquired under the DCO and which is no less advantageous to the persons entitled to rights over common over it (if any) and to the public) will be given in exchange for the land to be compulsorily acquired.
- 9.1.34 As regards the compulsory acquisition of rights over special category land, section 132 provides that the DCO will be subject to SPP unless the Secretary of State is satisfied that one of the circumstances in sub-sections (3) or (4) of section 132 applies. In respect of this Application for development consent the Applicant is relying on the following circumstances:
- The land, when burdened with the order, will be no less advantageous than it was before to the persons interested in it or to the public (section 132(3)); or
 - Replacement land (being land which will be adequate to compensate the owners of the special category land, persons entitled to exercise rights of common over the land (if any) and the public for the disadvantages which result from the compulsory acquisition of the rights over land) will be given in exchange for the special category land which is the subject to the compulsory acquisition of rights (section 132(4)(a) and (b));
 - The land over which rights are to be acquired does not exceed 200 square metres or is required in connection with the widening or drainage of an existing highway and the giving of land in exchange is unnecessary.

- 9.1.35 The basis on which replacement land is required is set out in Section 7.2 of the Statement of Reasons [REP6-040] and the Replacement Land Statement prepared by the Applicant and updated at Deadline 6 [REP6-056]. Article 45 of the dDCO provides the mechanism that ensures that the replacement land is provided.
- 9.1.36 Replacement land will be provided for all open space plots where the freehold is proposed to be compulsorily acquired and for all plots where new rights are to be compulsorily acquired where the right will be a burden on the land so as to make the open space less advantageous. The ratio for replacing open space land acquired is at least at 1:1 in area where replacement land is being proposed. The justification for this approach can be found in the Replacement Land Statement [REP6-056].
- 9.1.37 Locations for replacement land have been sought that have some similarity with the special category land to be acquired for the proposed scheme and will be contiguous with, or as close as possible to, the open space land being acquired. The replacement land will be accessible from either being contiguous to remaining open space land or by connections with public rights of way. Where possible the replacement land will also connect with other existing public access routes to form future opportunities for recreational walking activities.
- 9.1.38 Areas of replacement land have been included in the proposed scheme in the locations shown on the Special Category Land Plans [REP6-012].
- 9.1.39 For further detail on the character of the special category land, the areas proposed as replacement land and the works proposed to the replacement land can be found in the Replacement Land Statement [REP6-056].
- 9.1.40 The Applicant's rationale for the selection of the replacement land, and its assessment of the suitability of the replacement land to replace the special category land subject to the proposed scheme, are both set out in the Replacement Land Statement [REP6-056].
- 9.1.41 The Applicant has identified the following areas of land within the Order Limits that have been assessed to be open space:
- **Area 1 – River Chelmer:** new rights over these plots are required for a new surface water drain into the River Chelmer from an attenuation pond to be provided as part of the proposed scheme. However, as only new rights are being sought and the use of the land will not be materially altered or affected, no replacement land is proposed. Temporary powers to use and take possession of the land will be relied on during installation of the proposed drainage works.
 - **Areas 2-4 – Gershwin Boulevard and Olivers Drive, Witham:** The open space to be acquired permanently is needed for the widening of the existing A12 at Witham, adjoining Open Space Areas 2, 3 and 4. For the land at Olivers Drive (Area 4) freehold acquisition is required for the diversion of public right of way 121_95. Within Area 4 the diversion of existing underground utility apparatus is also proposed. As the apparatus are already in the Order Land it is considered the land will be no less advantageous than before, following the creation of the new rights sought.

A new area of open space is to be provided on the east side of the A12, accessible by the new Gershwin Bridge and direct from the B1018 Maldon Road.

- **Area 5 – The Blackwater Rail Trail:** Intervention in the Blackwater Rail Trail is required for works to the existing Benton Bridge carrying the A12 over (but not forming part of) the Blackwater Rail Trail. Replacement land is to be provided as part of the area located east of the A12, between the Blackwater Rail Trail and the new Open Space south of the River Brain.
- **Area 6 – Land North of Market Lane:** The open space to be acquired permanently is needed for the widening of the existing A12 at Witham, and the provision of new drainage from the A12 in to the River Brain. Replacement land is to be provided as part of the area referred to in numbered paragraphs 2 and 4 above.
- **Area 7 – Land at Maldon Road Crossing of River Brian, Witham:** The Open Space land forming plots 8/27a, 8/47c and 8/47d is to be subject to permanent new rights for the diversion of services (communications apparatus) that are needed to be diverted for the widening of the existing A12 at Witham. Replacement land is to be provided south of the River Brain and East of the A12 as well as north east of the Whetmead LNR.
- **Area 8 – River Brain, Witham:** The open space land forming plots 8/47k, 8/47m, 8/47o and 8/47p to be acquired permanently is needed for the widening of the existing A12 at Witham. Replacement land is to be provided south of the River Brain and east of the A12.
- **Areas 9 and 10 – Whetmead LNR:** The open space land forming plots 8/47a, 9/11a and 9/10d to be acquired permanently is needed for the widening of the existing A12 at Witham. For plots 8/47b, 9/11b and 9/10e permanent new rights are required for diverting existing services that are already installed within the nature reserve. Replacement land is to be provided south of the River Brain and east of the A12, as north east of Whetmead LNR.
- **Area 11 – Freebournes Road, Witham:** The open space land forming plots 9/8c, 9/8e and 10/8d to be acquired permanently is needed for the widening of the existing A12 at Witham. Replacement land is to be provided on part of the former carriageway of the existing A12.
- **Area 12 – Station Road, Marks Tey:** The open space land forming plots 19/2g, 19/2h, 19/4d, 19/4e, 19/7a, 19/7c, to be acquired permanently, is needed for works to the existing junction of the A120 and Station Road, Marks Tey. Replacement land is to be provided on land held by the Applicant close to the existing open space that is required for the proposed scheme.
- **Area 13 – Copford Recreational Ground:** The open space land forming plot 19/17a to be acquired permanently is needed to divert the Roman river where it passes under the A12 at Copford. Adjacent land in private ownership is sought as replacement land.

- 9.1.42 The Applicant is satisfied that the requirements of sections 131 and 132 of the PA 2008 are met. The Replacement Land Statement [REP6-056] sets out the Applicant's justification as to how some of the exceptions in sections 131 and 132 are met in this case such that the dDCO does not need to be subject to special parliamentary procedure by reason of the compulsory acquisition of land and rights over land comprising special category land.
- 9.1.43 The Replacement Land Statement evidences the Applicant's assessment and selection of the most suitable land to be provided as replacement land for the open space required for the proposed scheme. The Applicant relies on sections 131 and 132 of the PA 2008 and that the open space required for the proposed scheme will be replaced subject to the same rights, trusts and incidents attached to the order land and it is not less in area than the order land or in any way less advantageous than before.
- 9.1.44 Annex A of the Applicant's Statement of Reasons [REP6-040] sets out why the Compulsory Acquisition (CA) powers are necessary on a plot-by-plot basis. As to replacement land, the justification in respect of that is set out in Chapter 7 of the Statement of Reasons [REP6-040], Annex C to the Statement of Reasons [REP6-091], and the Replacement Land Statement [REP6-056].
- 9.1.45 The Applicant has engaged with landowners affected by the requirement of open space to ensure that land given as replacement of the open space needed is a suitable alternative. Essex County Council, Braintree District Council, Witham Town Council and Anglian Water have agreed to the proposed replacement land and this is captured in the relevant Statements of Common Ground with those parties [REP7-027, REP7-029, REP7-031 and REP7-033].
- 9.1.46 The Applicant believes Copford and Easthorpe Parish Council is in agreement with the proposal for replacement land and the Parish Council has not engaged in the Examination to pursue an objection to the proposed replacement land.

Open Space held by private owners

- 9.1.47 It is understood that Patricia Jane Gooding and Josephine Alberta Ann Witten (in relation to areas 2 to 4) have no objection in principle and have agreed to the Applicant acquiring the open space land from them.
- 9.1.48 Finally, it is believed Taylor Wimpey UK Limited also has no objection in principle to the Applicant acquiring the open space land that Taylor Wimpey holds at Oliver's Drive, Witham.
- 9.1.49 For both areas of open space, land has been allocated for replacement land to be provided as part of the area located east of the A12, accessible by the new Gershwin Bridge, and direct from the B1018 Maldon Road.

Compelling case – s122(3) PA 2008

- 9.1.50 Section 122(3) of PA 2008 provides that there must be a compelling case in the public interest for the land to be compulsorily acquired. The NNNPS, at paragraph 2.2, identifies a "critical need" to improve road congestion to provide safe, expeditious and resilient networks that better support social and economic activity. The Applicant's Case for the Scheme [APP-249] and NNNPS

accordance table [APP-250, later revised at REP4-062] sets out that case in detail. The Government's Road Investment Strategy for 2020 to 2025 (RIS2) sets out its investment plans for the long-term investment in the road network, and particularly the strategic road network, including the A12 between junctions 19 and 25.

- 9.1.51 The Applicant has carried out diligent inquiry, as set out in The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the APFP Regulations) and the CA Guidance, to identify all persons with an interest in the Order Land (as shown on the Land Plans [REP6-015]) and all persons with a potential claim for compensation as a result of the proposed scheme. This process of diligent inquiry has continued throughout the Examination, and the Book of Reference [REP7-011] and Land Plans [REP7-003] have been updated accordingly where new ownership information has come to light.

In respect of specific objections

1: Borrow Pits:

- 9.1.52 Three of the four parties with an interest in the land intended to be used for borrow pits have objected to the acquisition of their land for the purpose of providing the Applicant with the opportunity to extract material from borrow pits for the purpose of constructing the proposed scheme. The detail of that objection has been addressed in section 6 above. For the reasons given in the Applicant's Borrow Pits Report [APP-278] and section 5.6 of the Applicant's Statement of Reasons [REP6-040] the compulsory acquisition of land for borrow pits is necessary to:
- reduce the cost of the construction of the scheme
 - secure the quality and quantity of material required to construct the proposed earthworks
 - secure the scheme programme (linked with cost, Open for Traffic date and design year);
 - minimise the traffic impacts from construction activities and its related environmental impacts such as greenhouse gas emissions.
- 9.1.53 The extent of land take required is proportionate with the quantity of material that is required to be won to meet the scheme earthworks deficits, to provide temporary working and storage space and to mitigate the temporary impacts of the extraction works. The acquisition of land for borrow pits to meet the proposed scheme earthworks deficit has come as a result of an extensive assessment to determine the best way to construct the proposed scheme. The options to meet the earthworks volume deficit were considered in the early stages of delivery strategy development, which determined that borrow pits are necessary for delivering the proposed scheme.

- 9.1.54 There has been progress in those cases where land is required for borrow pits. Heads of Terms have been issued in respect of borrow pit leases and meetings have been invited to discuss in more detail.
- 9.1.55 In respect of the individual representations from owners of borrow pit land heads of terms have been substantially agreed:
- (a) The Honourable John Frederick Strutt and The Right Honourable John Gerald Sixth Baron Rayleigh**
- 9.1.56 The Applicant responded to the points raised by the Affected Parties' relevant representation in The Applicant's Response to Relevant Representations [REP1-002]. There has been extensive engagement between the parties throughout the examination process.
- (b) Deanna Bunting and Susan Bunting, Executors of Robert Anthony Bunting and JA Bunting and Sons**
- 9.1.57 The Affected Parties have engaged extensively in the Hearings. The Applicant's position is set out in its submissions of oral representations at ISH4 [REP5-021]; Sections 6.2, 6.4 6.9 and 6.10; CAH 2 [REP5-022]; and in the Applicant's Comments on Information received at Deadline 5 [REP6-090]. In summary the Applicant has demonstrated there is a compelling case for the need and extent of the proposed extraction at this location, as with each of the proposed borrow pits, in accordance with its submitted Borrow Pits Report [APP-278]. Negotiations continue.
- (c) Henry Robert Siggers/Parker Strategic Land**
- 9.1.58 The Affected Parties have engaged extensively in the Hearings, including at CAH3. The Applicant submits there is a compelling need for the relevant borrow pit to provide granular engineering material for the proposed scheme - see Borrow Pits Report [APP-278] para 6.4.13. The Applicant's case is further set out in its responses to the representations made by the Affected Parties at Deadline 6 (see pages 225 of REP6-090).
- 9.1.59 As is stated in para 8.4 of the Applicant's written submission of oral case at CAH2 [REP5-022], the Affected Parties suggested that the figures for the deficit fill and the volumes to be taken from the borrow pits are unclear. The Applicant has been entirely consistent and has fully justified the figures presented. In summary there is 1.9m³ required and 1.3m³ available from the scheme which leaves a deficit of 0.6m³ of general fill required, to be sourced from borrow pits E (100,000m³), F (100,000m³) and I (400,000m³). In addition, a further 445,000m³ of engineering fill is required, of which 300,000m³ is available from borrow pit J. The Applicant produced a simplified summary of its case for the borrow pits and the quantities required in the A12 Proposed Scheme Earthworks Deficit Plan in the Borrow Pits Summary Report at "Plate 2.2" [REP5-015].
- 9.1.60 Whilst negotiations with the Affected Parties will continue the Applicant believes the extent and nature of the proposed permanent acquisition of the borrow pit land is reasonable and is required for the proposed scheme to proceed. Whilst the Affected Parties have development aspirations for the land, there is no

allocation in the recently adopted Braintree Local Plan for the relevant parts of the Order land (see page 243 of REP6-090).

(d) Simon Robert Brice, Pamela Brice and Clare Brice/ Coleman's Quarry

- 9.1.61 The Brice family own the quarry land which forms the new junction 22 of the A12. To ensure that minerals are extracted ahead of construction works, the Applicant has been working with the Brice family on the construction programme and supporting them in amending the original planning permission so that the phasing of the mineral extraction can align with the A12 works. That part of the Order land that comprises part of Colemans Quarry is required for the works to provide the new junction 22 of the A12. There is a compelling case in the public interest for the acquisition of the required land held by the Brice Family at that location and the parcels to the north east of Colemans Quarry that are also required for the proposed scheme, as the land is required for the principal works and for the provision of the new junction 22. The Applicant has been working with the Brice family to provide for a solution that allows for the winning of materials from the quarry prior to the proposed scheme commencing.

2. Other Parties making representations at Hearings:

(a) David and Stephen Bolton

- 9.1.62 The Boltons have made a number of objections to the powers sought over their land, principally regarding the extent of the land subject to the Order and also the impacts of the proposed powers on their retained land.
- 9.1.63 The Applicant has been able to reduce the extent of the Affected Parties' land subject to powers in the Order, as a result of the Applicant's change application. The Applicant is otherwise satisfied that the land is required for the purposes of the Order and the detailed reasons are set out in the Applicant's Written submission of oral case for Compulsory Acquisition Hearing 2 at 8.14 [REP5-022]. As was discussed in Compulsory Acquisition Hearing 3, the Applicant will where possible, enter into agreement with the affected parties on reasonable terms to secure the proposed works and the ability to create by agreement new rights for the Applicant and other parties. Absent such agreement, there remains a compelling case in the public interest for the Applicant to secure the freehold of the required land. Additionally, the Applicant has committed to minimising impacts on the car boot sale in paragraph 2.2.7 of the Outline Construction Traffic Management Plan [REP2-003].

(b) Wacey family, Wishing Well Farm

- 9.1.64 Objection was made principally on the basis of the injurious affection that would be caused to Wishing Well Farm as a result of the proposed scheme. A blight application had been accepted by the Applicant and the delay was in relation to receiving a claim from the Wacey's agent. The claim has been received and the value for Wishing Well Farm is provisionally agreed subject to receipt by the Applicant of a building surveyor's report.

(c) Mr Ian Mahoney

- 9.1.65 Part of Mr Mahoney's land is required for a temporary WCH and utilities bridge parallel to Station Road Hatfield Peverel. The Applicant believes there is a compelling case for the powers sought and continues to liaise with Mr Mahoney regarding the practical arrangements for reducing the impacts of the proposed scheme on his land.

(d) Mark David Cathcart

- 9.1.66 Mr Cathcart has objected to the compulsory acquisition of new rights in his land. (His representations at hearings have been made in Issue Specific Hearings rather than Compulsory Acquisition Hearings.) The Applicant is working with Cadent to resolve, to the extent it can, the concerns raised by Mr Cathcart but submits that there is a clear and compelling case for the new rights sought to allow for the diversion of the gas pipeline through Mr Cathcart's land to permit the widening of the A12 in the vicinity of the River Brain.

(e) Mr and Mrs Lindsay

- 9.1.67 Mr and Mrs Lindsay's property is not included in the Applicant's land plans and book of reference for acquisition but their interest is noted in neighbouring plots. These include the presumed interest in the subsoil to the highway their property has a frontage with and also in respect of the potential benefit of historic covenants over neighbouring land that forms part of the Order Land. The Lindsays have expressed concerns regarding the physical implementation of the works in the vicinity of their property, including the proximity of a construction haul road, compound and the potential removal of a hedgerow on the highway frontage of their property. The Applicant has liaised with the Lindsays regarding the potential discretionary purchase of the Lindsays' property and whether assurances sought by the Lindsays can be given by the Applicant. The Applicant believes it has given the appropriate support and assurances it reasonably can at this stage in the design of the scheme and will continue to liaise with the Lindsays as detailed design progresses.

(f) Robert Alexander Buchanan, Harry Christopher Buchanan and Elizabeth Anne Buchanan

- 9.1.68 The Affected Parties' principal submissions were made in their relevant representation. The representations relate to the nature and extent of the proposed acquisition. A brief oral representation was made at Compulsory Acquisition Hearing 3 regarding an update on detailed design for the installation of a new gas pipeline in the Affected Parties' land. The Applicant maintains its case that there is a compelling need for the powers sought in the dDCO and the nature of acquisition is appropriate given the physical changes to the land required for the proposed scheme to proceed. Negotiations continue.

(g) Lynfield Properties Limited

- 9.1.69 The Interested Party made representations at Compulsory Acquisition Hearing 2 in addition to its relevant representations and written submissions at Deadline 5 (see REP5-039). The Applicant relies in particular on its responses to the Deadline 5 Representations at page 151 on of REP6-090. The Applicant

believes that the stopping-up of the existing northbound junction 21 on-slip road is justified and maintains that the proposed HGV egress from the site is geometrically appropriate.

(h) Prested Hall/Pegasus (Prested) Investment

- 9.1.70 The Applicant notes (but does not agree with) the Interested Parties' concerns about access to Prested Hall becoming more convoluted and creating longer journey times. The Applicant does not consider that access would worsen as a result of the proposed scheme. The construction phasing is being developed to maintain access to Prested Hall as far as possible, see the Outline Construction Traffic Management Plan [REP6-054] Sections 2.11.3 and 9.21. There would be, on limited occasions, activities such as the tie in points to the new Prested Hall access where access may need to be managed and may cause some disruption. The Applicant will continue to liaise with the Interested Parties.

(i) Royal London UK Real Estate Fund and Edmundson Electrical Limited

- 9.1.71 The Affected Parties have made representations at each Compulsory Acquisition Hearing and argue there is no compelling case for the temporary powers sought over the car park and service areas of the relevant land nor any compelling case for the new rights sought for the provision of maintenance easements for culverts under the A12 nor for the diversion of the existing gas pipeline and overhead electricity power cables. They have also submitted that alternative temporary access routes exist and that the proposed temporary access route is inadequate for its intended purpose. The impact on the occupier's business is also a ground of objection.
- 9.1.72 The Applicant has considered, and responded to, all of the suggested alternative proposals for access - see the Applicants comments on the response to 2.5.14 in the Applicant's Comments on Others' Responses to ExQ2 [REP5-003].
- 9.1.73 Access from the A12 would require traffic management and single lane running on the A12, which for safety reasons and to avoid traffic weaving would need extend into the exit slip road, reducing its capacity. This would consequentially cause disruption to junction 19.
- 9.1.74 It is not practicable to access the diversionary works via the adjacent Cadent Above Ground installation site due to the gas pipelines and infrastructure as well as cables that are at shallow depth and could not take the loading of construction vehicles.
- 9.1.75 The compelling need for the proposed works and the powers to carry out those works is set out in the Applicant's written submission of oral case for Compulsory Acquisition Hearing 2 at 8.11 [REP5-022]. The Applicant has shown a compelling case for the powers sought and that there is no better alternative to the powers proposed. The Applicant will continue to liaise with the Affected Parties and the Compensation Code will apply.

3. Parties who made several representations during the Examination process but have not attended Hearings:

(a) CMS LLP on behalf of Legal and General Assurance (Pensions Management Limited)

9.1.76 In their respective responses to ExQ3.5.1 submitted at Deadline 6 the Interested Party confirmed that discussions continue for the resolution of the required temporary possession of the relevant land at Eastways Business Park in Witham so as to minimise the impact on tenants and operations on the Estate. Heads of Terms have been substantially agreed between the parties. The Applicant believes it will be possible to secure agreement as the concerns of the Interested Party have been accommodated.

(b) Countryside Zest (Beaulieu Park) LLP

9.1.77 Representations have been made in respect of the proposed acquisition of land for the new Paynes Lane Bridge to be provided by the Applicant across the A12 and the Great Eastern Main Line Railway north of junction 19 at Boreham. The objection is focused on the impacts of the Applicant's proposals on the owner's consented development known as Beaulieu Park, and the associated new railway station. The Applicant believes it will be possible to secure an agreed solution to the owner's concerns and that in any event its proposals will complement the Beaulieu Park scheme and improve connectivity between Beaulieu Park and Boreham.

4. Parties who made relevant representations and written representations:

9.1.78 A number of parties made both relevant representations and written representations but have not otherwise engaged in the examination. For these parties the Applicant responded to the points raised in the relevant representations and written representations through the documents submitted at Deadline 1 and Deadline 3 - 'The Applicant's Response to Relevant Representations' [REP1-002] and 'The Applicant's Comments on Written Representations' [REP3-009]. The Applicant continues to rely on those responses.

9.1.79 The relevant parties with remaining representations (excluding representations from parties where blight notices have been accepted) are:

- Gerrard Robert Bibbey and Jayne Marie Bibbey – the issue regarding the PROW at the fisheries is addressed in section 6 above.
- Essex County Fire & Rescue Service
- Victoria and Gary Woods
- Charles Robert Barker Hewitson and James Westwood Squier
- Patricia Jane Gooding and Josephine Roberta Ann Witten
- Ulting Overseas Trust
- Michael Mott and Samantha Jane Mott (Written representation only)

- Elizabeth Susan West, Jack Daniel West, and Daniel Ronald West (as trustees of the R.F. West Discretionary Trust) (Written representation only)

9.1.80 The position in respect of Prested Hall is set out above.

5. Other Parties making relevant representations only:

9.1.81 In respect of those parties making representations relating to the compulsory acquisition of interests in their land, but who have not engaged in the examination after the Applicant responded to the points raised through the relevant representation at Deadline 1 (in ‘The Applicant’s Response to Relevant Representations’ [REP1-002]) the Applicant relies on its responses in its response document.

6. Special Category Land and Statutory Parties with an Interest in land:

(a) The Crown Estate Commissioners

9.1.82 The Crown Estate Commissioners submitted relevant representations regarding land at Feering, required for the proposed scheme. Heads of Terms for the required transactions are settled and an agreement between the parties, relating to S135 consent, was concluded on 5 July 2023. The Crown Estate Commissioners have now issued S135 consent.

(b) Objections to land acquisition by statutory undertakers

9.1.83 The following statutory undertakers have made representations regarding the acquisition of land:

- i) Network Rail Infrastructure Limited
- ii) Anglian Water Services Limited and AWG Land Holdings Limited

9.1.84 The position regarding these parties, and in particular in relation to serious detriment, is set out in the section on statutory undertakers’ land below.

(c) Representations relating to Local Authorities’ land

9.1.85 The following statutory undertakers have made representations regarding the acquisition of land:

- *Chelmsford City Council* - The Applicant responded to the points raised at Deadline 1, in its Response to Relevant Representations [REP1-002]. The City Council has not pursued its objection subsequently and the Applicant replies on its submissions made at Deadline 1.
- *Essex County Council* - The Applicant has responded to the points raised through the relevant representation and written representation at Deadline 1 and Deadline 3 respectively, ‘The Applicant’s Response to Relevant Representations’ [REP1-002] and ‘The Applicant’s Comments on Written Representations’ [REP3-009].
- *Witham Town Council* - The Applicant responded to the points raised at Deadline 1, in its Response to Relevant Representations. [REP1-002]. The Town Council has not pursued its objection subsequently and the Applicant replies on its submissions made at Deadline 1. The Town

Council has accepted the principles of acquisition of open space and replacement land in its Statement of Common Ground [REP7-031].

(d) Environment Agency

- 9.1.86 The Applicant responded to the points raised by the Environment Agency in its relevant representation and written representation at Deadline 1 and Deadline 3 respectively, [REP1-002] and [REP3-009]. The Applicant and Interested Party have a public Statement of Common Ground [REP7-020]. The Environment Agency is maintaining an objection to the proposed scheme.

7. Status of Negotiations Generally:

- 9.1.87 54 landowners were originally categorised as objecting, due to a relevant or written representation. Some objectors have taken limited further action through the Examination phase and some have declined to move negotiations forward at this stage.
- 9.1.88 Offers have been made in the majority of the 54 cases where objections have been made and where there are ongoing negotiations. Responses are awaited in most of these cases. Some cases have been provisionally agreed.
- 9.1.89 Some parties retain an in-principle objection to the Compulsory Acquisition of their land and will not take negotiations forward. However, many parties are now at a position where they are objecting only to part of the acquisition or are fully engaged in the process of negotiating terms. Many of these terms are bespoke to reflect variations in circumstance, or there remain differences in views on valuation. This is particularly common where landowners have development aspirations for their land and seek a level of compensation that National Highways cannot justify under the compensation code.

Human Rights Act 1998

- 9.1.90 The Applicant's approach to compulsory acquisition has been consistent with relevant obligations in the Human Rights Act 1998. Article 6 of the Convention is discharged by the examination process. Article 1 of Protocol 1 is discharged by the appropriate processes under the Planning Act 2008 being followed and the relevant parties having a right to claim compensation under the compensation code.
- 9.1.91 It is accepted that Article 8 (private and family life) is engaged, but to the extent that it is, then the interference is justified in the public interest and is proportionate. Acquisition or resolution of 19 of the 22 residential properties within the Order Limits have now been agreed. 10 transactions have completed, 9 wish to remain but with mitigation provided (some of whom are also being temporarily rehoused during the works) and for the remaining 3 properties statutory blight has been accepted with terms in negotiation. As to Article 1 of the First Protocol of the European Convention on Human Rights, again it has been demonstrated that the acquisition of the Order land is necessary and proportionate to the public interest, and owners will be compensated for the interests in land acquired. In relation to Article 6 (right to a

fair hearing), the Applicant is content that fair and proper procedures have been followed for the consultation process and in determining the compulsory acquisition powers included within the dDCO. Landowners have been able to challenge the acquisition through the Examination process, including testing the necessity of the extent of land required and the Applicant has given persons with an interest in the land a full opportunity to comment on the proposals, both in a statutory and non-statutory capacity.

- 9.1.92 There is a compelling case in the public interest for the compulsory acquisition powers included within the dDCO, and that proper procedures are followed. Any interference with a human right is proportionate and otherwise justified.
- 9.1.93 The detail of the properties affected has been provided in Section 6 of the Statement of Reasons, paragraphs 6.1.8 to 6.1.28. A detailed schedule of meetings with the landowners is provided at Appendix B of the Statement of Reasons [REP6-040].
- 9.1.94 The Applicant recognises that the proposed scheme may have an impact on individuals but considers that the significant public benefits that will arise from the proposed scheme.
- 9.1.95 The relevant Convention Rights have therefore been considered by the Applicant and the required legal obligations relevant to compulsory acquisition have been met.

Equality Act 2010

- 9.1.96 The Applicant has complied with its duties under Section 149 of the Equality Act 2010 (Environment Agency 2010) and has had due regard to the need to (i) eliminate unlawful discrimination, harassment, victimisation and other conduct prohibited by or under the Environment Agency 2010; (ii) advance equality of opportunity between persons who share a protected characteristic and persons who do not share it; and (iii) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 9.1.97 The Applicant has carried out an Equality Impact Assessment (EqIA) [APP-270] to consider how the proposed scheme could directly impact and contribute to equality effects for equality groups. The assessment concludes that the developed embedded mitigation measures in combination with the ongoing actions outlined in the EqIA should provide benefits for those equality groups and help to minimise any adverse impacts of the proposed scheme.
- 9.1.98 The EqIA will continue to be developed throughout the remaining design and construction stages of the proposed scheme. It will ensure that due regard is made towards the needs of people with protected characteristics under the Environment Agency 2010. It will also help identify opportunities for enhancing equality of opportunity and fostering good relations between those who have protected characteristics and those who do not. The EqIA concludes that the proposed scheme is likely to provide a range of benefits that can be shared by equality groups. This includes direct benefits such as improved WCH provision as well as safer and more efficient conditions for drivers.

- 9.1.99 This degree of impact and the scope for building mitigation into the proposed scheme leads to the conclusion that there is no impediment to the proposed scheme and monitoring will be ongoing to ensure that remains the case.
- 9.1.100 In respect of land acquisition, the Applicant has identified affected persons with protected characteristics and designed the proposed scheme considering the issues that could be experienced by equality groups including the needs of WCH. Access to community facilities will be improved by the reintroduction of bus stops.
- 9.1.101 However, the EqIA has also identified a number of impacts where groups with protected characteristics may experience disproportionate or differential adverse effects. These include:
1. Increases in noise levels during construction and operation for some residential properties in the area. This may disproportionately and/or differentially affect children, older people and those with disabilities in close proximity the scheme. Mitigation measures have been developed and more detail can be found in the First Iteration Environmental Management Plan [REP4-022]
 2. Temporary diversions and closures to PRowS as well as permanent changes to routes and crossings along the scheme may have a differential impact on older people or people with disability issues. Mitigation measures to minimise impact on WCH groups are detailed in the Outline Construction Traffic Management Plan [REP6-054].
 3. The demolition of residential property could potentially have a differential adverse effect on residents who may find it more difficult to move from the property such as older people or people with disabilities. Engagement will continue with those who have been identified as being in one of the protected characteristic groups and appropriate advice, support and measures will be put in place.
 4. Temporary adjustments to bus routes could result in a change to regular journeys. This could have an adverse effect on those who rely on the service, notably younger people, older people and women. Diversions are detailed in the Outline Construction Traffic Management Plan [REP6-054].
 5. Temporary possession of land owned by churches could have an impact on those wanting to attend religious services. Engagement will continue with those who run the churches and construction plans will be shared.

Funding and Delivery

- 9.1.102 The Applicant submitted its Funding Statement [APP-043], in compliance with Regulation 5(2)(h) of the Infrastructure Planning Regulations 2009 as well as in accordance with the Department for Communities and Local Government guidance 'Planning Act 2008: Guidance related to procedures of compulsory acquisition'.
- 9.1.103 As previously stated in the Ex2 (5.0.3) response [AS-021], paragraph 2.1.1 of the Funding Statement states the most likely estimate of the proposed scheme

is £1045- £1268m, of which £60m is for compulsory acquisition including all implementation costs.

- 9.1.104 The Applicant also recognizes through recent Ministerial Statements, the latest being released in March 2023, that some schemes have been delayed due to ongoing challenges. For the A12 widening scheme, funding remains in place.

Statutory Undertakers Land – s127 PA 2008

Introduction

- 9.1.105 Statutory undertakers benefit from the protections in relation to compulsory acquisition: Sections 127 and 138 of the Planning Act 2008 (PA 2008).

Section 127

- 9.1.106 Section 127 of the PA 2008 only applies in relation to land used for carrying on a statutory undertaker's undertaking or an interest in land held for those purposes.

- 9.1.107 For the compulsory acquisition of such land the Secretary of State must be satisfied that:

- (3)- *(a) it can be purchased and not replaced without serious detriment to the carrying on of the undertaking, or*
(b) if purchased it can be replaced by other land belonging to, or available for acquisition by, the undertakers without serious detriment to the carrying on of the undertaking.

- 9.1.108 For rights the Secretary of State must be satisfied that:

- (6)- *(a) the right can be purchased without serious detriment to the carrying on of the undertaking, or*
(b) any detriment to the carrying on of the undertaking, in consequence of the acquisition of the right, can be made good by the undertakers by the use of other land belonging to or available for acquisition by them.

Section 138

- 9.1.109 Section 138 of the PA 2008 makes provision about the rights of statutory undertakers in third party land:

- (4) *The order may include provision for the extinguishment of the relevant right, or the removal of the relevant apparatus, only if the Secretary of State is satisfied that the extinguishment or removal is necessary for the purpose of carrying out the development to which the order relates.*

2. Statutory Undertakers

- 9.1.110 There has been engagement with a total of 13 statutory undertakers, including operators of electronic communications code networks. The latest position of negotiations is documented within the Status of Negotiations with Statutory

Undertakers, at Deadline 6 [REP6-081]. As negotiations are ongoing, a further update will be provided at Deadline 7 [REP7-048]

Relevant Representations

- 9.1.111 Relevant representations have been received from four statutory undertakers, namely National Grid, Cadent Gas, Anglian Water, and Network Rail.
- 9.1.112 National Grid has subsequently confirmed that it is content with the specific protective provisions included in its favour in Part 4 of Schedule 11 of the dDCO and has withdrawn its objection.
- 9.1.113 Where a statutory undertaker has not made a relevant representation the ExA is entitled to conclude that they do not consider that the scheme will cause them serious detriment, and to have regard to the standard protections for statutory undertakers and the operators of communications code networks in Parts 1 and 2 of Schedule 11 of the dDCO and to conclude that they are adequately protected in respect of compulsory acquisition.

Outstanding Representations

- 9.1.114 There remain three outstanding relevant representations from statutory undertakers which have not been withdrawn. These are each considered in turn below.

Anglian Water

- 9.1.115 Protective provisions in favour of Anglian Water are largely agreed between the parties.
- 9.1.116 The only outstanding issue is the "stand-off distances" be set out in paragraph 27(7) of Part 3 of Schedule 11.
- 9.1.117 The distances in paragraph 27(7) determine how close works under the DCO must be before the undertaker must submit a plan of the works to Anglian Water to allow them to consider what, if any, requirements should be placed on the works to protect their apparatus and access to it, or allowing them to remove the apparatus.
- 9.1.118 The stand-off distances included in National Highway's dDCO reflects previous precedent in the A47 Blofield, Tuddenham, Thickthorn and Wansford orders.
- 9.1.119 They also reflect the "easement distances" in Anglian Water's "Cross Sector Infrastructure Access Statement" (March 2019). The table at page 6 of that document sets out distances for land where no development is proposed and enhanced distances for "land marked for development or land use changes within the next 20 years in the local plan".
- 9.1.120 It then states "Any work undertaken outside our standard easement widths along pipelines may proceed without reference" to Anglian Water.
- 9.1.121 The distances contained in the protective provisions in the dDCO align with the enhanced distances (although the protective provisions give a distance from the median line (on one side of the pipe, from the median line), whereas the Cross Sector Infrastructure Access Statement give the total distance (on both sides of the pipe)).

- 9.1.122 Anglian Water has stated [REP5-023] that the distances in the dDCO are not sufficient because of (they state):
- "a number of shortcomings that have arisen through experiences in addressing our own maintenance and repairs to our assets and from previous nationally significant infrastructure projects that interfaced with our assets".*
- 9.1.123 Anglian Water has not set out what those shortcomings are or specific details of scenarios where this has caused them problems. National Highways does not therefore consider that sufficient justification has yet been provided for it to accept this departure from the precedent of the A47 schemes' protective provisions.
- 9.1.124 Anglian Water's proposed stand-off distances present a significant increase in distances from those proposed by National Highways and would therefore be likely to pose a significant increase in the administrative burden on National Highways in terms of the extent of consultation and the works which may be caught by requirements which may be imposed by Anglian Water under the terms of the protective provisions. It therefore has the potential to have significant effects on the programme.
- 9.1.125 If further justification and examples can be provided then National Highways will consider this further, and whether the amendments may be justified, or if other solutions may be more appropriate.
- 9.1.126 In the event that agreement is not reached by the end of the Examination the Secretary of State will need to adjudicate on whether to accept National Highways' or Anglian Water's distances.
- 9.1.127 It is acknowledged that the stand-off distances are included in the dDCO to prevent damage to Anglian Water's pipes, and potential service interruption. However, the stand-off distances relate to retained apparatus (which is not to be diverted as part of the scheme). National Highways is not, in relation to retained apparatus, acquiring land or rights of Anglian Water or extinguishing their rights or removing apparatus. It is not therefore considered that Section 127 or 138 of the Planning Act 2008 are engaged.
- Cadent Gas*
- 9.1.128 National Highways understands that the protective provisions included with Cadent in Part 5 of Schedule 11 of the dDCO are in an agreed form. They are in the form of the protective provisions previously included in the A47 Blofield and Thickethorn orders where Cadent withdrew their objection to those schemes.
- 9.1.129 It is understood that Cadent has one outstanding issue relating to the scheme, which relates to the fact that one of the diversion routes runs through Benton Golf Club and that that location may make future maintenance more expensive.
- 9.1.130 This issue has been raised by Cadent and the Applicant is investigating potential solutions with Cadent.
- 9.1.131 In National Highways' submission, to the extent that the proposed diversions may engage section 127 or 138 of the Planning Act 2008, Cadent would not suffer serious detriment as a result of the diversion. Paragraph 56(1) of the

protective provisions provide that Cadent's existing rights cannot be extinguished until "facilities and rights" have been provided to the reasonable satisfaction of Cadent. Paragraph 57 of the protective provisions provides that the "facilities and rights" must be no less favourable than the ones in relation to the apparatus which is to be decommissioned. Importantly, if they are less favourable the matter may be referred by Cadent to arbitration and the arbitrator may provide for the payment of compensation to Cadent.

- 9.1.132 In light of paragraphs 56 and 57 of the protective provisions contained in Schedule 11 of the dDCO, it is submitted that Cadent would not suffer serious detriment as a result of the making of the DCO in its current form.

Network Rail

- 9.1.133 In order for Network Rail to dispose of land or rights it will first undertake an internal process called "clearance" which is divided into two parts: business clearance and technical clearance. This process requires Network Rail to consult its internal experts to establish whether the disposal will have any adverse effects on the railway and, if so, what conditions should be imposed on disposal to mitigate those effects.
- 9.1.134 Once clearance has been obtained, Network Rail will complete the paperwork in respect of condition 17 of its Network Licence confirming that the land and rights in question are subject to powers of compulsory acquisition and that the clearance process has been completed successfully.
- 9.1.135 It is understood that Network Rail considers that disposal of its land or rights without first having gone through the process under condition 17 of its Network Licence would put it in breach of the terms of its licence. Therefore, it is only once these processes are complete that Network Rail considers that it may transfer land and rights to National Highways by private treaty.
- 9.1.136 The dDCO includes protective provisions in favour of Network Rail in Part 6 of Schedule 11. Paragraph 69 of the protective provisions include a comprehensive restriction on National Highways exercising its powers under the DCO (including powers of compulsory acquisition) in respect of railway property without the consent of Network Rail.
- 9.1.137 In order to progress the proposed scheme the Applicant therefore has to agree to acquire land and rights from Network Rail by private treaty and to go through the process set out above. Those negotiations are proceeding.
- 9.1.138 The clearance process is under way, and it is this process which has indicated a potential signal sighting concern for Network Rail. However, it is anticipated that the design of the proposed Paynes Lane bridge, with the piers outside of the operational railway boundary, means this is unlikely to be an issue. The Applicant is working with Network Rail to resolve its concerns.
- 9.1.139 Two key points can therefore be made:
- 9.1.140 Firstly, the protections afforded by the protective provisions preclude compulsory acquisition land and rights without Network Rail's consent. This means that the Applicant must engage with Network Rail to secure acquisition by agreement. The protective provisions therefore provide sufficient power to

Network Rail to avoid any conflict of the scheme with the railway and the ExA can be confident that no issues arise under Sections 127 or 138 of the Planning Act 2008 (serious detriment)

- 9.1.141 Secondly the emergence of safety concerns around signalling through the clearance process, demonstrates that this is the case and that the process works. Where issues of serious detriment could potentially arise as a result of the scheme Network Rail will, through the clearance process, identify those issues and impose suitable conditions on clearances to protect the railway (for example to ensure that issues do not arise in relation to signalling). National Highways is precluded from acquiring land and rights by compulsion, and Network Rail will not enter into any private treaties with National Highways in relation to the transfer of land or rights unless they are subject to any conditions which might arise through the clearance process.
- 9.1.142 Finally, it should be noted that although there are differences between National Highways and Network Rail as to the precise wording of the protective provisions which should be included in the final made DCO, there is no difference between the parties as to the wording of paragraph 69 in Part 6 of Schedule 11 of National Highways' dDCO.
- 9.1.143 Network Rail's protective provisions are set out in [REP6-108]; National Highways' response (including a table setting out the differences between the parties and its reasoning for rejecting Network Rail's amendments) is set out in the Applicant's Comments on information received at Deadline 6 [REP7-045]. In the event that those differences are not resolved by the close of the examination the Secretary of State will need to adjudicate between the parties in relation to the final wording of the made DCO.
- 9.1.144 In light of the restrictions placed on National Highways acquiring railway property under paragraph 69 in Part 6 of Schedule 11, National Highways submits that the Examining Authority can be assured that issues of serious detriment do not arise under the dDCO in relation to Network Rail.

Crown Land - s135 PA 2008

- 9.1.145 As referred to in the Crown Land Plans [REP6-016] and the Book of Reference [REP6-042] the proposed scheme requires land acquisition or permanent rights over land from the following Crown bodies:
- Secretary of State for Transport; and
 - The Crown Estate
- 9.1.146 In relation to the consent required from the Secretary of State for Transport, the Applicant is progressing negotiations and is confident that this consent will be obtained before the end of examination.
- 9.1.147 The land at Feering held by the Crown Estate Commissioners has been the subject of extensive discussions between the relevant parties. Consent under S135(1) and (2) was issued by The Crown Estate Commissioners on 5 July 2023.

Absence of Other Impediments

- 9.1.148 The Applicant prepared a Consents and Licences Position Statement updated at Deadline 3 [REP3-007] which sets out what consents, licences and agreements are expected to be needed for the proposed scheme, along with the Applicant's intended strategy for obtaining those consents, licences and associated agreements.
- 9.1.149 An updated Consents, Licences and Agreements Position Statement [REP3-007] was submitted by the Applicant at Deadline 3.
- 9.1.150 Whilst the majority of consents will be sought following completion of detailed design which will enable National Highways to include specific detail needed for the consent applications, the Applicant is progressing some consents where possible at this stage.
- 9.1.151 With regards to the badger licence, a 'Letter of No Impediment' has been secured which states some caveats for the final licence. This licence is formally applied for by the Applicant and issued by Natural England once the DCO is granted.
- 9.1.152 With regards to Great Crested Newt licences, an Impact Assessment and Conservation Payment has been secured and the licence will be issued once the DCO is granted.
- 9.1.153 With regards the bat licence, a revised bat licence was submitted to Natural England on the 23 March 2023. The revised document addresses the minor comments received from Natural England on the Draft Bat Licence, submitted to the examination as part of the original submission [APP-140]. A 'Letter of No Impediment' has been secured which states some caveats for the final licence. This licence is formally applied for by the Applicant and issued by Natural England once the DCO is granted.
- 9.1.154 As set out in section 6 above, the Applicant has proposed changes to the dDCO and is no longer seeking to disapply the environmental permitting regulations through the DCO. This means that it will have to obtain flood risk activity permits from the Environment Agency. The Applicant has set out in section 6 above why this is not likely to give rise any impediment to the scheme in circumstances where the Secretary of State has determined that the proposed culverts are acceptable.
- 9.1.155 The Applicant is also looking to begin the process for applying for the consents that have the longest lead in times, mainly being the groundwater abstraction and discharge licences associated with the borrow pits.
- 9.1.156 The Applicant is therefore satisfied that that are not likely to be any impediments to the proposed scheme proceeding if development consent is given. In accordance with paragraph 19 of the CA Guidance, the Applicant has considered fully the need to obtain any operational and other consents which may apply to the authorised development. The Applicant is properly managing the potential for risk or impediment to the implementation of the proposed scheme arising from the need to obtain any additional consent or agreement.

10 Conclusion

- 10.1.1 The proposed development has been identified as a national priority in the National Infrastructure Delivery Plan (2016), the East of England Route Strategy (2017), various plans produced by Highways England and its successor organisation National Highways and the Department for Transport's Road Investment Strategy plans for 2015-2020 (RIS1) and 2020-2025 (RIS2). The proposed scheme meets a national need to increase the capacity of the SRN. The scheme will improve the safe operation of the network for all users, will improve the freight connections to East of England ports and will provide the necessary highway capacity to support the traffic growth generated by the wider housing and employment development plans for Essex.
- 10.1.2 The benefits of the proposed development are set out in detail in the Case for the Scheme [APP-249]. The proposed development will deliver significant benefits, including improved safety, faster and more reliable journeys by road, greater network resilience and improved facilities, better connectivity and safer more enjoyable journeys for walkers, cyclists, horse riders and public transport users. The economic benefits will comfortably exceed the cost of the scheme.
- 10.1.3 The proposed development is of national significance and aligns with Government policy. In particular, the PA 2008 requires that the DCO is determined in accordance with the NNNPS, which provides the primary policy basis for decision-making. The Applicant has carefully considered the policy approaches set out in the NNNPS and has ensured complete compliance with these.
- 10.1.4 The applicant has carried several consultations during the pre-application process and one consultation for a change application during examination. Upon submission of the Applicant's DCO application, the host authorities stated that the Applicant had carried out adequate pre-application consultation in accordance with the provisions set out in Section 42, Section 47 and Section 48 of the PA 2008. The change application followed the same principles as all other previous consultations by the applicant, which resulted in all changes being accepted into the examination. The applicant concludes that all consultations were open, fair and took due regard to the responses, complying with all statutory duties.
- 10.1.5 The Applicant has demonstrated how the careful selection of the proposed development from an assessment of the feasible alternatives, and the design work undertaken, will minimise adverse impacts. These options and the scheme itself have been the subject of appropriate consultation in accordance with legislative requirements.
- 10.1.6 The Applicant considers that the proposed scheme meets the requirements of the NNNPS relating to 'good design' and is wholly consistent with policy emerging in the draft NNNPS. There are no reasons on design grounds to withhold development consent. The applicant's design, particularly relating to WCH overbridges has evolved in collaboration with local stakeholders, specifically Essex County Council and Chelmsford City Council, to help meet local standards and design aspirations. This is captured in the SoCG with

Essex County Council and Chelmsford City Council, Requirement 10 and 20 of the dDCO, in the REAC, and in Appendix B of the Design Principles.

- 10.1.7 The proposed scheme provides significant improvements to the WCH network between Chelmsford and Colchester, to address severance and improve connectivity between communities and its countryside. The scheme will provide several crossings and new connections to enable people to walk and cycle from Junction 21 to Junction 25 parallel to the A12, promoting active travel.
- 10.1.8 The proposed scheme also includes a gas main diversion that is an NSIP in its own right. Options for route of the gas main diversion were considered and the proposed route has been fully assessed in the Applicant's Environment Statement. The Applicant believes that the route chosen is justified and strikes a reasonable balance between the likely environmental effects and the engineering and operational constraints of the proposed pipeline diversion route. The applicant will continue to work with Cadent Gas to deliver the gas main diversion within the REAC commitments made during examination.
- 10.1.9 There is a compelling case for the compulsory acquisition of the land required to deliver the scheme including the land required for borrow pits and environmental mitigation and its consequent benefits in the public interest.
- 10.1.10 On the basis set out above, the Applicant invites (1) the Examining Authority to recommend that the DCO be made; and (2) the Secretary of State to so make it, in the form submitted by the Applicant at Deadline 8 (as that is updated at Deadline 8 following remaining but ongoing discussions with some relevant stakeholders).