

M25 junction 28 improvement scheme

TR010029

9.136 Applicant's response to Secretary of State's consultation - 14 October 2021

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1. Introduction

- 1.1.1 This document sets out National Highways'¹ response to the Department for Transport's letter dated 14 October 2021 containing ten requests by the Secretary of State (SoS) for additional information from National Highways.

2. Secretary of State's request 1. Brentwood Borough Council's Local Plan:

- 2.1.1 *The Secretary of State notes the position regarding Brentwood Borough Council's Local Plan was at an early stage during the Examination. **Brentwood Borough Council** and the **Applicant** are asked to provide an update on the position of the Local Plan and whether the emerging plan has been advanced to a stage where policies contained therein are important and relevant to the consideration of the proposed development.*

2.2 National Highways' response

- 2.2.1 The Case for the Scheme (APP-095) Appendix A Table A.2 provides an assessment of the Scheme against the relevant planning policies set out within both the adopted Brentford Local Plan (2005) and the pre-submission version of the emerging Local Plan (2019).
- 2.2.2 It is understood that this emerging Local Plan has been submitted to the Secretary of State for examination and following feedback, the Council have prepared a schedule of main modifications to the plan which are currently under consultation. National Highways has reviewed these main modifications and does not consider that any of the proposed changes would alter the conclusions drawn and set out within Appendix A Table A.2 of the Case for the Scheme.
- 2.2.3 Notwithstanding this, Table 2.1 below provides a summary of the planning policies set out in the pre-submission version of the plan, any proposed change identified as a main modification and a commentary on the impact this has on the conclusions drawn within Appendix A Table A.2 of the Case for the Scheme.
- 2.2.4 Furthermore, it has been confirmed with Brentwood Borough Council that part of the modifications to the Local Plan include the introduction of Policy MG06 which seeks to include the optimisation of existing and further sustainable transport measures where appropriate along with improvements to several strategic highway junctions, including M25 junction 28. As such, it is considered that the Scheme is fundamental to provide additional capacity at the junction and accommodate planned growth in Brentwood.

¹ The application was submitted in the name of Highways England. Since the application was submitted the formal name of the applicant has changed from Highways England to National Highways, following the change of company name from Highways England Company Limited to National Highways Limited on 8 September 2021. The company number and registered address remain the same.

Table 2.1: Review of emerging Brentwood Local Plan policies

Brentwood Local Plan Pre-submission (2019) Policy	Proposed Change noted in Main Modification Schedule (September 2021)	Impact on Case for the Scheme Appendix A Table A.2
POLICY NE01: Protecting and Enhancing the Natural Environment	Amended to STRATEGIC POLICY NE01: PROTECTING AND ENHANCING THE NATURAL ENVIRONMENT and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE03: Trees, Woodlands, Hedgerows	Policy NE03 remains with policy wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE05: Air Quality	Amended to STRATEGIC POLICY NE08: AIR QUALITY and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE06: Flood Risk	Amended to STRATEGIC POLICY NE09: FLOOD RISK and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE07: Contaminated Land and Hazardous Substances	Amended to POLICY NE10: CONTAMINATED LAND AND HAZARDOUS SUBSTANCES and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE08: Floodlighting and Illumination	Amended to POLICY NE11: FLOOD LIGHTING AND ILLUMINATION and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY NE9: Green Belt	Amended to STRATEGIC POLICY MG02: GREENT BELT and wording amended	No change to the conclusion set out in Appendix A Table A.2
STRATEGIC POLICY SP02: Managing Growth	Amended to POLICY MG01: SPATIAL STRATEGY and wording amended	No change to the conclusion set out in Appendix A Table A.2
STRATEGIC POLICY SP03: Health Impact Assessments (HIAs)	Amended to POLICY MG04: HEALTH IMPACT ASSESSMENTS (HIA) and wording amended	No change to the conclusion set out in Appendix A Table A.2
STRATEGIC POLICY SP05: Construction Management	Policy removed	Policy removed, therefore assessment of Scheme against policy no longer relevant
POLICY BE02: Sustainable Construction and Resource Efficiency	Policy removed	Policy removed, assessment of Scheme against policy no longer relevant
POLICY BE08: Sustainable Drainage	Amended to POLICY BE05: SUSTAINABLE DRAINAGE and wording amended	No change to the conclusion set out in Appendix A Table A.2

Brentwood Local Plan Pre-submission (2019) Policy	Proposed Change noted in Main Modification Schedule (September 2021)	Impact on Case for the Scheme Appendix A Table A.2
POLICY BE11: Strategic Transport Infrastructure	Amended to STRATEGIC POLICY BE08: STRATEGIC TRANSPORT INFRASTRUCTURE and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY BE16: Mitigating the Transport Impacts of Development	Amended to POLICY BE12: MITIGATING THE TRANSPORT IMPACTS OF DEVELOPMENTS and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY BE19: Access to Nature	Policy removed	Policy removed, therefore assessment of Scheme against policy no longer relevant
POLICY HP18: Designing Landscape and the Public Realm	Policy removed - STRATEGIC POLICY BE14: CREATING SUCCESSFUL PLACES created	Conclusion put forward in response to the now removed Policy HP18 is applicable to Strategic Policy BE14 and demonstrates that the scheme has complied with the requirements of Policy BE14
POLICY HP19: Conservation and Enhancement of Historic Environment	Amended to STRATEGIC POLICY BE16: CONSERVATION AND ENHANCEMENT OF HISTORIC ENVIRONMENT and wording amended	No change to the conclusion set out in Appendix A Table A.2
POLICY HP23: Scheduled Monuments and Archaeological Remains	Policy removed	Policy removed, assessment of Scheme against policy therefore it is no longer relevant

3. Secretary of State's request 2. New Route for Non-Motorised Users:

3.1.1 *The Secretary of State notes that at the close of the Examination, the Unilateral Undertaking relating to a new non-motorised route identified for the proposed development had not been agreed. The **Applicant, London Borough of Havering, TfL and Essex County Council** are asked to provide an update on the latest position?*

3.2 National Highways' response

3.2.1 National Highways (then Highways England) entered into a unilateral planning obligation, under section 106 Town and Country Planning Act 1990, on 7 July 2021 concerning the provision of new, improved facilities for non-motorised users (NMU) at junction 28 of the M25. The obligation was given to the London Borough

of Havering and to Brentwood Borough Council as the relevant local planning authorities and as such an electronic copy of the obligation was provided to the authorities on 7 July 2021 and hard copies provided on 13 August 2021. A copy was also submitted to the Examining Authority on the 7 July 2021 and can be found in the examination document library under reference REP10-023.

- 3.2.2 The unilateral obligation requires National Highways to construct the central part of the wider NMU route before the loop road comprised in the DCO scheme is opened to traffic. As explained during the examination of the application, the wider NMU is outside the scope of the DCO Scheme. The wider NMU scheme is a substantial scheme in itself and was not before the Examining Authority for consideration during the examination of the DCO application. National Highways is not in a position at present to deliver the NMU route as a whole as it does not have the necessary powers to do so. The NMU route proposals in their entirety can only be delivered with the agreement of others, namely the highway authorities and National Highways will be pursuing discussions with them accordingly in due course. Accordingly, it would be unreasonable and inappropriate to impose a requirement obligating National Highways to deliver the entire NMU scheme and the executed section 106 obligation renders any requirement to deliver the NMU upgrade through the M25 junction unnecessary.

4. Secretary of State's request 3. Request for an Update to the Environmental Information:

4.1 Part a

- 4.1.1 *The Secretary of State requests that the **Applicant** provides additional information on the following:*

a) *the scheme's compliance with the fifth and sixth carbon budget including an update to the assessment of the impact of the scheme on the carbon budgets as set out in [Chapter 14](#) of the Applicant's Environmental Statement and updated at [deadline 4](#).*

4.2 National Highways' response

- 4.2.1 A summary of the UK Government carbon budgets relevant to the Scheme is provided in Table 4.1. Table 4.1 provides information already presented in Table 14.2 of the Climate chapter of the Environmental Statement (ES) (APP-036) with the addition of the carbon reduction levels for each carbon budget and information regarding the 5th and 6th carbon budget.
- 4.2.2 As requested, the assessment of scheme greenhouse gas (GHG) emissions against the UK Government carbon budgets has been undertaken covering the GHG emissions that are projected to occur across the relevant carbon budget periods up to and including the 6th carbon budget.

Table 4.1: UK carbon reduction targets

Carbon budget	Carbon budget level	Reduction below 1990 levels
3rd carbon budget (2018 to 2022)	2,544 MtCO ₂ e ²	37% by 2023
4th carbon budget (2023 to 2027)	1,950 MtCO ₂ e	51% by 2025
5th carbon budget (2028 to 2032)	1,725 MtCO ₂ e	57% by 2030
6th carbon budget (2033 to 2037)	965 MtCO ₂ e	78% by 2035

Note:
MtCO₂e = Million Tonnes CO₂ equivalent

Table source: [REDACTED]

4.2.3 Chapter 14 in the ES (APP-036) presents projected emissions from the Scheme in the context of the 3rd carbon budget (as shown in paragraph 14.1.10.8). The projected emissions from the Scheme in the context of the 4th carbon budget is presented in The Carbon Budget Assessment (REP4-024). The projected emissions compared to all current and future legislated carbon budget periods, including the 3rd, 4th, 5th and 6th carbon budgets are presented in Table 4.2 below.

Table 4.2: Scheme GHG emissions in 5-year periods aligned with relevant carbon budgets

Project stage	Estimated total carbon over carbon budgets (tCO ₂ e)	Net CO ₂ project GHG emissions (tCO ₂ e) (DS-DM Scenario)	Relevant carbon budget			
			3 rd Carbon Budget (2018-22)	4 th Carbon Budget (2023-27)	5 th Carbon Budget (2028-32)	6 th Carbon Budget (2033-37)
Construction	36,954	36,954	12,318	24,636	-	-
Operation	14,889,449	8,359	358	2,119	2,667	3,215
Total	14,926,403	45,313	12,676	26,755	2,667	3,215
% of Carbon Budget			0.00050%	0.00137%	0.00015%	0.00033%

Note:

The figures presented in Table 14.13 'Total Operational Emissions' in Chapter 14 of the ES (APP-036) shows total operational emissions as 4,877 tCO₂e for the design year 2037 which is derived from the difference of Do Minimum 1,023,707 tCO₂e and Do Something 1,028,584 tCO₂e.

Based upon the final road carbon user values from May 2020 (when the assessment was finalised) the total operational emissions for the design year 2037 is 687 tCO₂e which is

² Million tonnes of Carbon Dioxide equivalent

Project stage	Estimated total carbon over carbon budgets (tCO ₂ e)	Net CO ₂ project GHG emissions (tCO ₂ e) (DS-DM Scenario)	Relevant carbon budget			
			3 rd Carbon Budget (2018-22)	4 th Carbon Budget (2023-27)	5 th Carbon Budget (2028-32)	6 th Carbon Budget (2033-37)

derived from the difference of Do Minimum 1,023,707 tCO₂e and Do Something 1,024,394 tCO₂e. This is a lower figure from that apparent from Table 14.13 in the ES (APP-036) which should have been updated with the final values prior to the DCO application being made.

The values in this table show total net emissions for each of the carbon budget periods.

- 4.2.4 Table 4.2 summarises the GHG emissions of the Scheme including emissions from construction and operation (the latter including road user, operational energy use and maintenance emissions).
- 4.2.5 Table 4.2 compares the carbon impact of the ‘Do Minimum’ option of not building the Scheme with the ‘Do Something’ option of building the Scheme. The comparison of the two scenarios provides the net emissions from construction and operation across each carbon budget period.
- 4.2.6 The contribution of the Scheme to the 5th Carbon Budget would be 2,667 tCO₂e (equivalent to 0.00015% of that budget) and the contribution of the Scheme to the 6th Carbon Budget would be 3,215 tCO₂e (equivalent to 0.00033% of that budget).
- 4.2.7 This does not alter the conclusion of the climate assessment in the ES (APP-036), which is that the Scheme will not materially impact the UK’s ability to meet its carbon budgets and will therefore not generate a significant effect on climate (see paragraph 14.1.14.1 in APP-036). This conclusion is based on the policy stance set out in the National Policy Statement for National Networks (NPS NN) paragraphs 5.17 and 5.18.
- 4.2.8 It should be noted that this assessment is conservative. The tool used to calculate the CO₂e emissions for this road project was the Department for Environment, Food and Rural Affairs’ (Defra) Emission Factor Toolkit (EFT) v8³. This was the current version of EFT at the time of completing the assessment. EFT has been updated periodically since the start of RIS 1 in 2015 by Defra. Later updates to EFT include revisions to fleet splits, age of vehicles, etc as the new fleet data became available and in more recent versions of EFT (V10.1), inclusion of electric vehicles. It is also important to be aware that EFT, including the latest version of EFT v10.1, can only calculate CO₂e emissions up to and including 2030.
- 4.2.9 To enable reporting, it is assumed that for the calculation of CO₂e emissions post 2030, that the 2030 emission values in EFT are used, and for the calculated CO₂e post the design year (15 years after opening) it is assumed there are no changes in CO₂e emissions, i.e. the calculated CO₂e value remains the same up to the end of the 60-year appraisal period.

³

- 4.2.10 This means that the change in CO_{2e} emissions presented in Table 4.2 represent a pessimistic / worst case position for the 60-year appraisal period. The calculated CO_{2e} emissions **do not** account for the current projections of electric cars and vans described in the latest version of DfT TAG's data book, worksheet A3.1.10⁴ nor do they take account of the projected reductions in CO_{2e} depicted in Figure 2 (Page 45) of the recently published Transport Decarbonisation Plan (TDP)⁵. The impacts of the TDP will lead to a substantive decrease in CO_{2e} emissions from all forms of road transport between now and 2050. As the TDP has only recently been published in July 2021, it has not been possible to update EFT to reflect the emerging policy position described by the TDP.
- 4.2.11 In addition to the Transport Decarbonisation Plan, National Highways published its own 2030/2040/2050 Net Zero Highways Plan. This plan includes commitments to ensure that National Highways' corporate emissions become net zero by 2030, its maintenance and construction activities will become net zero by 2040 and road user emissions on the strategic road network will become net zero by 2050.
- 4.2.12 National Highways recognise it has a key role in the development and maintenance of a strategic road network that will facilitate the journey to net zero emissions. As part of this the National Highways Net Zero Highways Plan sets out commitments to develop a blueprint for EV charging and energy storage by 2023 and to report to government on global HGV technology trials and set out proposals for trials in the UK in 2022.

Response summary and conclusion

- 4.2.13 The contribution of GHG emissions resulting from the Scheme is assessed as a maximum of 0.00137% across all relevant carbon budget periods and 0.00015% of the 5th carbon budget and 0.00033% of the 6th carbon budget. Consequently, National Highways does not consider CO_{2e} emissions resulting from the Scheme to have a material effect on the government's ability to comply with the carbon budgets.

4.3 Part b

- 4.3.1 *The Secretary of State requests that the **Applicant** provides additional information on the following:*

b) building on Chapter 14 of the Applicant's Environmental Statement the direct, indirect and cumulative likely significant effects of the scheme with other existing and/or approved projects on climate, including greenhouse gas emissions and climate change adaptation.

4.4 National Highways' response

- 4.4.1 To support this response the following terms have been interpreted as follows:

■ [REDACTED]

■ [REDACTED]

■ [REDACTED]

- Direct emissions - direct emissions to the atmosphere from relevant activities (e.g. tailpipe emissions from road users or construction vehicles);
- Indirect emissions - indirect emissions resulting from the purchase of electricity (e.g. for infrastructure operation) and/or any relevant downstream activities by third parties within the supply chain (e.g. embedded carbon from the manufacturing of construction products such as concrete);
- Cumulative effects of the scheme - The consideration of the GHG emissions impact of the scheme with other relevant committed developments included within the traffic model for the scheme;
- Likely significant effect - An increase in carbon emissions resulting from a proposed scheme that are so significant that the scheme would have a material impact on the ability of Government to meet its carbon reduction targets (as per paragraphs 5.17 and 5.18 of the NPS NN).

4.4.2 The response to part b of the Secretary of State's request is provided in two parts. The first part relates to the climate effects, i.e. the GHG aspect of the question and the second part relates to climate vulnerability, i.e. the climate change adaptation aspect.

Part 1 Direct, indirect and cumulative effects of the Scheme – GHG emissions

4.4.3 Direct and indirect emissions on account of the Scheme are inherently included within the GHG assessment methodology described in section 14.1.5 of the ES Chapter 14 (APP-036)).

4.4.4 Emissions from construction materials included in the assessment of the construction effects of the Scheme are inherently 'indirect emissions' as they are an accumulation of embedded emissions that occur throughout the construction supply chain (i.e. an accumulation of various emissions sources such as raw material extraction, manufacturing transportation, manufacturing processes etc). The operational tailpipe emissions and construction process emissions from plant/vehicles on site are inherently 'direct' emissions as they are emissions that are directly released to the atmosphere.

4.4.5 The consideration of the cumulative effects of the Scheme with other existing and/or approved projects is inherent within the methodology followed in the ES through the inclusion of the Scheme and other locally committed developments within the traffic model which forms the basis for calculating road traffic greenhouse gas emissions (see paragraph 5.11 in the ES Chapter 5 Air quality (APP-027), paragraph 15.4.5 of the ES Chapter 15 Cumulative effects (REP9-024) and section 5.3 in the Transport Assessment (APP-098)).

4.4.6 Furthermore, to account for the carbon emissions resulting from all GHG emissions sources across the construction and operation of the Scheme, the assessment uses GHG conversion factors expressed in carbon dioxide equivalent (CO₂e). These emissions factors account for the cumulative global warming potential of 6 different GHGs (as defined by the Kyoto Protocol) from emissions sources across the Scheme, therefore accounting for the indirect behaviour of gases in the atmosphere over a 100-year time period.

- 4.4.7 Additionally, the emissions from the Scheme are considered against the national context of continuing economic activity through the comparison of the resulting emissions from construction and operation of the Scheme with the UK carbon budgets, which consider sectors across the economy. Were the Scheme to have a material effect (which it does not), it would be because, acting together with the other economic activity factored into a carbon budget, the target budget would be made significantly harder to achieve.

Part 1 Summary and conclusion

- 4.4.8 As explained above, direct, indirect and cumulative emissions are taken into consideration both during the calculation of construction emissions and through the traffic model used as the basis for calculating road user emissions.
- 4.4.9 As a result, the increase in GHG emissions associated with the Scheme is not a reason to refuse development consent. The increase would have no material impact on the ability of Government to meet its carbon reduction targets and so the proposed development does not give rise to any conflict with paragraph 5.18 of the NPS NN.

Part 2 Cumulative likely effects of the Scheme with other existing and/or approved projects – Climate adaptation

- 4.4.10 Direct and indirect climate vulnerability effects on the Scheme are already included within the climate change risk assessment provided within Chapter 14 of the ES (APP-036). They have been assessed through a review of the 2018 United Kingdom Climate Impact Projections (UKCP18) published by the Meteorological Office. The climate parameters considered as part of the assessment are presented in section 14.2.7 (APP-036) and Appendix 14.2 (APP-086) of the ES and include variation to seasonal and average air temperature and precipitation.
- 4.4.11 For each potential climate vulnerability effect assessed in the ES there is a climate hazard (e.g. hotter summers), a direct effect (e.g. softening of bitumen in asphalt), an indirect effect such as a failure (e.g. deformed assets) and a consequence (e.g. traffic delays). Each potential climate vulnerability is considered holistically within the ES with regard to all of the associated direct and indirect effects. These are described in detail in Tables 14.18 and 14.19 within Chapter 14 of the ES (APP-036).
- 4.4.12 In-combination / cumulative climate change impacts, that is impacts on receptors in the surrounding environment as a result of the combined impact of the Scheme and climate change, were assessed in section 14.2.11 of the ES (APP-036) and include for example impacts associated with potential future changes to river flows.
- 4.4.13 The Scheme's ES (APP-036) found that there were no significant direct, indirect [or in-combination] climate change impacts as a result of the Scheme.
- 4.4.14 To supplement the assessment made in the ES, which already includes direct, indirect and cumulative effects, an additional assessment is made here to consider whether other strategic transport infrastructure beyond the boundary of the Scheme, which may when subject to climate impacts, have consequences

that exacerbate likely significant effects, as measured using the consequence and likelihood criteria and significance matrix described in section 14.2.5 of the ES (see Tables 14.15 'likelihood categories', Table 14.16 'measure of consequence' and Table 14.17 'significance matrix' (APP-036)).

Study area

4.4.15 Given the Scheme's importance to regional transport, cumulative climate vulnerability effects are considered at both local and regional scales. The main transport networks at these scales are shown in Figure A.1, Figure A.2 and Figure A.3 in Appendix A and are described in the following paragraphs.

Climate vulnerability baseline for cumulative effects

4.4.16 Figure A.1 (see Appendix A) shows that alternate road routes around the Scheme are primarily provided by A roads, these enable:

- Traffic traveling from the north west of the Scheme towards London (or vice versa) can interchangeably use the M11, A113, or the A12 for long distance journeys.
- Traffic traveling from the east of the Scheme towards London (or vice versa) could interchangeably use the A12, A127 or the A13 for long distance journeys.
- Traffic traveling north west to south (or vice versa), i.e. along the M25, would in the event of a junction 28 closure, need to divert via Brentwood or Romford.

4.4.17 It should be noted that although the above routes provide access around the Scheme, providing resilience in the event of climate change impacts on the Scheme, they are themselves also vulnerable to climate change impacts.

4.4.18 With regard to access to other transport networks:

- Most traffic for London Stanstead airport uses junction 27 on the M25 for the M11 rather than relying on junction 28.
- Most traffic for London Southend airport uses junction 29 on the M25 for the A127 rather than relying on junction 28.
- Most traffic for Tilbury port and London Gateway Port uses junction 30 on the M25 for the A13 rather than relying on junction 28.
- Traffic traveling north west to south (or vice versa), i.e. along the M25, to access any of the above transport hubs would be affected by an unplanned closure of junction 28 but would have the option of diverting via Brentwood or Romford.

4.4.19 All of the above mentioned regional alternate routes are interconnected by other A roads providing some flexibility at an unforeseen point of traffic disruption that caused re-routing. The routes also all intersect the M25 providing further flexibility to switch between them.

4.4.20 In addition to the above major routes around the Scheme there is also an abundance of local routes which would also provide resilience in the event of climate vulnerability impacts in the area.

- 4.4.21 Road and rail networks crossing the study area do not operate in isolation; there are likely to be interdependencies between them, especially for commuters. Major rail disruption may increase road traffic in the area and the same, though to a lesser extent (due to the greater flexibility in the road network), may be true in reverse, i.e. road disruption may cause an increase in rail transport.
- 4.4.22 The rail transport network is shown on Figure A.2 (see Appendix A to this document). This shows that the main line route from Liverpool Street to Ipswich passes through the study area. Southwest of the Scheme there are options to divert around the study area using the London Underground and London Overground. North of the Scheme options to divert around the study area require more travel; Cambridge can be reached from King's Cross and St Pancras, from where there are alternative routes back to Liverpool Street via Stansted Airport or Ipswich. East of the Scheme there is an alternative route from Fenchurch Street, via Pitsea, to Southend from where there is an alternative route to Liverpool Street via Shenfield.
- 4.4.23 The Scheme will improve transport resilience by replacing old degrading assets that were designed with less resilience to climate change than the assets that will replace them. Further details on the climate change mitigation that is embedded into the Scheme design can be found in Tables 14.18 and 14.19 within Chapter 14 of the ES (APP-036).

Potential cumulative climate vulnerability effects

- 4.4.24 Cumulative vulnerability effects are determined with regard to their significance without the Scheme compared to their significance if the Scheme and its climate vulnerability mitigation were to be in operation. If there is no change in significance a cumulative effect is deemed to be not significant.
- 4.4.25 Climate vulnerability effects assessed in the ES (APP-036) have been reviewed to identify which could cause the most significant worst case cumulative effects in the study area. Of all the potential climate vulnerability effects described in the ES flood risk is considered to be the most likely to cause wide-spread disruption related to a climate event (see Figure A.3, Appendix A). This is as opposed to many of the other effects which relate to slow onset climate changes, such as gradual increases in temperature which have consequences that can typically be mitigated via more regular maintenance.
- 4.4.26 Effects associated with flood risk are likely to affect local roads most significantly; the Strategic Road Network (SRN) (trunk roads and motorways) and railway lines having a higher level of flood protection. As regards flood risk, the Scheme has been designed to relevant standards with regard to anticipated climate change.
- 4.4.27 Table 4.3 below sets out how a worst-case cumulative effect (heavy rainfall events) would be scored in each scenario (i.e. with and without the scheme) and shows that there would be no significant cumulative climate vulnerability effects associated with the Scheme.

Table 4.3: Climate vulnerability cumulative effect assessment

Scenario	Impact	Likelihood	Consequence	Significance
Without Scheme	Flooding after an extreme rainfall event causes closures of some local roads around the Scheme and disruption on some of the larger roads around it, e.g. lane closures.	High - The event occurs several times during the lifetime of the project (60 years) e.g. approximately once every five years, typically 12 events.	Minor adverse - Diversions and bottle necks cause regional level disruption to strategic route(s) lasting less than 1 day	Significant
With Scheme	Flooding after an extreme rainfall event causes closures of some local roads around the Scheme and disruption on some of the larger roads around it, e.g. lane closures. The Scheme will improve the resilience of its assets to climate vulnerability effects and improve accessibility in the study area – thereby reducing traffic disruption so improving resilience to consequences caused by climate vulnerabilities (compared to the without scheme scenario). Neither of the above will be sufficient to change the worst case cumulative consequences compared to the without scheme scenario.	High - The event occurs several times during the lifetime of the project (60 years) e.g. approximately once every five years, typically 12 events.	Minor adverse - Diversions and bottle necks cause regional level disruption to strategic route(s) lasting less than 1 day	Significant
			Change in significance:	<u>No change</u>
<p>Note:</p> <p>Table follows the climate vulnerability methodology set out in Chapter 14 Climate within the ES (APP-036). When comparing this assessment with the methodology set out in Design Manual for Roads and Bridges LA 114 Climate, guidance which was published after the preparation of the ES Chapter 14 (APP-036), the assessment would show non-significant effects rather than significant.</p>				

Part 2 Summary and conclusion

- 4.4.28 The cumulative assessment demonstrates that the Scheme will improve the resilience of the SRN to the effects of climate change. It will do this by replacing old less resilient assets and improving accessibility within the study area; thereby improving the flow of traffic. In operation, the Scheme will enhance the resilience of the regional transport network to respond to cumulative climate vulnerability effects, i.e. failures of surrounding local and regional transport networks.
- 4.4.29 The vulnerability assessment has shown that there will be no change in the significance of cumulative effects in the worst-case scenario described.

4.5 Part c

The SoS has requested that the additional information be provided '*b)....in light of the requirements contained in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and in light of paragraphs 5.17 and 5.18 of the National Policy Statement for National Networks*'.

4.6 National Highways' response

- 4.6.1 The SoS has requested that the additional information be provided '*...in light of the requirements set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and in light of paragraphs 5.17 and 5.18 of the National Policy Statement for National Networks.*'
- 4.6.2 In terms of compliance with the Infrastructure Planning (Environmental Impact Assessment Regulations) 2017 (as amended) (the EIA Regulations), the Scheme constitutes EIA development for the purposes of those regulations. The Scheme is therefore subject to the environmental impact assessment process provided for at regulation 5 of the EIA Regulations, which includes the preparation of an ES. An ES was duly prepared and was submitted with National Highways' application for development consent.
- 4.6.3 Paragraph 5 of Schedule 4 of the EIA Regulations provides that the ES must, among other matters, include a description of:
- "(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;*
- (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;"*
- 4.6.4 The ES submitted with the application included a chapter on climate: Chapter 14 (APP-036), and on the assessment of cumulative effects: Chapter 15 (REP9-024), in order to meet the requirements of the EIA Regulations referred to above. The information provided in this response is additional information for the purposes of the EIA Regulations and is provided in response to the Secretary of State's request to assist him in discharging his duty under regulation 21 of the EIA Regulations to reach a reasoned conclusion on the significant effects of the Scheme on the environment.
- 4.6.5 The NPS NN, at 5.17 states that "*Where the development is subject to EIA, any Environmental Statement will need to describe an assessment of any likely*

significant climate factors in accordance with the requirements in the EIA Directive” and “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. However, for road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government’s carbon budgets”. Paragraph 5.18 states “...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”.

- 4.6.6 In relation to paragraphs 5.17 and 5.18 of the NPS NN, this response, together with the information provided in the ES demonstrates that the Scheme will not materially affect the ability of the Government to meet its carbon budgets. Accordingly, the increase in carbon emissions that may arise in consequence of the Scheme is not a reason to refuse development consent pursuant to paragraph 5.18 of the NPS NN.

5. Secretary of State’s request 4. Update on Agreements:

5.1 Part a

- 5.1.1 *a) The Secretary of State notes that the voluntary side agreement relating to matters concerning alterations to the existing access arrangements provided to National Grid Electricity Transmission had still to be signed at the end of the Examination. The **Applicant, National Grid Electricity and National Grid Gas** are asked to update on the latest position and whether the side agreement has been concluded and signed?*

5.2 National Highways’ response

- 5.2.1 National Highways can confirm side agreements with National Grid Electricity Transmission and National Grid Gas have been signed and were completed on 6 July 2021. The agreements provide for access arrangements and the protection of National Grid’s apparatus during the construction and operation of the Scheme.
- 5.2.2 National Grid Electricity Transmission and National Grid Gas confirmed their agreement with the protective provisions included for the benefit of National Grid in the last version of the DCO submitted to the examination (REP9-012) in an email of 6 July 2021 to the Examining Authority (REP10-021). That email also confirms National Grid’s withdrawal of its previous representations made on the application.

5.3 Part b:

- 5.3.1 *4 b) The Secretary of State notes the tri-party agreement with **Gardens of Peace, Cadent Gas, and the Applicant** in relation to the operational matters of Plot 1/8 were still to be resolved and signed at the end of the Examination. The parties are asked to confirm whether an agreement has been concluded and signed?*

5.4 National Highways' response

- 5.4.1 The proposed tripartite agreement between National Highways, Cadent Gas Limited ("Cadent") and the Gardens of Peace has not yet been completed but the parties remain in active discussion.
- 5.4.2 The way in which the gas diversion works will be carried out by Cadent in order to minimise any disruption to the operation of the cemetery as far as reasonably practicable has been resolved in principle and those arrangements are reflected on the attached plan (see Appendix B to this response). It is proposed to attach an updated version of the plan to the agreement (minor revisions are required for example issues relating to the temporary parking).
- 5.4.3 The proposed arrangements include a temporary car park for users of the cemetery until the gas diversion works have been done. Planning permission is needed for the temporary car park and this has now been applied for by National Highways. The application, which has been made to the London Borough of Havering, is due for decision by mid-December 2021. The form of licence to be given by Gardens of Peace to Cadent and National Highways for the temporary car park has been settled.
- 5.4.4 The parties have also revisited timings and it has been agreed that Cadent will not require access before 27 April 2022. The mitigation (early works) will be undertaken ahead of the gas diversion works.
- 5.4.5 Otherwise the work remaining to be done on the agreement is to determine the wording to be agreed on matters such as environmental liability, compliance with charities law if there is to be a voluntary disposition of rights by Gardens of Peace in Cadent's favour and consideration for such disposition by way of easement, arrangements around timing and content of the schedule of condition of the works area prior to Cadent commencing works (and again when their works are completed) and certain other matters.
- 5.4.6 The parties are hopeful that the agreement will be settled within the next few weeks and they will provide the Secretary of State with such further update as he may request.
- 5.4.7 This response has been agreed by all three parties to the proposed agreement.

5.5 Part c:

- 5.5.1 *4 c) The Secretary of State notes a tri-party agreement between the **Applicant, Luddington Golf Club Ltd and Glebelands Estates Ltd** in respect of financial matters and property agreements in respect to the reconfigured golf course had still to be signed at the end of the Examination. The parties are asked to confirm the latest position and whether an agreement has been concluded and signed?*

5.6 National Highways' response

- 5.6.1 An agreement between National Highways, Luddington Golf Club Ltd (LGL) (the lessee and operator of the golf course) and Glebelands Estates Ltd (GEL) (the freehold owner) has not yet been reached. The parties have been in discussions but limited progress has been made in terms of settling the agreement itself.

- 5.6.2 National Highways provided a full draft agreement to both parties on 20 April 2021. Plans to be appended to the agreement were provided by National Highways to LGL and GEL in June 2021.
- 5.6.3 Although there has been correspondence around the arrangements, not least in relation to the appointment of consultants and their fees, National Highways only received a response on the draft agreement from LGL's solicitors on 27 October 2021, and comments on the wording of the draft from GEL are still awaited.
- 5.6.4 The broad scope of the proposed agreement is described by National Highways in examination documents REP8-019 and REP9-069. However, in short, the draft agreement provides for LGL's contractor carrying out the necessary works to reconfigure the golf course in such a way that National Highways' programme for the junction improvement works is not compromised.
- 5.6.5 There has been delays in a provisional specification for the reconfiguration works being prepared on behalf of LGL and discussions about GEL's role in that process. In July, National Highways agreed to meet the costs of LGL's consultant (Weller Designs Limited) producing this. However, no such specification has been provided to date and one needs to be agreed in order that it can be costed in an appropriate level of detail.
- 5.6.6 National Highways agreed to pursue a re-configuration of the course based on the wishes of LGL/GEL. The DCO application was changed accordingly, this being National Highways' change request No 7. It remains National Highways' wish to accommodate LGL's and GEL's wishes as regards the course re-configuration but there needs to be some certainty as to the maximum costs involved, since National Highways took into account the likely costs involved as claimed by LGL when deciding to pursue the change request. Accordingly, it is not reasonable, in the opinion of National Highways, for it to have an open ended responsibility in respect of the costs of the works, and so there should be an agreed maximum limit on the costs National Highways should be liable for.
- 5.6.7 National Highways will continue to progress these negotiations in good faith and will update the Secretary of State when and if an agreement is reached. However, National Highways cannot compel LGL or GEL to enter into any particular arrangements at any particular time or at all. Accordingly, National Highways recognises that as a fall-back position, a requirement may be needed to govern the nature and timing of the golf course reconfiguration works which would be undertaken pursuant to the DCO.
- 5.6.8 The ExA proposed a form of requirement during the examination (see examination document [PD-021]) in the following terms;

“No part of the new loop road forming Work No.6 shall be used until Work No.32 has been completed to the satisfaction of the Secretary of State”.

- 5.6.9 National Highways responded at deadline 8 [REP8-010, page 13] (having proposed wording for a requirement in relation to the golf course works at deadline 7 – (see document REP7-019)) by proposing that the requirement, should it be needed, should state that:

“Accommodation works to provide replacement facilities for Maylands Golf Course forming Work No. 32 must be undertaken and available

for use prior to the opening to traffic of the new loop road forming Work No. 6”

5.7 Part d:

5.7.1 *4 d) The Secretary of State notes agreement had not yet been reached for acquiring permanent acquisition of rights for Plot1/6 at the end of the Examination. The **Applicant, Helen Edwards, Rachel Kingston, and Patricia Kingston** are asked to confirm the latest position and whether an agreement has been concluded and signed?*

5.8 National Highways’ response

5.8.1 Agreement has not been reached with these land owners regarding acquisition of rights for Plot 1/6 despite National Highways repeated efforts to progress this matter. National Highways has not received any response from the land owners’ advisors having made contact in emails sent on 24 June 2021, 6 May 2021, 27 September 2021 and most recently 18 October 2021.

5.9 Part e:

5.9.1 *4 e) The Secretary of State notes Protective Provisions between **the Applicant and Cadent Gas** had not been reached at the end of the Examination. The parties are asked to set out the latest position and whether an agreement has been reached and signed on all matters including the Protective Provisions?*

5.10 National Highways’ response

5.10.1 National Highways and Cadent Gas completed a side agreement on 21 October 2021 relating to the protection of Cadent’s apparatus during the construction and operation of the scheme. As part of that agreement, a form of protective provisions has been agreed for inclusion in the Order for Cadent’s benefit (see Appendix C). National Highways requests that these protective provisions are included in the Order as made. In consideration of the agreement, Cadent has contacted the Secretary of State separately in order to withdraw its representations in respect of the scheme.

5.11 Part f:

5.11.1 *4 f) The Secretary of State notes a side agreement between **the Applicant and TfL** had not been reached (which may include provisions for costs and commuted sums) at the end of the Examination in relation to ownership of the new A12 off-slip roads forming Work No.2. The parties are asked to set out the latest position and whether an agreement has been reached and signed?*

5.12 National Highways’ response

5.12.1 National Highways can confirm that a side agreement with TfL was completed on 6 July 2021. As confirmed in TfL’s submission REP9-082, the side agreement covers the interaction between the works and the TfL Road Network, design of the works, safety and assurance, defects, land and rights required and protection from Work No. 29.

- 5.12.2 The completed agreement addresses all the issues raised by TfL during the examination with the exception of the provisions in relation to the commuted sums and costs. These outstanding issues are not included in the side agreement and will be a matter for the Secretary of State's determination.
- 5.12.3 As a result of TfL and National Highways reaching an agreement which provides suitable protections to TfL as the highway authority for the new A12 eastbound off slip road, in accordance with the draft Order, no protective provisions in the Order for the benefit of TfL are necessary.

Appendices

Appendix A. Figures to accompany the response to request 3

Figure A.2 – Regional rail connections



Figure A.3 - Risk of flooding

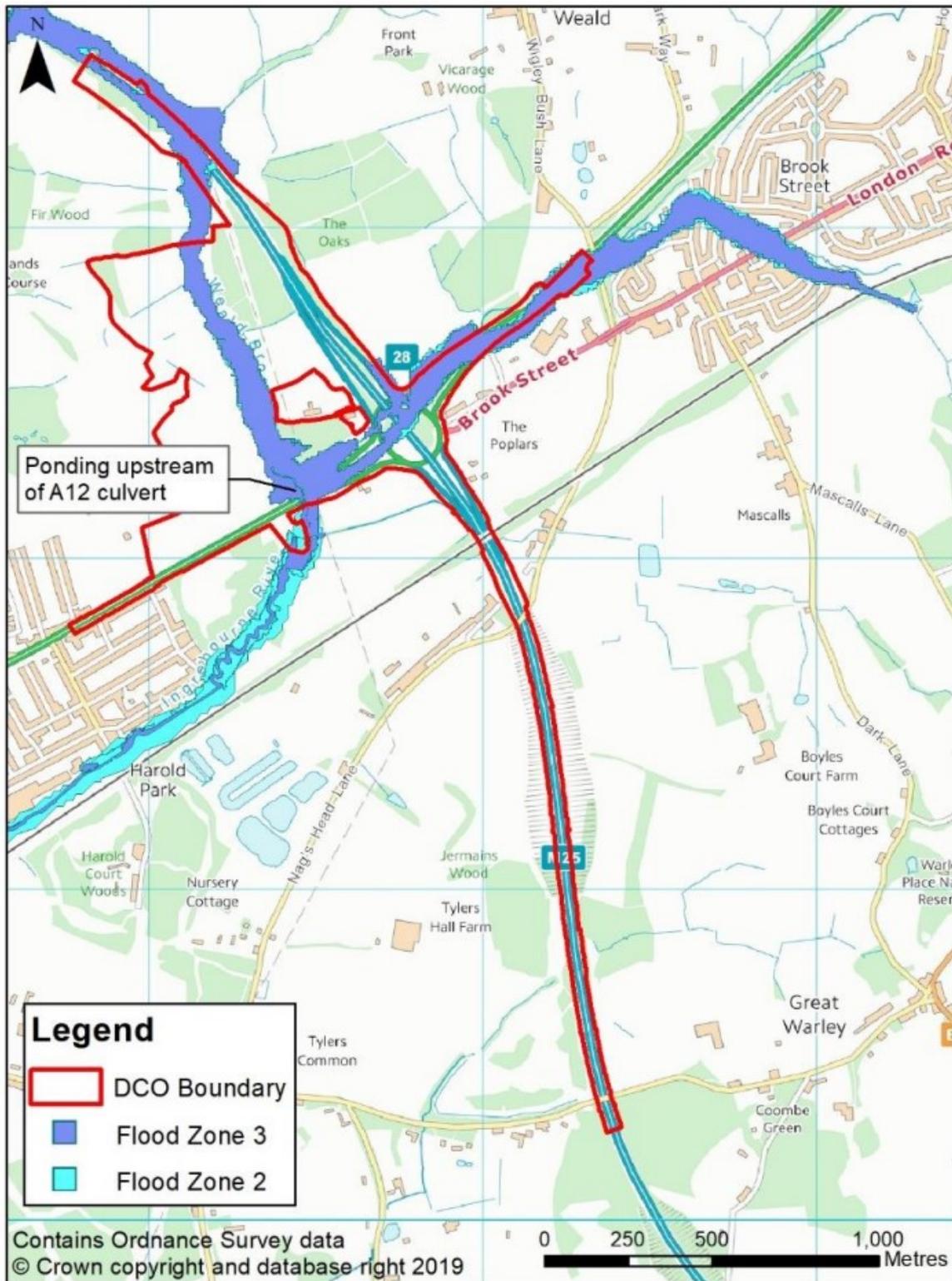
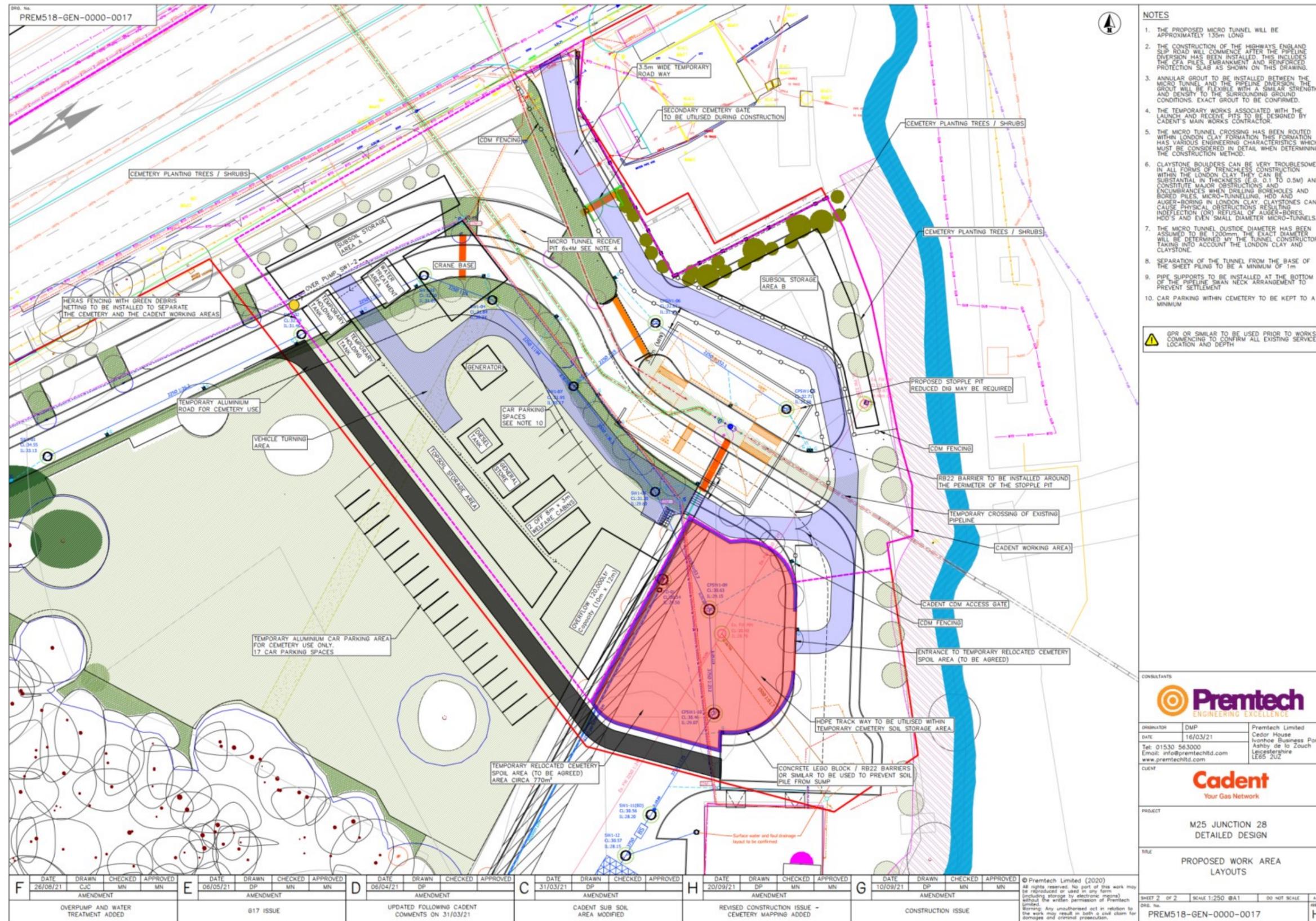


Figure source: Taken from Figure 2.2: Environment Agency Flood Zone mapping and watercourse location plan in the Flood Risk Assessment (APP-090)

Appendix B. Illustrated plan of gas main diversion



- NOTES**
1. THE PROPOSED MICRO TUNNEL WILL BE APPROXIMATELY 135m LONG
 2. THE CONSTRUCTION OF THE HIGHWAYS ENGLAND SLIP ROAD WILL COMMENCE AFTER THE PIPELINE DIVERSION HAS BEEN INSTALLED. THIS INCLUDES THE CFA PILES, EMBANKMENT AND REINFORCED PROTECTION SLAB AS SHOWN ON THIS DRAWING.
 3. ANNULAR GROUT TO BE INSTALLED BETWEEN THE MICRO TUNNEL AND THE PIPELINE DIVERSION. THE GROUT WILL BE FLEXIBLE WITH A SIMILAR STRENGTH AND DENSITY TO THE SURROUNDING GROUND CONDITIONS. EXACT GROUT TO BE CONFIRMED.
 4. THE TEMPORARY WORKS ASSOCIATED WITH THE LAUNCH AND RECEIVE PITS TO BE DESIGNED BY CADENT'S MAIN WORKS CONTRACTOR.
 5. THE MICRO TUNNEL CROSSING HAS BEEN ROUTED WITHIN LONDON CLAY FORMATION. THIS FORMATION HAS VARIOUS ENGINEERING CHARACTERISTICS WHICH MUST BE CONSIDERED IN DETAIL WHEN DETERMINING THE CONSTRUCTION METHOD.
 6. CLAYSTONE BOULDERS CAN BE VERY TROUBLESOME IN ALL FORMS OF TRENCHLESS CONSTRUCTION WITHIN THE LONDON CLAY THEY CAN BE SUBSTANTIAL IN THICKNESS (E.G. 0.1 TO 0.5M) AND CONSTITUTE MAJOR OBSTRUCTIONS AND ENCUMBRANCES WHEN DRILLING BOREHOLES AND BORED PILES. MICRO-TUNNELLING, HDD AND AUGER-BORING IN LONDON CLAY. CLAYSTONES CAN CAUSE PHYSICAL OBSTRUCTIONS RESULTING IN DEFLECTION (DR) REFUSAL OF AUGER-BORES, HDD'S AND EVEN SMALL DIAMETER MICRO-TUNNELS.
 7. THE MICRO TUNNEL OUTSIDE DIAMETER HAS BEEN ASSUMED TO BE 1200mm. THE EXACT DIAMETER WILL BE DETERMINED BY THE TUNNEL CONSTRUCTOR TAKING INTO ACCOUNT THE LONDON CLAY AND CLAYSTONE.
 8. SEPARATION OF THE TUNNEL FROM THE BASE OF THE SHEET PILING TO BE A MINIMUM OF 1m
 9. PIPE SUPPORTS TO BE INSTALLED AT THE BOTTOM OF THE PIPELINE SWAN NECK ARRANGEMENT TO PREVENT SETTLEMENT
 10. CAR PARKING WITHIN CEMETERY TO BE KEPT TO A MINIMUM
- WARNING:** GPR OR SIMILAR TO BE USED PRIOR TO WORKS COMMENCING TO CONFIRM ALL EXISTING SERVICE LOCATION AND DEPTH

CONSULTANTS

PREMTECH
 ENGINEERING EXCELLENCE

CADENT
 Your Gas Network

PROJECT
 M25 JUNCTION 28
 DETAILED DESIGN

TITLE
 PROPOSED WORK AREA
 LAYOUTS

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SHEET 2 OF 2 | SCALE 1:250 @A1 | DO NOT SCALE | A1
 DRG. No. PREM518-GEN-0000-0017 | ISSUE H

Appendix C. Agreed protective provisions with Cadent Gas

See next page

PART 1
FOR THE PROTECTION OF CADENT GAS LIMITED

Application

54. For the protection of Cadent the following provisions will, unless otherwise agreed in writing between the undertaker and Cadent, have effect.

Interpretation

55. In this Part of this Schedule—

“alternative apparatus” means appropriate alternative apparatus to the reasonable satisfaction of Cadent to enable Cadent to fulfil its statutory functions in a manner no less efficient than previously;

“apparatus” means any gas mains, pipes, pressure governors, ventilators, cathodic protections, cables or other apparatus belonging to or maintained by Cadent for the purposes of Cadent’s undertaking together with any replacement apparatus and such other apparatus constructed pursuant to this Order that becomes operational apparatus of Cadent for the purposes of Cadent’s undertaking and includes any structure in which apparatus is or will be lodged or which gives or will give access to apparatus;

“Cadent” means Cadent Gas Limited and includes its successors in title or any successor as a gas transporter within the meaning of Part 1 of the Gas Act 1986⁽¹⁾;

“Cadent’s undertaking” means the rights, duties and obligations of Cadent Gas Limited as a public gas transporter within the meaning of Section 7 of the Gas Act 1986 (as amended by the Gas Act 1995⁽²⁾);

“commence” and “commencement” include any below ground surveys, monitoring, work operations, remedial work in respect of any contamination or other adverse ground conditions, the receipt and erection of construction plant and equipment, and non-intrusive investigations for the purpose of assessing ground conditions;

“deed of consent” means a deed of consent, crossing agreement, deed of variation or new deed of grant agreed between the parties acting reasonably in order to vary or replace existing easements, agreements, enactments and other such interests so as to secure land rights and interests as are necessary to carry out, maintain, operate and use the apparatus in a manner consistent with the terms of this Part of this Schedule;

“facilities and rights” for construction and for maintenance include any appropriate working areas required to reasonably and safely undertake that construction or maintenance, and any necessary rights of access;

“functions” includes powers and duties;

“ground mitigation scheme” means a scheme approved by Cadent (such approval not to be unreasonably withheld or delayed) setting out the necessary measures (if any) for a ground subsidence event;

“ground monitoring scheme” means a scheme for monitoring ground subsidence which sets out the apparatus which is to be subject to such monitoring, the extent of land to be monitored, the manner in which ground levels are to be monitored, the timescales of any monitoring activities and the extent of ground subsidence which, if exceeded, requires the undertaker to submit for Cadent’s approval a ground mitigation scheme;

“ground subsidence event” means any ground subsidence identified by the monitoring activities set out in the ground monitoring scheme that has exceeded the level described in the ground monitoring scheme as requiring a ground mitigation scheme;

“in” in a context referring to apparatus or alternative apparatus in land includes a reference to apparatus or alternative apparatus under, over, across, along or upon such land;

“maintain” and “maintenance” have effect as if Cadent’s existing apparatus was authorised development and as if the term maintain includes protect and use;

⁽¹⁾ 1986 c. 44.

⁽²⁾ 1995 c. 45.

“plan” or “plans” include all designs, drawings, specifications, method statements, soil reports, programmes, calculations, risk assessments and other documents that are reasonably necessary properly and sufficiently to describe and assess the works to be executed;

“rights” includes restrictive covenants and, in relation to decommissioned apparatus, the surrender of rights, release of liabilities and transfer of decommissioned apparatus; and

“specified works” means any of the authorised development or activities (including maintenance) undertaken in association with the authorised development which—

- (a) will or may be situated over, or within 15 metres measured in any direction of any apparatus the removal of which has not been required by the undertaker under sub-paragraph 60(2) or otherwise; or
- (b) may in any way adversely affect any apparatus the removal of which has not been required by the undertaker under sub-paragraph 60(2) or otherwise.

On street apparatus

56.—(1) This Part of this Schedule does not apply to apparatus in respect of which the relations between the undertaker and Cadent are regulated by the provisions of Part 3 of the 1991 Act, except for—

- (a) paragraphs 57, 62, 63 and 64; and
- (b) where sub-paragraph (2) applies, paragraphs 60 and 61.

(2) This sub-paragraph applies where any apparatus is diverted from an alignment within the existing adopted public highway but not wholly replaced within the existing adopted public highway, notwithstanding that any diversion may be carried out under the provisions of Part 3 of the 1991 Act.

(3) Paragraph 63 (expenses) does not apply where the authorised development constitutes major highway works, major bridge works or major transport works for the purposes of Part 3 of the 1991 Act, but instead—

- (a) the allowable costs of the relocation works are to be determined in accordance with section 85 (sharing of cost of necessary measures) of that Act and any regulations for the time being having effect under that section; and
- (b) the allowable costs are to be borne by the undertaker and Cadent in such proportions as may be prescribed by any such regulations.

Apparatus of Cadent in stopped up streets

57.—(1) Where any street is stopped up under article 15 (permanent stopping up of streets), if Cadent has any apparatus in the street or accessed via that street Cadent is entitled to the same rights in respect of such apparatus as it enjoyed immediately before the stopping up and the undertaker must grant to Cadent, or procure the granting to Cadent of, legal easements reasonably satisfactory to Cadent in respect of such apparatus and access to it prior to the stopping up of any such street or highway, but nothing in this paragraph affects any right of the undertaker or of Cadent to require the removal of that apparatus under paragraph 60.

(2) Notwithstanding the temporary alteration, diversion or restriction of use of any street under the powers of article 13 (temporary closure, alteration, diversion and restriction of use of streets), Cadent will be at liberty at all times to take all necessary access across any such street and to execute and do all such works and things in, upon or under any such street as it would have been entitled to do immediately before such temporary alteration, diversion or restriction of use in respect of any apparatus which at the time of the stopping up or diversion was in that street.

Protective works to buildings

58.—(1) The undertaker must exercise the powers conferred by article 21 (protective work to buildings) so as not to obstruct or render less convenient the access to any apparatus without the written consent of Cadent (such consent not to be unreasonably withheld or delayed).

Acquisition of land

59.—(1) Regardless of any provision in this Order or anything shown on the land plans or contained in the book of reference to the Order, the undertaker may not appropriate or acquire any interest in land or appropriate, acquire, extinguish, interfere with or override any easement or other interest in land of Cadent otherwise than by agreement.

(2) As a condition of agreement between the parties in sub-paragraph (1), prior to the carrying out or maintenance of any part of the authorised development (or in such other timeframe as may be agreed between Cadent and the undertaker) that is subject to the requirements of this Part of this Schedule that will cause any conflict with or breach the terms of any easement or other legal or land interest of Cadent or affect the provisions of any enactment or agreement regulating the relations between Cadent and the undertaker in respect of any apparatus laid or erected in land belonging to or secured by the undertaker, the undertaker must as Cadent reasonably requires enter into such deeds of consent upon such terms and conditions as may be agreed between Cadent and the undertaker acting reasonably and which must be no less favourable on the whole to Cadent unless otherwise agreed by Cadent, and it will be the responsibility of the undertaker to procure or secure the consent to and entering into of such deeds and variations by all other third parties with an interest in the land at that time who are affected by such authorised development or maintenance thereof.

(3) The undertaker and Cadent agree that where there is any inconsistency or duplication between the provisions set out in this Part of this Schedule relating to the relocation or removal of apparatus, including but not limited to the payment of costs and expenses relating to such relocation or removal of apparatus and the provisions of any existing easement, rights, agreements and licences granted, used, enjoyed or exercised by Cadent and other enactments relied upon by Cadent as of right or other use in relation to the apparatus, then the provisions in this Schedule prevail.

(4) Any agreement or consent granted by Cadent under paragraph 62 or any other paragraph of this Part of this Schedule, is not to be taken to constitute agreement under sub-paragraph (1).

(5) As a condition of an agreement under sub-paragraph (1) that involves de-commissioned apparatus being left in situ the undertaker must accept a surrender of any existing easement or other interest of Cadent in such decommissioned apparatus and release Cadent from all liabilities in respect of such de-commissioned apparatus from the date of such surrender.

(6) Where an undertaker acquires land which is subject to any Cadent right or interest (including, without limitation, easements and agreements relating to rights or other interests) and the provisions of paragraph 60 do not apply, the undertaker must, unless Cadent agrees otherwise—

- (a) retain any notice of Cadent's easement, right or other interest on the title to the relevant land when registering the undertaker's title to such acquired land; and
- (b) (where no such notice of Cadent's easement, right or other interest exists in relation to such acquired land or any such notice is registered only on the Land Charges Register) include (with its application to register title to the undertaker's interest in such acquired land at the Land Registry) a notice of Cadent's easement, right or other interest in relation to such acquired land.

Removal of apparatus

60.—(1) If, in the exercise of the powers conferred by this Order, including pursuant to any agreement reached in accordance with paragraph 59, the undertaker acquires any interest in any land in which any apparatus is placed, that apparatus must not be decommissioned or removed under this Part of this Schedule and any right of Cadent to maintain that apparatus in that land must not be extinguished until alternative apparatus has been constructed, is in operation, and the facilities and rights referred to in sub-paragraph (2) have been provided, to the reasonable satisfaction of Cadent and in accordance with sub-paragraphs (2) to (5) inclusive.

(2) If, for the purpose of executing any works in, on, under or over any land purchased, held, appropriated or used under this Order, the undertaker requires the removal of any apparatus placed in that land, it must give to Cadent advance written notice of that requirement, together with a plan and section of the work proposed, and of the proposed position of the alternative apparatus to be provided or constructed and in that case (or if in consequence of the exercise of any of the powers conferred by this Order Cadent reasonably needs to move or remove any of its apparatus) the undertaker must afford to Cadent to its satisfaction (taking into account paragraph 61(1)) the necessary facilities and rights—

- (a) for the construction of alternative apparatus; and
- (b) subsequently for the maintenance of that apparatus.

(3) If the undertaker is unable to afford such facilities and rights as are mentioned in sub-paragraph (2), in the land in which the alternative apparatus or part of such apparatus is to be constructed, Cadent must, on receipt of a written notice to that effect from the undertaker, take such steps as are reasonable in the circumstances in an endeavour to assist the undertaker in obtaining the necessary facilities and rights in the land in which the alternative apparatus is to be constructed save that this obligation must not extend to the requirement for Cadent to use its compulsory purchase powers to this end unless it (in its absolute discretion) elects to so do.

(4) Any alternative apparatus to be constructed in land of or land secured by the undertaker under this Part of this Schedule must be constructed in such manner and in such line or situation as may be agreed between Cadent and the undertaker.

(5) Cadent must, after the alternative apparatus to be provided or constructed has been agreed, and subject to the prior grant to Cadent of such facilities and rights as are referred to in sub-paragraph (2) or (3), then proceed without unnecessary delay to construct and bring into operation the alternative apparatus and subsequently to decommission or remove any apparatus required by the undertaker to be decommissioned or removed under the provisions of this Part of this Schedule.

Facilities and rights for alternative apparatus

61.—(1) Where, in accordance with the provisions of this Part of this Schedule, the undertaker affords to or secures for Cadent facilities and rights in land for the access to, construction and maintenance of alternative apparatus in substitution for apparatus to be decommissioned or removed, those facilities and rights must be granted upon such terms and conditions as may be agreed between the undertaker and Cadent and must be no less favourable on the whole to Cadent than the facilities and rights enjoyed by it in respect of the apparatus to be decommissioned or removed unless otherwise agreed by Cadent.

(2) If the facilities and rights to be afforded by the undertaker and agreed with Cadent under sub-paragraph (1) in respect of any alternative apparatus, and the terms and conditions subject to which those facilities and rights are to be granted, are less favourable on the whole to Cadent than the facilities and rights enjoyed by it in respect of the apparatus to be decommissioned or removed, then the terms and conditions to which those facilities and rights are subject may be referred to arbitration in accordance with paragraph 68 (arbitration) of this Part of this Schedule and the arbitrator must make such provision for the payment of compensation by the undertaker to Cadent as appears to the arbitrator to be reasonable having regard to all the circumstances of the particular case.

Retained apparatus: protection of Cadent

62.—(1) Not less than 56 days before the commencement of any specified works the undertaker must submit to Cadent a plan and, if reasonably required by Cadent, a ground monitoring scheme in respect of those works.

(2) The plan to be submitted to Cadent under sub-paragraph (1) must include a method statement and describe—

- (a) the exact position of the works;
- (b) the level at which these are proposed to be constructed or renewed;
- (c) the manner of their construction or renewal including details of excavation, positioning of plant etc.;
- (d) the position of all apparatus;
- (e) by way of detailed drawings, every alteration proposed to be made to or close to any such apparatus; and
- (f) any intended maintenance regimes.

(3) The undertaker must not commence any specified works until Cadent has given written approval of the plan so submitted (and the ground monitoring scheme if required).

(4) Any approval of Cadent given under sub-paragraph (3)—

- (a) may be given subject to reasonable conditions for any purpose mentioned in sub-paragraph (5); and
- (b) must not be unreasonably withheld or delayed and Cadent must meaningfully engage with the undertaker within 28 days of the date of submission of the plan under sub-paragraph (1).

(5) Cadent may require such modifications to be made to the plan as may be reasonably necessary for the purpose of securing its apparatus against interference or risk of damage or for the purpose of providing or securing proper and convenient means of access to any apparatus.

(6) Specified works must only be executed in accordance with—

- (a) the plan submitted under sub-paragraph (1) (and ground monitoring scheme if required), as approved or as amended from time to time by agreement between the undertaker and Cadent; and
- (b) all conditions imposed under sub-paragraph (4)(a), and Cadent will be entitled to watch and inspect the execution of those works.

(7) Where Cadent requires any protective works to be carried out by itself or by the undertaker (whether of a temporary or permanent nature) such protective works, inclusive of any measures or schemes required and approved as part of the plan approved pursuant to this paragraph, must be carried out to Cadent's satisfaction prior to the commencement of any specified works (or any relevant part thereof) for which protective works are required prior to commencement.

(8) If Cadent, in consequence of the works proposed by the undertaker, reasonably requires the removal of any apparatus and gives written notice to the undertaker of that requirement, paragraphs 54 to 56 and 59 to 61 apply as if the removal of the apparatus had been required by the undertaker under paragraph 60(2).

(9) Nothing in this paragraph precludes the undertaker from submitting at any time or from time to time, but in no case less than 56 days before commencing the execution of the specified works, a new plan (and ground monitoring scheme if required), instead of the plan previously submitted, and having done so the provisions of this paragraph will apply to and in respect of the new plan (and ground monitoring scheme if required).

(10) As soon as reasonably practicable after any ground subsidence event attributable to the authorised development (including such an event attributable to its maintenance)—

- (a) the undertaker must implement an appropriate ground mitigation scheme; and
- (b) Cadent retains the right to carry out any further necessary protective works for the safeguarding of its apparatus and can recover any such costs in line with paragraph 63.

(11) The undertaker is not required to comply with sub-paragraph (1) where it needs to carry out emergency works but in that case it must give to Cadent notice as soon as is reasonably practicable and a plan of those works and must comply with the conditions imposed under sub-paragraph (4)(a) insofar as is reasonably practicable in the circumstances.

(12) In this paragraph, "emergency works" means works whose execution at the time when they are executed is required in order to put an end to, or to prevent the occurrence of, circumstances then existing or imminent (or which the person responsible for the works believes on reasonable grounds to be existing or imminent) which are likely to cause danger to persons or property.

Expenses

63.—(1) Subject to the following provisions of this paragraph, the undertaker must pay to Cadent on demand, all charges, costs and expenses reasonably anticipated or reasonably incurred by Cadent in, or in connection with, the inspection, removal, relaying or replacing, alteration or protection of any apparatus or the construction of any new or alternative apparatus which may be required in consequence of the execution of any authorised development including without limitation—

- (a) any costs reasonably incurred by or compensation properly paid by Cadent in connection with the acquisition of rights or the exercise of statutory powers for such apparatus including without limitation all costs (including professional fees) incurred by Cadent as a consequence of Cadent—
 - (i) using its own compulsory purchase powers to acquire any necessary rights under paragraph 60(3) if it elects to do so; or
 - (ii) exercising any compulsory purchase powers under this Order transferred to or benefitting Cadent;
- (b) in connection with the cost of the carrying out of any diversion work or the provision of any alternative apparatus;
- (c) the cutting off of any apparatus from any other apparatus or the making safe of redundant apparatus;
- (d) the approval of plans;
- (e) the carrying out of protective works, plus a capitalised sum to cover the cost of maintaining and renewing permanent protective works;
- (f) the survey of any land, apparatus or works, the inspection and monitoring of works or the installation or removal of any temporary works reasonably necessary in consequence of the execution of any such works referred to in this Part of this Schedule;
- (g) any watching brief pursuant to sub-paragraph 62(6).

(2) There will be deducted from any sum payable under sub-paragraph (1) the value of any apparatus removed under the provisions of this Part of this Schedule and which is not re-used as part of the alternative apparatus, that value being calculated after removal.

(3) If in accordance with the provisions of this Part of this Schedule—

- (a) apparatus of better type, of greater capacity or of greater dimensions is placed in substitution for existing apparatus of worse type, of smaller capacity or of smaller dimensions; or
- (b) apparatus (whether existing apparatus or apparatus substituted for existing apparatus) is placed at a depth greater than the depth at which the existing apparatus was situated,

and the placing of apparatus of that type or capacity or of those dimensions or the placing of apparatus at that depth, as the case may be, is not agreed by the undertaker or, in default of agreement, is not determined by arbitration in accordance with paragraph 68 (arbitration) to be necessary, then, if such placing involves cost in the construction of works under this Part of this Schedule exceeding that which would have been involved if the apparatus placed had been of the existing type, capacity or dimensions, or at the existing depth, as the case may be, the amount which apart from this sub-paragraph would be payable to Cadent by virtue of sub-paragraph (1) will be reduced by the amount of that excess save to the extent that it is not possible in the circumstances (or it would be unlawful due to a statutory or regulatory change) to obtain the existing type of apparatus at the same capacity and dimensions or place at the existing depth in which case full costs will be borne by the undertaker.

(4) For the purposes of sub-paragraph (3)—

- (a) an extension of apparatus to a length greater than the length of existing apparatus will not be treated as a placing of apparatus of greater dimensions than those of the existing apparatus; and
- (b) where the provision of a joint in a pipe or cable is agreed, or is determined to be necessary, the consequential provision of a jointing chamber or of a manhole will be treated as if it also had been agreed or had been so determined.

(5) An amount which apart from this sub-paragraph would be payable to Cadent in respect of works by virtue of sub-paragraph (1) will, if the works include the placing of apparatus provided in substitution for apparatus placed more than 7 years and 6 months earlier so as to confer on Cadent any financial benefit by deferment of the time for renewal of the apparatus in the ordinary course, be reduced by the amount which represents that benefit.

Indemnity

64.—(1) Subject to sub-paragraphs (2) and (3), if by reason or in consequence of the construction of any such works authorised by this Part of this Schedule (including without limitation relocation, diversion, decommissioning, construction and maintenance of apparatus or alternative apparatus) or in consequence of the construction, use, maintenance or failure of any of the authorised development (including works carried out under article 21 (protective work to buildings)) by or on behalf of the undertaker or in consequence of any act or default of the undertaker (or any person employed or authorised by the undertaker) in the course of carrying out such works, including without limitation works carried out by the undertaker under this Part of this Schedule or any subsidence resulting from any of these works, any damage is caused to any apparatus or alternative apparatus (other than apparatus the repair of which is not reasonably necessary in view of its intended removal for the purposes of the authorised development) or property of Cadent, or there is any interruption in any service provided, or in the supply of any goods, by Cadent, or Cadent becomes liable to pay any amount to any third party, the undertaker will—

- (a) bear and pay on demand accompanied by an invoice or claim from Cadent, the cost reasonably incurred by Cadent in making good such damage or restoring the supply; and
- (b) indemnify Cadent for any other expenses, loss, demands, proceedings, damages, claims, penalty, compensation or costs properly incurred by, paid by or recovered from Cadent, by reason or in consequence of any such damage or interruption or Cadent becoming liable to any third party as aforesaid other than arising from any default of Cadent.

(2) The fact that any act or thing may have been done by Cadent on behalf of the undertaker or in accordance with a plan approved by Cadent or in accordance with any requirement of Cadent or under its supervision including under any watching brief will not (unless sub-paragraph (3) applies) excuse the undertaker from liability under the provisions of this sub-paragraph (1) unless Cadent fails to carry out and execute the works properly with due care and attention and in a skilful and workman like manner or in a manner that does not accord with the approved plan.

(3) Nothing in sub-paragraph (1) imposes any liability on the undertaker in respect of—

- (a) any damage or interruption to the extent that it is attributable to the neglect or default of Cadent, its officers, servants, contractors or agents;
- (b) any part of the authorised development carried out by Cadent in the exercise of any functions conferred by this Order pursuant to a grant or transfer under article 9 (consent to transfer benefit of the Order);

- (c) any indirect or consequential loss of any third party (including but not limited to loss of use, revenue, profit, contract, production, increased cost of working or business interruption) arising from any such damage or interruption, which is not reasonably foreseeable at the commencement of the relevant works referred to in sub-paragraph (1).

(4) Cadent must give the undertaker reasonable notice of any such third party claim or demand and no settlement, admission of liability or compromise must, unless payment is required in connection with a statutory compensation scheme, be made without first consulting the undertaker and considering their representations.

Enactments and agreements

65. Except where this Part of this Schedule provides otherwise, nothing in this Part of this Schedule affects the provisions of any enactment or agreement regulating the relations between the undertaker and Cadent in respect of any apparatus laid or erected in land belonging to the undertaker on the date on which this Order is made.

Co-operation

66.—(1) Where in consequence of the proposed construction of any part of the authorised development, the undertaker or Cadent requires the removal of apparatus under paragraph 60(2) or Cadent makes requirements for the protection or alteration of apparatus under paragraph 62, the undertaker must use its best endeavours to co-ordinate the execution of the works in the interests of safety and the efficient and economic execution of the authorised development and taking into account the need to ensure the safe and efficient operation of Cadent’s undertaking and Cadent must use its best endeavours to co-operate with the undertaker for that purpose.

(2) For the avoidance of doubt whenever Cadent’s consent, agreement or approval is required in relation to plans, documents or other information submitted by Cadent or the taking of action by Cadent, it must not be unreasonably withheld or delayed.

Access

67. If in consequence of any agreement reached in accordance with paragraph 59(1) or the powers conferred by this Order the access to any apparatus is materially obstructed, the undertaker must provide such alternative rights and means of access to such apparatus as will enable Cadent to maintain or use the apparatus no less effectively than was possible before such obstruction.

Arbitration

68. Save for differences or disputes arising under sub-paragraphs 60(2) and 60(4) any difference or dispute arising between the undertaker and Cadent under this Part of this Schedule must, unless otherwise agreed in writing between the undertaker and Cadent, be determined by arbitration in accordance with article 54 (arbitration).

Notices

69. Notwithstanding article 47 (service of notices) any plans submitted to Cadent by the undertaker pursuant to sub-paragraph 62(1) must be sent via email to Cadent Gas Limited Plant Protection at plantprotection@cadentgas.com as well as via post to Plant Protection, Cadent Gas Limited, Brick Kiln Street, Hinckley, Leicestershire, LE10 0NA, or such other address as Cadent may from time to time appoint instead for that purpose and notify to the undertaker in writing.

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