A66 Northern Trans-Pennine Project

TR010062

3.9 Legislation and Policy Compliance Statement: Update to Appendix A

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A66 Northern Trans-Pennine Project Development Consent Order 202x

3.9 LEGISLATION AND POLICY COMPLIANCE STATEMENT APPENDIX A ONLY

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1 APPENDICES

APPENDIX A: NNNPS Policy Conformity Table

A NNNPS conformity table

1.1.1 The table below sets out the requirements of the NNNPS and how the Project conforms with these requirements. Each paragraph of the NNNPS has been reviewed, with those of relevance to the Project outlined and assessed for compliance within this table. Where paragraphs are not considered to be relevant to the Project, they have been excluded from this table.

~~1.1.1~~1.1.2 This version of the table (Revision 2) provides an update of the table that was submitted as Appendix A to the Legislation and Policy Compliance Statement [APP-242] that was submitted with the DCO Application. It refers, as additional tracked changes in the third column of the table concerned with compliance with the NNNPS, to submissions made throughout the course of the Examination, relevant to the NNNPS paragraph and the compliance statement under consideration, including:

a. Submissions made throughout the Examination, which clarify/explain the Applicant's accordance with policies.
b. Reference to notable stakeholder agreement, by referring to specific parts of the relevant Statements of Common Ground where points are marked as agreed.
c. Reference to relevant design changes, where these have been accepted into the Examination through the ExA's Procedural Decision of the 18th April 2023 [PD-014] where the change is relevant to the policy requirement.
d. Reference to the latest Examination library document reference, where available, for DCO Application Documents that were referred to in the first version of Appendix A (including those that have been subseqeuently updated) and new documents now referred to that have been submitted during the course of the Examination. Please note that the local authority, Environment Agency (EA), Natural England (NE) and the Gypsy and Traveller Community SoCGs are submitted as signed versions at DL9 with this updated compliance table and therefore the library references were not available for these final version of the SoCGs.

~~1.1.2~~1.1.3 Reference to both the submissions made by the Applicant in its application for the DCO and submissions made throughout the course of the Examination as set out in this Table demonstrate compliance with the NNNPS paragraphs and are therefore considered to be relevant to the application of section 104 of the Planning Act 2008 ('PA 2008').

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
2 The need for development of the national networks and Government's policy		
2.1	The national road and rail networks that connect our cities, regions and international gateways play a significant part in supporting economic growth, as well as existing economic activity and productivity and in facilitating passenger, business and leisure journeys across the country. Well-connected and high-performing networks with sufficient capacity are vital to meet the country's long-term needs and support a prosperous economy.	The Applicant aims to provide a well-connected and high-performing modern standard dual carriageway with sufficient capacity to meet long terms needs and a prosperous economy. In doing this, it improves the vital connection between the North West and North East of England, upgrading the single carriageway lengths on the route to dual carriageway. Despite the strategic importance of the A66, the route between the M6 at Penrith and the A1(M) at Scotch Corner is only intermittently dualled and has six separate lengths of single carriageway. The route also carries local slow moving agricultural and other traffic making short journeys, which can have an impact on other users, especially on the single carriageway lengths. The variable road standards, together with the lack of available diversionary routes when incidents occur, affects road safety, reliability, resilience and attractiveness of the route. If the existing A66 route is not improved, it will constrain national and regional connectivity and may threaten the transformational growth envisaged by the Northern Powerhouse initiative and the achievement of the Government levelling up agenda. The A66 is an important route for freight traffic, with HGVs comprising on average 25% of total vehicles on most lengths of the route between Scotch Corner and Penrith, with select lengths seeing 29% of total vehicle traffic as freight movements. It is also an important route for tourism and connectivity for nearby communities. There are no direct rail alternatives for passenger or freight movements along the corridor. As set out in chapter 11 of the Transport Assessment ('TA') (Document Reference 3.7, REP2-003), the improved linkage which would be provided by the Project benefits communities within the north of England, who, due to the rural nature of the region, often lack access to key local services for example, GP surgeries, primary schools and supermarkets. These people are often required to commute over longer distances to access improved employment opportunities. The increased flow also reflects more tourists benefiting from improved links to areas such as the Lake District and the North Pennines AONB, thereby improving the economies within this area. The forecast journey times along the A66 from the M6 J40 to the A1(M) Scotch Corner without the delivery of the Project will increase by approximately five minutes (9%) if the Project is not delivered. This is because the single carriageway sections are near their capacity throughout the assessment period. With the Project in place, it is anticipated that users will save between 10 and 13 minutes (19-22%) when travelling along the A66 corridor in future years.

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		The MyRiad assessment as set out in the TA (Document Reference 3.7, REP2-003) has shown that the Project has a significant impact on Travel Time Variability ('TTV') and Incident Delay by removing the single carriageway sections. The journey Resilience assessment (Combined Modelling and Appraisal Report Application Document 3.9) has shown that network wide benefits are to be gained by the Project when closures of greater than 6 hours occur on the road network within the area. In summary, the Applicant offers the opportunity to provide a modern, high performing and well-connected route which will support economic growth. The host local authorities in their Local Impact Reports acknowledged the benefits the Project will bring. For example Westmorland and Furness Council (formerly Cumbria County Council and Eden District Council) in their Local Impact Report (REP1-019, REP1-021 and REP1-042) state the following: "…the Councils support the Project and see real opportunities for it to support economic growth and levelling up, specifically in Cumbria. Importantly, the Project will contribute to improved road safety by helping to ensure a consistent standard of road design across the route and by eliminating many hazardous features, such as right turn crossings" (3rd paragraph of the Executive Summary). North Yorkshire Council and Richmondshire Council state in their Local Impact Report (REP1-042) that: "A well designed scheme will improve road safety and journey time reliability, and can help to support future economic growth for the County. For these reasons the Authorities are supportive of the proposed dualling as a matter of principle." (paragraph 1.2). Durham County Council in their Local Impact Report (REP1-021) state: "DCC considered that a suitably designed scheme offers the opportunity to improve connectivity within and outwith the County, improve road safety and journey time reliability, and also can help to support future economic growth. For these reasons DCC is supportive of the proposed dualling as a matter of principle." (paragraph 5.7). Other submissions such as the relevant representations of the local authorities (Cumbria CC RR-123, Durham RR-073, Eden RR-127, North Yorkshire CC and Richmondshire DC RR-123) also acknowledge the economic benefits associated with the Project, which are similar to those set out in the LIRs. The Cumbria Local Economic Partnership at Deadline 8 submitted a letter in support of the Project [AS-055] that acknowledged the economic benefits, including:

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		"The A66 NTP scheme alongside addressing important safety issues will also bring considerable economic benefits by easing access to both markets and people thereby supporting Cumbria's ambitious growth proposals."
2.2	There is a critical need to improve the national networks to address road congestion and crowding on the railways to provide safe, expeditious and resilient networks that better support social and economic activity; and to provide a transport network that is capable of stimulating and supporting economic growth. Improvements may also be required to address the impact of the national networks on quality of life and environmental factors.	The Project will help to address road congestion and provide a network that will stimulate and support economic growth in the area. The Project would create appropriate capacity to cope with peak demand and growth on the SRN, and provide a free flowing, safe, reliable and resilient network for the future. The TA (Document Reference 3.7, REP2-003) considers user experience of the A66 at section 6.3 of the TA and Road Safety at section 8 of the TA. Whilst the A66 is not a highly congested route, journey times increase in peak periods, and this is exacerbated by changing standards along the route from dual to single carriageway and vice versa. As presented in the compliance section of NNNPS paragraph 2.1, with the Project in place, it is anticipated that users will save between 10 and 13 minutes (19-22%) when travelling along the A66 corridor in future years. The A66 has a higher-than-average number of accidents in some lengths of the route, with a number of accident cluster sites. A number of these sites are either located in single carriageway lengths or in dual lengths adjacent to single carriageway lengths. Varying standards along the route with a mixture of single and dual carriageway lengths leads to difficulties with overtaking, poor forward visibility, and difficulties at junctions as a result of short merges and diverges and right turning traffic off and on to the A66. The new dual carriageway and junctions on the Project will be designed to modern safety standards and will provide for safer journeys for all road users. The improved route will also be more resilient and less susceptible to disruption due to the additional lanes, recovering faster from incidents. In reference to the Project's economic benefits, the capacity of the A66 will be increased, relieving pressure on the both the current and anticipated traffic flows. The improved journey times delivered by the Project will stimulate the local economy as people travel to employment centres and to community, hospitality and retail facilities. Faster journeys lead to less wasted time idling and waiting in congestion to clear, freeing time for more productive activities that produce economic value, or leisure activities, both of which

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		have a higher value to individuals than traffic delays. All individuals in the economy place a value on their own leisure or labour time, a value that is partly lost on congested highways. For individuals that are seeking employment, the improvements may alter their preference of their travel-to-work radius and provide access to a wider range of employment opportunities. Likewise, businesses that are dependent on the A66 for east-west connectivity will benefit from direct cost reductions, an improved environment for maintaining contact with their customers and suppliers, and the ability to access larger markets and different geographical areas. Local journeys will become more reliable, helping to stimulate local economic activity. As transport becomes easier and journey times quicker and more reliable, the settlements surrounding and using the A66 will become more attractive to inward investment from the private sector. At a regional scale, businesses will benefit from the improved accessibility of key employment areas across Cumbria, Tees Valley and Tyne and Wear. The Project will offer economic benefits, modelled and monetised in the economic appraisal in the Combined Modelling and Appraisal Report (Document Reference 3.8, APP-237), that would contribute to economic growth include journey time reliability benefits and wider economic impacts ('WEI'). The value of these benefits over a 60-year appraisal period sum to £124.7m and £61.5m, respectively. Further information on the economic benefits of the Project can be found in chapter 5 of the CftP (Document Reference 2.2, APP-008). The Project would result in an overall reduction in disturbance from traffic noise and nearby communities affected by rat running and congestion; as well as improving connectivity between communities across the route corridor. These improvements would improve quality of life within those communities. These benefits are described in further detail in chapter 6 of the CftP (Document Reference 2.2, APP-008). These benefits are considered to outweigh the disbenefits of the Project. National Highways recognises the environmental and social importance of completing the construction of, and operating, the Project in an environmentally sustainable and responsible manner, ensuring a high level of environmental performance. The Project includes a range of design measures that have been developed to avoid, reduce or offset likely significant adverse environmental effects. In summary, the Project addresses road congestion and will help to support social and economic activity.

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2.6	There is also a need for development on the national networks to support national and local economic growth and regeneration, particularly in the most disadvantaged areas. Improved and new transport links can facilitate economic growth by bringing businesses closer to their workers, their markets and each other. This can help rebalance the economy.	*Note: Any monetised values are in 2010 prices. Monetary values are summarised in section 5.3 of the CftP (Application Document 2.2).* The Project will offer the opportunity to improve transport links for businesses, markets and their workers along the entirety of the A66 route and support national and local economic growth and regeneration. The economic appraisal (contained within the Combined Modelling and Appraisal Report ('comMA') [Document Reference 3.8, APP-237]) highlights that economic benefits will accrue to business users and the Project is forecast to achieve total transport economic efficiency benefits of £477.6m. They are made up of changes in travel time, user charges (for example, tolls) and changes in vehicle operating costs (that is, for private transport). Business user benefits, as reported by Transport Analysis Guidance ('TAG') unit A2.1, are benefits that have a direct impact on Gross Domestic Product ('GDP') through improving productivity, and therefore have a direct positive impact on economic growth and contribute to levelling up in line with the UK Government's ambitions. Similarly, the Project will offer other economic benefits, modelled and monetised in the economic appraisal, that would contribute to economic growth include journey time reliability benefits and wider economic impacts ('WEI'). The value of these benefits over a 60-year appraisal period sum to £124.7m and £61.5m, respectively. The former reflects the high levels of TTV that is currently experienced on the A66 route infrastructure, and the latter is a largely a reflection of increased business output through travel efficiency and reliability cost savings. It is evident from the economic analysis that the Project will facilitate and support economic growth with benefits that directly influence GDP. A number of issues were raised during the course of the Examination which related to traffic and transport matters, as summarised at paragraph 6.2.10 of the Applicant's Closing Submissions [Document Reference 7.45, REP8-074]. These issues related to de-trunkng arrangements, potential congestion issues in Penrith, traffic impact on "The Sills" within Barnard Castle. Infrastructure provision for freight and the approach to diversions. These issues were addressed robustely by the Applicant in sumbissions during the course of the Examination (as set out at paragraph 6.2.10) of the Applicant's Closing Submissions and for some agreement has been reached between the Applicant and the Couincils as set out in the most recent version of the Statement of Common Ground with the relevant Council, for example: • Detrunking - the parties agreed to work towards a timescale for completion of the detrunking agreement and are content that the de-trunked areas are contained within

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		the DCO boundary as submitted (agreed at 3-1-22 of the table of agreed issues in the Westmoreland and Furness Council SoCG [Document Reference 4.5, REP8-025] • Approach to Diversions and Construction impact - Agreed subject to continued dialogue with the DIPS post DCO approval and the establishment of Construction Traffic Management Forums [agreed at 3-1-23 of the table of agreed issues in the Westmoreland and Furness Council SoCG [Document Reference 4.5, REP8-025] None of these issues diminish or materially change the positive impact of the Project, as modelled and presented in the Transport Assessment [Document Reference 3.7, REP2-003].
2.7	In some cases, there may be a need for development to improve resilience on the networks to adapt to climate change and extreme weather events rather than just tackling a congestion problem.	The Applicant has incorporated resilience measures to adapt to climate change and extreme weather events. Section 7.8 of Chapter 7 (Climate) of the ES (Application Document 3.2, APP-050) considers the impacts of climate change and demonstrates how these are reflected in the Project's design. A series of design standards have been incorporated into the design principles of the Project. Allowances for future climate change have been considered to improve the Project's resilience to extreme weather events. The development will improve resilience on the road network to adapt to climate change. The Project's drainage design, presented in Appendix 14.2 of the Flood Risk Assessment and Outline Drainage Strategy (Document Reference 3.4, APP-221) was developed based on rainfall climate changes that have since been superseded. Sensitivity testing using the latest rainfall climate change allowances has been undertaken for the schemes in Cumbria and reported in the Flood Risk Assessment (Sections 14.2.4, 14.2.5 and 14.2.7, Appendix 14.2, Document Reference 3.4, APP-221), it did not result in any changes to the outline drainage strategy or flood risk assessment. The Applicant has shared the sensitivity testing results for the schemes in Durham and North Yorkshire with the Environment Agency on 2 February 2023 as part of the on-going engagement between the parties. This matter is agreed with the Environment Agency, as is set out in the SoCG, submitted at Deadline 9 of the Examination (see 3-2.6 Updated Rainfall Allowances). Item D-RDWE-02 of the Environmental Management Plan Rev 5 (submitted at Deadline 8 of the Examination) includes the following requirement for the development of the detailed design "*Where ponds are designed for highway run-off attenuation (as retention ponds), they must have sufficient capacity to retain run-off from all events with an annual exceedance probability of greater than 1%, plus allowance for climate change in line with DMRB CG 501 and Environment Agency guidance.*"

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2.9	Broader environment, safety and accessibility goals will also generate requirements for development. In particular, development will be needed to address safety problems, enhance the environment or enhance accessibility for non-motorised users. In their current state, without development, the national networks will act as a constraint to sustainable economic growth, quality of life and wider environmental objectives.	The Project will address existing safety problems, enhance the environment and enhance accessibility for non-motorised users. As indicated in the CftP [Document Reference 2.2, APP-008], the Applicant sets out the following objectives relating to safety and enhancement of the environment for NMU users: • **Transport** – Improve road safety, during construction, operation and maintenance for all, including road users, Non-Motorised Users ('NMUs'), road workers, local businesses and local residents. • **Community -** Reduce the impact of the route on severance for local communities • **Environment** – Minimise adverse impacts on the environment and where possible optimise environmental improvement opportunities. Design proposals for the infrastructure features aimed at improving facilities for Walking, Cycling and Horse Riding ('WCH') users are set out within the Walking, Cycling and Horse Riding Proposals report [Document Reference 2.4, APP-010]. Where public rights of way ('PRoWs') are severed by or converge at the upgraded A66 carriageway, then they have been gathered and redirected to the nearest grade-separated crossing facility in order to provide a safe place to cross the dual carriageway. The nearest crossing may be a new grade-separated junction, an accommodation underpass or overbridge, or a designated WCH underpass or bridge. All schemes forming part of the Project have some level of betterment compared with the provision on the existing single carriageway sections. For most schemes, this includes a parallel shared multi-user route segregated from the dual carriageway. This parallel provision is in the form of either a new path adjacent to the dualling or has been provided along the verge of the old de-trunked A66, where it remains. Based upon the above, the safety problems, environmental problems and accessibility issues for existing WCH users will be improved as a result of the Project through the provision of dedicated WCH infrastructure provision. In turn, and without these design proposals, the Project would not act as a constraint to economic growth, quality of life or impact wider environmental objectives.
2.10	The Government has therefore concluded that at a strategic level there is a compelling need for development of the national networks – both as individual networks and as an integrated system. The Examining Authority and the Secretary of	This Project facilitates the development of the national network and the need for the proposed development has been assessed at a strategic level in advance of preparing this DCO application in line with the PA 2008.

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	State should therefore start their assessment of applications for infrastructure covered by this NPS on that basis.	By way of background, the need for improvements to the A66 corridor was identified in the NTPRSS announced as part of RIS1 in December 2014. The study was one of six national strategic studies. Funding for the A66 corridor improvements was committed to in RIS2 in March 2020. Full details of the Project's history are set out at chapter 3 of the Project Development Overview Report ('PDOR') [Document Reference 4.1, APP-245]. Please see update to paragraph 2.1
2.13	The Strategic Road Network provides critical links between cities, joins up communities, connects our major ports, airports and rail terminals. It provides a vital role in people's journeys, and drives prosperity by supporting new and existing development, encouraging trade and attracting investment. A well-functioning Strategic Road Network is critical in enabling safe and reliable journeys and the movement of goods in support of the national and regional economies.	*Note: Any monetised values are in 2010 prices. Monetary values are summarised in section 5.3 of the CftP (Application Document 2.2).* The A66 forms part of National Highways' existing trunk road network. National Highways is the strategic highways company charged with operating, maintaining and improving England's motorways and major A-roads (per s.1 IA 2015). The Project will allow the A66 to function efficiently and enable safe and reliable journeys. As set out in chapter 5 of the CftP (Economic Case Overview), over a 60-year appraisal period the Project is forecast to achieve significant accident savings with a value of over £29.6m. There is also projected to be £272.2m of journey time reliability benefits that will benefit business users (including the movement of goods in support of national and regional economies) and commuters (a direct social benefit). In terms of journey time reliability, 46% of the benefit is amongst business users and the remaining 54% amongst commuter and other users. As such, the Project will contribute towards a safe and reliable SRN which will in turn support national and regional economies.
2.16	Traffic congestion constrains the economy and impacts negatively on quality of life by: • Constraining existing economic activity as well as economic growth, by increasing costs to businesses, damaging their competitiveness and making it harder for them to access export markets. Businesses regularly consider access to good roads and other transport connections as key	*Note: Any monetised values are in 2010 prices. Monetary values are summarised in section 5.3 of the CftP (Application Document 2.2).* The A66, in its current state, repeatedly widens and narrows, and the fact that some lengths of the road do not match modern standards can cause significant congestion and delay due to lack of overtaking opportunities and slow-moving traffic, in part due to a high proportion of HGVs but also the frequent use of the route by agricultural vehicles. The economic appraisal set out in the CftP [Document Reference 2.2, APP-008] of the Project highlights that there will be significant reliability benefits from reduced TTV during normal operating conditions (daily congestion). Over the 60-year appraisal period the Project is

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	criteria in making decisions about where to locate. • Leading to a marked deterioration in the experience of road users. For some, particularly those with time pressured journeys, congestion can cause frustration and stress, as well as inconvenience, reducing quality of life. • Constraining job opportunities as workers have more difficulty accessing labour markets. • Causing more environmental problems, with more emissions per vehicle and greater problems of blight and intrusion for people nearby. This is especially true where traffic is routed through small communities or sensitive environmental areas.	expected to deliver over £150m of TTV benefits (daily congestion and incidents). The total journey time reliability benefits, over the same appraisal period and including incident delays (on the A66 route and diversion routes) has been estimated to be £272.2m The Project is also expected to facilitate labour supply change (whereby better transport access releases inactive workers into the labour market and provides tax revenue). Whilst these benefits are relatively small, they are positive. The A66 is an important link to local and regional services, employment and education opportunities for communities and towns along the route, as well as providing a commuter link to the many towns and villages. This is particularly important given that there is very little public transport provision along the route, with no comparable rail route and very limited bus service provision. The project creates a more accessible and inclusive transport network along the A66 corridor and therefore offers a range of opportunities and choices for people to connect with jobs, services and friends and family. The improved linkage which would be provided by the project benefits communities within the north of England, who, due to the rural nature of the region, often lack access to key local services for example, GP surgeries, primary schools and supermarkets. These people are often required to commute over longer distances to access improved employment opportunities. The increased flow (as a result of the average additional growth expected as a result of more reliable journeys) also reflects the opportunity for more tourists to benefit from improved links to areas such as the Lake District and the North Pennines Area of Outstanding Natural Beauty (AONB), thereby improving the economies within the Project area. The Applicant has considered the amenity of local residents in the construction and operation of the Project, and this has been assessed through the relevant chapters of the ES (Application Document 3.2-3.4) including air quality, noise and visual impacts. The DfT National Trip End Model ('NTEM') provides growth figures for trip origin and destination and the forecasts consider population, employment, housing, car ownership and trip rates. The traffic forecasts and data for predicting future demand have informed the design of the Project and are key inputs for the economic appraisal of the Project.
2.17	The national road network is already under significant pressure. It is estimated that around 16% of all travel time in 2010 was spent delayed in traffic, and that congestion has significant economic costs: in 2010 the direct costs of congestion on the Strategic Road Network in England were estimated at £1.9 billion per annum.	
2.18	The pressure on the road network is forecast to increase with economic growth, substantial increases in population and a fall in the cost of car travel from fuel efficiency improvements. Under the Department's 2014 estimates, it is forecast that a quarter of travel time will be spent	

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	delayed in traffic by 2040, with direct costs rising to £9.8 billion per annum by 2040 on the Strategic Road Network in England, without any intervention. Under our low and high demand scenarios, the proportion of travel time spent delayed in traffic could range between 12.1% and 21.8% on the Strategic Road Network. When considering all the roads within England, our central estimates would amount to: a. A 71% increase in the number of hours households spend delayed in traffic each year, from 45 hours is 2010 to 76 hours in 2040. b. A 150% increase in the number of working days lost to congestion each year (from 42 million in 2010 to 106 million in 2040).	The Project will improve traffic congestion constraints along its route and improve access to labour markets and also incorporates measures to take account of forecasted demand and is expected to provide benefits in alleviating pressures on the road network. Please see update to paragraph 2.1 The Applicant's Closing Submissions (paragraph 6.3.30) [Document Reference 7.45, REP8-074)] summarise the response to issues raised on the traffic modelling during the course of the Examination.
2.22	Without improving the road network, including its performance, it will be difficult to support further economic development, employment and housing and this will impede economic growth and reduce people's quality of life. The Government has therefore concluded that at strategic level there is a compelling need for development of the national road network.	The need for the Project has been established through a series of documents (such as RIS2) and further details are set out in section 1.3 of the CftP [Document Reference 2.2, APP-008]. Chapter 4 and chapter 5 of the CftP document demonstrate the Project will provide considerable improvements to the road network. It will provide increased safety; improved connectivity and capacity; improved reliability; and support economic growth. The Project will improve accessibility in the region and therefore supports further economic growth and productivity. Monetised estimates of the Project benefits are significant and positive (see chapter 5 of the CftP), therefore the Project will develop the SRN in line with the Government's requirements and ambitions.
2.25	On the road network different approaches and measures will be appropriate for different places. This reflects differences in local preferences and choices and differing scope for alternatives to road travel. The network must also offer a coherent mode of transport for national journeys	The Project is designed to address congestion issues on the A66 and improve journey reliability. There are limited alternative modes of transport available in the region due to the geographical nature of the area, albeit the A66 does provide routing for existing bus services. The Applicant has considered its impact on existing bus services, as set out in Table 9-14 of the TA [Document Reference 3.7, APP-236], and it is concluded within this report that the Project

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	and must combine to form a single, usable network. In general, the nature of some journeys on the Strategic Road Network means that there will tend to be less scope for the use of alternative transport modes.	does not lead to any negative impacts on the identified bus routes or bus stops set out within this table. The development of individual schemes which form the Project have been evolving and designed to reflect the local context in which they sit whilst ensuring that the Project complies with local plan requirements. Full details in this regard are set out in the Project Design Report [Document Reference 2.3, APP-009].
2.27	In some cases, to meet the need set out in section 2.1 to 2.11, it will not be sufficient to simply expand capacity on the existing network. In those circumstances new road alignments and corresponding links, including alignments which cross a river or estuary, may be needed to support increased capacity and connectivity.	The Project spans across 8 schemes, all of which have been considered within their local context. Extensive design evolution has taken place which has included the consideration of alternative road alignments in a series of different locations. These were consulted upon, and the design of these individual schemes has taken account of responses received during extensive consultation exercises. In some cases, it has been necessary to consider alternative road alignments (such as at Kirkby Thore) in the design development of the Project and the various constraints that exist within each area. Full details of the alternative alignments proposed for each scheme are set out at Chapter 5 of the Project Development Overview Report ('PDOR') [Document Reference 4.1, APP-244] which sets out the process of options identification, selection and development of each scheme at each stage of development. Further reasoning around these alternative alignments can also been found within the Project Design Report [Document Reference 2.3, APP-009]. During the Examination, 'Alternative Route Options' were a subject of Issue Specific Hearing 1 ('**ISH1**') held on 30 November 2022, as reported in the Applicant's Deadline 1 Submission – 7.2 Issue Specific Hearing 1 (ISH1) Post Hearing Submissions (Document Reference 7.2, REP1-006), The Applicant's ISH1 Note presents a detailed analysis of the case presented by the Applicant at ISH1 including with reference to the key Application documents supporting the assessment of options and alternatives. The subject matter of ISH1 predominantly related to three main aspects of route selection. A summary of each of these matters with signposting to relevant submission documents is outlined within the following sections of the Closing Submissions:

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		• 4.2 Scheme 08 (Cross Lanes to Rokeby) • 4.3 Scheme 06 (Appleby to Brough) • 4.4 Scheme 0405 (Temple Sowerby to Appleby)
3 Wider government policy on the national networks		
Environmental and social impacts		
3.2	The Government recognises that for development of the national road and rail networks to be sustainable these should be designed to minimise social and environmental impacts and improve quality of life	The Project has been designed to minimise social and environmental impacts and improve the quality of life to those to use and live nearby the A66. National Highways has set objectives for the Project which include those which are specific to both the community and the environment. The Project responds to these objectives through the following: **Connectivity** – Improving connectivity for people living and working nearby and creating better facilities for cyclists and pedestrians. Reducing congestion and improving the reliability of people's journeys between the M6 at Penrith and the A1(M) Scotch Corner and nationwide. It also improves connectivity between the key employment areas of Cumbria, Tees Valley and Tyne and Wear. **Environmental** – Minimising noise levels for people living and working near the route and reducing the congestion currently occurring in the single carriageway sections. The Project is also being designed to minimise any potential negative impacts on the natural environment and landscapes of the North Pennines and Lake District through project design principles to be implemented as part of the detailed design of the Project. **Community** – Re-connecting communities and providing better links between settlements along the route as well as improving access to services such as healthcare, employment areas and education. Improved or relocated PROW, bridleways, cycleways and accommodation underpasses will ensure better provision for walkers, cyclists and horse riders, and also avoid the need to cross over the A66 The Project's Environmental impacts have been assessed through an ES (Application Documents 3.2-3.4). The Project has been designed to meet the above objectives within minimal social and environmental impacts and aims to improve quality of life. Assessments have

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		been undertaken to understand the level of impact of the existing (baseline) road, the construction phase and the operational phase of the route on relevant receptors. In summary, the Project has sought to and been designed to minimise social and environmental impacts. A number of specific design principles have been identified within over-arching design themes witthing the Applicant's "Project Design Principles" (PDP) document. These themes are: A. Designs that are integrated in context and express character and a sense of place B. Designs to enhance experience for all users and serve the local community C. Designs to restore and enhance habitats and ecological connectivity D. Designs that are climate resilient and resource efficient. The design principles within these themes have been revised to address specific matters raised by the ExA or by interested parties during the course of the Examination. The changes to these design principles are set out within a clean and tracked revisions to the Project Design Principles submitted, at the following deadlines of the Examination: • Deadline 3 PDP (Rev 1) – Clean (REP3-04), Tracked (REP3-05) • Deadline 6 PDP (Rev 3) – Clean (REP6-015), Tracked (REP6-016) • Deadline 8 PDP (Rev 4)- Clean (REP8-061), Tracked (REP8-062) Compliance with the PDP is secured by article 54 of the draft DCO submitted at Deadline 9 of the Examination.
3.3	In delivering new schemes, the Government expects applicants to avoid and mitigate environmental and social impacts in line with the principles set out in the NPPF and the Government's planning guidance. Applicants should also provide evidence that they have considered reasonable opportunities to deliver environmental and social benefits as part of schemes.	The Project avoids and/or mitigates environmental and social impacts in line with the principles of the NPPF and the Government's planning guidance. At the core of the NPPF is a presumption in favour of sustainable development. The principles of the NPPF relevant to each of the topics covered in the ES and local planning policies that need to be considered are set out in this document at chapter 3 and at Appendices C and D below. An Environmental Impact Assessment ('EIA') of the Project has been carried out and is reported in the ES (Application Documents 3.2-3.4). The ES assesses the likely significant environmental impacts of the Project (including those on local communities) and presents mitigation for the

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		likely significant adverse environmental effects arising from the Project. The residual significant environmental effects of the Project (following mitigation which is proposed) are described in section 13.10 of Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). In addition, at chapter 3 of the CftP [Document Reference 2.2, APP-008], a summary of the transport, economic, environmental and social benefits that the Project will deliver has been provided. Chapter 7 of the Case for the Project,(Document Reference 2.2, APP-008) with reference to the findings from the Legislation and Policy Compliance Statement [Document Reference 3.9, APP-242] describes the careful consideration of the balance of the benefits of the Project against its impacts, and concludes that the Project's benefits significantly outweigh its adverse impacts (paragraph 7.6.5). There has been no material change to the findings of the Case for the Project in response to submissions made and issues considered during the Examination. The conclusion of Chapter 7 that the benefits significantly outweigh the adverse impacts, alongside the transport, economic, environmental and social considerations that are set out in the document that inform this conclusion, have not changed.
3.6	Transport will play an important part in meeting the Government's legally binding carbon targets and other environmental targets. As part of this there is a need to shift to greener technologies and fuels, and to promote lower carbon transport choices. Over the next decade, the biggest reduction in emissions from domestic transport is likely to come from efficiency improvements in conventional vehicles, specifically cars and vans, driven primarily by EU targets for new vehicle CO2 performance.	The Applicant takes into account the Government's legally binding carbon targets and other environmental targets. Section 7.8 and Appendix 7.1 of Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4) presents an assessment of the impact of the Project on climate (Greenhouse Gas ('GHG')). In line with *Design Manual for Roads and Bridges LA 114* and the NNNPS, GHG emissions associated with the construction and operation of the Project have been assessed in isolation in the GHG emissions assessment set out in Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4). An assessment of likely significant effect is made by comparing Project emissions with the relevant UK Government carbon budgets (up to the Sixth Carbon Budget (2033-2037), which is the Carbon Budget furthest most in the future available for comparison)). In addition, as per *DMRB LA 114,* GHG emissions associated with the Project have been benchmarked against other road Projects as a comparison of Project performance against other similar Projects. The GHG emissions assessment concludes that the Project will have no likely significant effect, as the *DMRB LA 114* states: "*assessment of Projects on climate shall only report significant*

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		effects where increases in GHG emissions will have a material impact on the ability of Government to meet its carbon reduction targets". In summary, the Applicant has considered carbon targets through its development and operational stages and will have no likely significant effect in relation to GHG emissions.
3.8	The impact of road development on aggregate levels of emissions is likely to be very small. Impacts of road development need to be seen against significant projected reductions in carbon emissions and improvements in air quality as a result of current and future policies to meet the Government's legally binding carbon budgets and the European Union's air quality limit values. For example: Carbon – the annual CO2 impacts from delivering a programme of investment on the Strategic Road Network of the scale envisaged in Investing in Britain's Future amount to well below 0.1% of average annual carbon emissions allowed in the fourth carbon budget. This would be outweighed by additional support for ULEVs also identified as overall policy. Air quality – aggregate air quality impacts from delivering a programme of investment on the Strategic Road Network of the scale envisaged in Investing in Britain's Future are small. Total PM10 and NOX might be expected to increase slightly, but this needs to be seen in the context of Projected reductions in emissions over time. PM10 and NOX are expected to decrease over the next decade or so as a result of tighter vehicle emission standards, then flatten, with further falls over time due to greater levels of electric and other ultra-low emission vehicles.	The Applicant takes into account the Government's carbon budgets and the European Union's air quality limit values. In reference to Carbon, section 7.10 of Chapter 7 (Climate) of the ES presents an assessment of the impact of the Project on climate (GHG). This assessment presents a breakdown of the emissions calculated for the Project, and a comparison against UK Government carbon budgets, to determine the significance of emissions. The construction phase of the Project is planned to start in 2024 with all schemes targeted for completion in 2029 and therefore the opening year is 2029 for the operational phase of the Project. Construction phase GHG emissions have therefore been assessed against the UK's Fourth (2023-2027) and Fifth (2028-2032) and Sixth (2033-2037) Carbon Budgets. The assessment took the total construction emissions and compared this to the total Fourth carbon budget and total Fifth carbon budget as a worst-case assessment where schedule changes might lead to full construction falling within a single budget period. The total estimated construction phase GHG emissions would represent 0.026% of the Fourth Carbon Budget and 0.029% of the Fifth Carbon Budget, respectively. Operational phase emissions have been assessed against the Sixth Carbon Budget (2033-37) (as the Carbon Budget set furthest into the operational phase) by taking an annual operational emissions figure (that is, net emissions for the future modelled year of 2044 plus one sixtieth of estimated maintenance emissions) and comparing it to an annual figure for the Sixth Carbon Budget (that is, one fifth of the Sixth Carbon Budget). Land-use benefits during the operational phase have been excluded from the assessment to provide a worst case assessment. The estimated operational phase GHG emissions would represent 0.019% of the Sixth Carbon Budget. The analysis following *DMRB LA 114* shows that emissions from the Project to be low when compared against the relevant carbon budgets. As set out by *DMRB LA 114* and in line with the NNNPS, the assessment concludes that the Project's GHG emissions, in isolation, will not have

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		a significant effect on climate or a material impact on the ability of the Government to meet its carbon reduction plan targets and Carbon Budgets. The Applicant takes Air Quality impacts into account as set out in section 5 of Chapter 5 (Air Quality) of the ES. There are no significant effects associated with the Project on Air Quality Management Areas ('AQMAs') and there is no risk of affecting the UKs ability to achieve compliance. The assessment has been undertaken following published air quality projections on future emissions and fleets. The significance of the construction phase and operational phase effects are both predicted to be not significant. Therefore, it is predicted the effects on air quality at human and ecological receptors would be not significant. In summary, the Project has been assessed against UK carbon budgets and EU air quality limit values and will not have a material impact / effect on compliance with either. At Deadline 3 of the Examination the Applicant submitted the Outline Carbon Strategy (Document Reference 7.14, REP3-043). The document provides an outline of the principles of the Carbon Strategy that is committed to in the Environmental Management Plan and is intended to demonstrate how National Highways will meet commitment reference MW-CL-01 which sets out measures to minimise GHG emissions through the construction period.
Sustainable transport		
3.16 - 3.17	As part of the Government's commitment to sustainable travel it is investing in developing a high-quality cycling and walking environment to bring about a step change in cycling and walking across the country. There is a direct role for the national road network to play in helping pedestrians and cyclists. The Government expects applicants to use reasonable endeavours to address the needs of cyclists and pedestrians in the design	The Project design makes provision for pedestrians and cyclists. Section 13.9 of Chapter 13 (Population and Human Health) of the ES identifies the existing safety and severance issues for WCH using the existing PRoW and road network and sets out mitigation and enhancements proposed as part of the Project. These include: • Avoidance and prevention: identifying alternatives that avoid the requirement to compulsorily purchase property, land and assets; identifying alternatives that avoid introducing or worsening severance and avoid reducing WCH provision and/or increasing journey times. • Reduction: minimising impacts on property, land and assets by selecting route alignments that avoid land take from the most sensitive receptors/aspects of receptors,

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	of new schemes. The Government also expects applicants to identify opportunities to invest in infrastructure in locations where the national road network severs communities and acts as a barrier to cycling and walking, by correcting historic problems, retrofitting the latest solutions and ensuring that it is easy and safe for cyclists to use junctions.	thereby maintaining viability; altering route alignments to minimise severance to communities and disruption to WCH provision. • Remediation: where it is not possible to avoid or reduce a significant adverse effect, for example community sports pitches must be acquired to facilitate construction, provide equivalent facilities as close to the original location as possible. Measures have been incorporated into the design to develop an east-west active travel connection which utilises the de-trunked lengths of the A66 during operation. The design also seeks to consolidate existing WCH provisions and divert them to crossing points to increase safety and accessibility across the Project. A full review and description of the proposed WCH proposals for each scheme can be found within the Walking, Cycling and Horse-Riding Proposals document [Document Reference 2.4, APP-010]. As such, the Applicant has used reasonable endeavours to address WCH needs in designing the Project and has identified and incorporated walking and pedestrian opportunities as discussed above.
Accessibility		
3.19	The Government is committed to creating a more accessible and inclusive transport network that provides a range of opportunities and choices for people to connect with jobs, services and friends and family.	The Project creates a more accessible and inclusive transport network along the A66 corridor and therefore offers a range of opportunities and choices for people to connect with jobs, services and friends and family. The improved linkage which would be provided by the Project benefits communities within the north of England, who, due to the rural nature of the region, often lack access to key local services for example GP surgeries, primary schools and supermarkets. These people are often required to commute over longer distances to access improved employment opportunities. The increased flow (as a result of the average additional growth expected as a result of more reliable journeys) also reflects the opportunity for more tourists to benefit from improved links to areas such as the Lake District and the North Pennines AONB, thereby improving the economies within this area. As set out at Table 9-14 of the TA [Document Reference 3.7, APP-236], it is concluded that the Project does not lead to any negative impacts on the identified bus routes or bus stop locations within the individual scheme boundary areas.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The Project will improve provision for WCH users, as set out in the discussion of NNNPS paragraphs 3.16/3.17 of this Appendix. The Applicant has valued the input from the local authorities and other organisations such as Cycling UK and the British Horse Society, in relation to the improved provision for WCH users. As set out in the Applicant's submissions during the course of the Examination the Applicant looks forward to woking with them for the detailed design of the WCH proposals.
3.20	The Government's strategy for improving accessibility for disabled people is set out in Transport for Everyone: an action plan to improve accessibility for all. In particular: The Government will continue to work to ensure that the bus and train fleets conform with modern access standards by 2020, and to improve rail station access for passengers with reduced mobility. The private car will continue to play an important role, providing disabled people with independence where other forms of transport are not accessible or available. The Government expects applicants to improve access, wherever possible, on and around the national networks by designing and delivering schemes that take account of the accessibility requirements of all those who use, or are affected by, national networks infrastructure, including disabled users. All reasonable opportunities to deliver improvements in accessibility on and to the existing national road network should also be taken wherever appropriate.	The Transport for Everyone document is out of date and has now been withdrawn. The Project is accompanied by an Equalities Impact Assessment ('EqIA') [Document Reference 3.10, APP-243] which considers the needs of disabled people in compliance with the Applicant's statutory obligations under the Public Sector Equality Duty ('PSED'), as set out in the Equalities Act 2010. This includes taking account of access requirements for disabled users including the use of laybys. During the construction of the Project, the associated closures of laybys in some locations are likely to lead to uncertainty over location due to removal or temporary or permanent relocation. As such, it is proposed that the Traffic Management Plan ('TMP') will incorporate appropriate signage and provision for these facilities. Upgraded layby provision will also be provided during the operation of the Project. The EqIA also considers impacts on temporary changes to walking and public transport routes. The Project is likely to result in temporary impacts on a number of routes used by WCHs potentially resulting in changes to journey times and travel patterns, loss of routes, temporary closures and diversions, and changes to crossing points and safety aspect. The full detail of impacts on routes for WCH's is provided in Chapter 13 (Population and Human Health) of the ES. The majority of the routes are rural routes generally used for recreational walking, and therefore differential or disproportionate effects on equalities groups are likely to be more limited. Annex B6 of the EMP [Document Reference 2.7, APP-034) provides a Public Rights of Way Management Plan. The Plan will detail the proposed diversions and new routes to be put in place before and during construction, which seek to mitigate impacts on the PRoW network. It also sets out a hierarchy of mitigation to help maintain access across the PRoW network during construction, for example using appropriate signage, diversions and/or public liaison where necessary. The preparation and delivery of the detailed Public Rights of Way Management Plan

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		will involve the local community through the appointed Public Liaison Officer (or similar) to ensure the local community needs are met. The construction of the proposed Project is likely to impact on bus routes and services. Any potential impacts will be managed through measures set out in the Construction Traffic Management Plan will (see Annex B14 of the EMP,Document Reference 2.7, APP-034). Temporary relocation of bus stops will be discussed with the Local Planning Authorities and public transport operators before the commencement of the construction phase to ensure that these are suitably relocated in terms of access where necessary. With mitigation in place any disproportionate or differential effects on equalities groups should be limited. Enhancement measures have been incorporated into the design to develop an east-west active travel connection which utilises the de-trunked lengths of the A66 during operation. The design seeks to connect existing WCH provisions and divert them to formal crossing point to increase safety and accessibility across the Project. For example, at Stephen Bank to Carkin Moor, a shared path for horse-riders and pedestrians is proposed alongside the de-trunked A66, connecting into four existing footpaths and four bridleways, which currently either terminate at the A66 or cross it via road verges and at-grade crossings. Proposed safe crossing points at grade-separated junctions and shared underpasses will improve access for walkers and horse riders and reduce the severance caused by the existing A66. Please see update to paragraph 3.19
3.21	Applicants are reminded of their duty to promote equality and to consider the needs of disabled people as part of their normal practice. Applicants are expected to conform with any obligations under the Equalities Act 2010.	The Applicant has met its statutory requirements under the PSED, as set out in the Equalities Act 2010. In addition to accessibility issues (considered in the discussions of NNNPS Paragraph 3.20 of this Appendix above), the EqIA [Document Reference 3.10, APP-243) considers the impact on other groups with protected characteristics. This includes those with a disability. In terms of disability, the population within the study area with 'Long-term health problem or disability' and reporting 'Day-to-day activities limited a lot' is low. At the time of the 2011 census, one community in Penrith had a particularly high percentage of the population reporting their 'Day-to-day activities limited a lot' (LSOA Eden 003B) at 16% compared to the national average of 8%. This higher percentage is most likely linked to the higher-than-average percentage of over 65-year-olds located in this community (as reported above) and the propensity for health problems and disability associated with older age.

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		Benefit claimant for disability living allowance information from November 2018 reveals that within the study area, claims are on average lower than the national average. As above, claims for the same population in Penrith (LSOA Eden 003B) are higher than all the other LSOAs in the study area at 3.22%. The construction and operational impacts for those with a disability are set out in the EqIA (Document Reference 3.10, APP-243). The relevant mitigation measures are also set out within this document. Therefore, in summary, the Applicant has conformed with the obligations under the Equalities Act 2010 and has considered the needs of disabled people as part of its practice. Please see update to paragraph 3.19. There has been continuing engagement and dialogue with representatives of the Gypsy and Traveller (GRT) Community, a group with protected characteristics, during the course of the Examination, and the outcome of the equality related considerations in respect of the GRT community, specifically in relation to the relocation and reprovision of Brough Hill Fair, is summarised in the Closing Subissions at section 4.5 (Document Reference 7.45, REP8-074). The Applicant has also responded to the concerns of Dr Mary Clare Martin in relation to human rights and the EqIA throughout the Examination. The Applicant has provided detailed responses to these concerns throughout the Examination and these can be found in the ISH1 Note [Document Reference 7.2, REP1-006] (page 17), the Response to RRs [PDL-010 to PDL-013] (page 74), the Response to WRs by Affected Persons [Document Reference 7.6, REP2-015] (page 66), the CAH2 Note [Document Reference 7.29, REP5-023] (pages 36-39), the ISH3 Note [Document Reference 7.30, REP5-024] (page 34) and the Response to D5 Submissions [REP6-021] (page 50). The Applicant's responses to the comments of Dr Martin are also summarised and concluded upon within section 7 of Closing Submissions (Document Reference 7.45, REP8-074) The British Horse Society (BHS) also raised issues that equestrians are being marginalised in the scheme with walkers and cyclists being favoured. The BHS in their Deadline 7 submission stated that this was a form of discrimination and the Equality Act 2010 created a Public Sector Equality Duty for authorities to provide equal opportunities for all, which means that an authority needs a cogent reason for excluding equestrians. The Applicant responded to this issue in their Deadline 8 submission Applicant's Response to Deadline 7 Submissions [REP8-075] at REP7-205 (page 52-53) and as confirmed in these submissions:

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		"We have engaged and consulted with the British Horse Society for a number of years on the Project and will continue to do so during the detailed design stage of the Project.
3.22	Severance can be a problem in some locations. Where appropriate applicants should seek to deliver improvements that reduce community severance and improve accessibility.	The Applicant has sought to reduce severance throughout the Project design. Enhancement measures have been incorporated into the design to develop an east-west active travel connection which utilises the de-trunked lengths of the A66 during operation. The design also seeks to connect up existing WCH provisions and divert them to formal crossing points to increase safety and accessibility across the Project. The impact of the Project on severance is assessed in section 13.9 of Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). Once operational, the Project would overall reduce severance, and benefit WCHs. Appendix BX of the EMP (Application Document 2.7) sets out an expanded essay plan for the PRoW Management Plan which sets out the operation mitigation for WCH and other users of rights of way. Please see update to paragraph 3.16-3.17.
4 Assessment principles		
4.3	In considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account: • its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long-term or wider benefits; • its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.	The CftP (Document Reference 2.2, APP-008) sets out the associated transport, social, economic and environmental benefits associated with the Project at Chapter 3. Chapter 15 (Cumulative Effects) of the ES (Application Documents 3.2-3.4) sets out the impact assessment and the assessment of any adverse and cumulative environmental effects caused by the Project. It presents the findings of the combined and cumulative effects assessments, and where required, goes on to identify any design, mitigation and enhancement measures, and any ongoing monitoring requirements. The assessment of cumulative effects confirms that no mitigation above the measures identified and proposed within the ES and stated in the EMP (Application Document 2.7) is necessary. On that basis, there are no adverse cumulative residual significant effects identified and no additional monitoring is required. In summary, there are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14). No mitigation measures further to those set out in the individual environmental factor chapters (Chapter 5 Air Quality to Chapter 14 Road Drainage

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		and the Water Environment) and the Environmental Management Plan ('EMP') (Application Document 2.7) are required. An assessment of the Project's adverse impacts has been weighed against the Project's benefits as set out within chapter 7 of the CftP. Chapter 7 concludes that the public benefits provided by the Project are clear, founded in factual evidence and significantly outweigh any adverse effects. There has been no material change to the findings of the Case for the Project [Document Reference 2.2, APP-008] in response to submissions made and issues considered during the Examination. The conclusion of Chapter 7 of the Case for the Project that benefits significantly outweighing the adverse impacts, and the transport, economic, environmental and social considerations set out in the document that inform this conclusion have also not changed. The Applicant provided a response to written representations by other interested parties, including those made by Dr Boswell (Climate Emergency Policy and Planning) at Appendix 1 of REP2-017. The submission included further explanation on the approach to an assessment of cumulative impact in terms of law, guidance and precedent. The Applicant has given further consideration to these matters in response to Dr Boswell's submission at Deadline 8. This is contained within the Applicant's submission entitled Deadline 9 Submission on Climate Matter. Section 1.4 of the ES Addendum Volume 1 in relation to the Change Application [REP7-167} concluded that there are no potential new or different cumulative or in-combination effects that arise from Applicant's proposed changes.
4.4	In this context, environmental, safety, social and economic benefits and adverse impacts, should be considered at national, regional and local levels. These may be identified in this NPS, or elsewhere.	The environmental, safety, social and economic benefits and adverse impacts have been considered at national, regional and local level. These have been assessed within the CftP (Document Reference 2.2, APP-008), ES (Application Documents 3.2-3.4) and TA (Document Reference 3.7, APP-236).
General principles of assessment: business case		
4.5	Applications for road and rail Projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case	The Project's DCO submission is supported by a business case, which assesses the economic, environmental and social impacts of the proposed development. The Project business case has been developed in line with the Government's requirements set out in the HM Treasury's Green Book, as well as DfT's Business Case guidance and WebTAG

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail Projects. The business case will normally be developed based on the Department's Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. It is expected that NSIP schemes brought forward through the development consent order process by virtue of Section 35 of the Planning Act 2008 (PA 2008), should also meet this requirement.	guidance. This has informed the Economic Case within the Project Outline Business Case (OBC) (see A66 Schemes Business Case in Appendix 6 and A69 Schemes Business Case Appendix 7 of the PDOR (Application Document 4.1). The OBC provides evidence for the dualling of the six remaining single carriageway sections of the A66. It combines the economic and strategic cases for the Project, alongside the financial, management and commercial cases. The Economic Case has been developed in line with the Government's Transport Appraisal Guidance (TAG) and details the monetised and non-monetised assessment of benefits and dis-benefits of the Project. The OBC demonstrates that the there is a strong case for the full dualling of the remaining single carriageway sections of the A66, with the Economic Case addressing a comprehensive range of economic, environmental and social impacts for the Project. It establishes that the Project provides value for money by comparing the consequences of not undertaking the Project with the benefits of completing the Project. The benefits associated with the Project include: a consistent dual carriageway standard for the A66 would provide improved east-west connectivity, improving the reliability of people's journeys between the M6 and the A1(M), providing strategic support to the growth of the Northern Powerhouse, minimising noise levels for people living and working near the route, improving connectivity for local villages, and improving residents' connections to services such as healthcare, workplaces and education. The Economic Case presents an adjusted benefit-cost ratio ('BCR') of 0.92, demonstrating that the Project provides £0.92 of societal benefits for every £1 of public expenditure. The OBC also sets out the Strategic Case which provides the rationale for investing in the Project. It demonstrates the strategic fit of the investment with the national strategic agenda and the aims and objectives of the DfT. It provides evidence of the drivers for change in Cumbria, Yorkshire and the North East, and the key transport, economic and social issues the Project aims to address, both locally and at a national level. The mix of single and dual carriageway lengths of the A66 limit the ability of the route to realise its potential as a strategic route. At lengths of remaining single carriageway, issues of severance and noise adversely impact on local communities along the route. In addition, the existing single carriageway lengths and poor junction layouts mean that safety and journey time reliability for users of the route is poor. During a full closure of the A66, the only alternatives to commuters are via the A69 or M62, which results in significant journey time delays.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The need for improvements to the A66 corridor was identified in the NTPRSS announced as part of the RIS1. The study was one of six national strategic studies. Funding for the A66 corridor improvements was committed to in RIS2 in March 2020. Sections of the A66 have been upgraded from single carriageway to dual in a number of stages since the 1970s, with the most recent dual length, the Temple Sowerby Bypass, opening in 2007. However, more than 18 miles of single carriageway remain, making the route accident-prone and unreliable. The main strategic benefits of the investment into improvements to the A66 corridor is the ability to provide more reliable, safer and efficient strategic and local connectivity in the north of England, supporting economic growth and the Northern Powerhouse commitments and aspirations, as well as strengthening Union connectivity between English regions, Scotland and Northern Ireland. It will also improve the impact of the corridor on local communities and habitats. The Strategic Case is supported by feedback from stakeholders, including members of the public, the freight industry and local businesses, who consider that the current condition of the A66 and the lack of alternatives mean that businesses suffer financial and economic impacts. This is particularly the case for businesses that use the route, who experience frequent contractual delay penalties, excessive fuel consumption (leading to additional environmental disbenefits) and limited productivity of human resources, due to congestion issues on the A66. In summary, the Applicant has fulfilled the requirement for a business case to be provided for the Project in accordance with the specified principles/guidance. A number of issues were raised during the course of the Examination which related to traffic and transport matters, as summarised at paragraph 6.2.10 of the Applicant's Closing Submissions [Document Reference 7.45, REP8-074]. These issues related to de-trunkng arrangements, potential congestion issues in Penrith, traffic impact on "The Sills" within Barnard Castle. Infrastructure provision for freight and the approach to diversions. These issues were addressed robustely by the Applicant in sumbissions during the course of the Examination (as set out at paragraph 6.2.10 of the Closing Submissions) and none of them diminish or materially change the positive impact of the project, as modelled and presented in the Transport Assessment [Document Reference 3.7, REP2-003].

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		For some of these issues agreement has been reached between the Applicant and the Couincils as set out in the most recent version of the Statement of Common Ground with the relevant Council, for example: • Detrunking - the parties agreed to work towards a timescale for completion of the detrunking agreement and are content that the de-trunked areas are contained within the DCO boundary as submitted (agreed at 3-1-22 of the table of agreed issues in the Westmoreland and Furness Council SoCG [REP8-025] • Approach to Diversions and Construction impact - Agreed subject to continued dialogue with the DIPS post DCO approval and the establishment of Construction Traffic Management Forums [agreed at 3-1-23 of the table of agreed issues in the Westmorland and Furness Council SoCG [REP8-025]
Local transport model		
4.6	Applications for road and rail Projects should usually be supported by a local transport model to provide sufficiently accurate detail of the impacts of a Project. The modelling will usually include national level factors around the key drivers of transport demand such as economic growth, demographic change, travel costs and labour market participation, as well as local factors. The Examining Authority and the Secretary of State do not need to be concerned with the national methodology and national assumptions around the key drivers of transport demand. We do encourage an assessment of the benefits and costs of schemes under high and low growth scenarios, in addition to the core case. The modelling should be proportionate to the scale of the scheme and include appropriate sensitivity analysis to consider the impact of uncertainty on Project impacts.	A local transport model has been produced in line with DfT guidelines. Details are provided in chapter 4 of the Combined Modelling and Appraisal Report (Document Reference 3.8, APP-237). The modelling used throughout the Project is based on the Northern Regional Transport Model ('NRTM'). RTMs, including the NRTM, have been developed for several purposes including: • Assessing programme level strategies across the regions. • To provide a starting point for the development of detailed scheme specific models, where availability of networks, volumetric counts and travel demand data can reduce the traffic modelling programme. Traffic analysis of the A66 indicates that 56% of westbound traffic uses the A1(M), 49% of eastbound traffic comes from the M6/A74 (M) with only 20% of all the A66 traffic being forecast to start and end in Cumbria or Yorkshire and the North East. This highlights that traffic is using the A66 as part of a longer route, due to the A66 being one of only two east-west links across the country between the M62 in the south and Scotland in the north (the other being the A69). There are no direct rail alternatives for passenger or freight movements along the A66 corridor and the bus service provision is very limited. This emphasises the reliance on the SRN for local, regional and strategic journeys.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The A66 is an important link to local and regional services, employment and education opportunities for communities and towns along the route, as well as providing a commuter link to the Tees Valley and Cumbrian towns. This is particularly important given that there is very little public transport provision along the route, with no comparable rail route and very limited bus service provision. At Chapter 7 of the Combined Modelling and Appraisal Report, the applicant has completed demand sensitivity tests which were undertaken to assess the impact of low and high traffic growth levels on the benefits. In addition, the chapter includes a core scenario sensitivity test around costs. The Applicant's Closing Submissions (paragraph 6.3.30) [Document Reference 7.45, REP8-074] summarises the response to issues raised on the traffic modelling during the course of the Examination. A more detailed explanation of the traffic modelling and the Applicant's precautionary approach can be found: (i) in response to question CE.1.5 in the Responses to Examining Authority's WQs [Document Reference 7.24, REP4-011] ; (ii) against agenda item 4.0 in the ISH3 Note [Document Reference 7.30, REP5-024] and (iii) within Appendix E to the ISH3 Note.
4.9	The Examining Authority should only recommend, and the Secretary of State should only impose, requirements in relation to a development consent, that are necessary, relevant to planning, relevant to the development to be consented, enforceable, precise, and reasonable in all other respects. Guidance on the use of planning conditions or any successor to it, should be taken into account where requirements are proposed.	The Environmental Management Plan (Application Document 3.2) ("EMP") contains all of the provisions that would normally be contained in an EMP and all of the provisions that would normally be contained in requirements to the DCO. It sets out the parties that are to be consulted, what they are to be consulted on, how they are to be consulted and how National Highways must take into account the feedback and how that feedback and consideration is to be reported. The provisions set out in the EMP will meet the same tests of being necessary, relevant, enforceable, precise and reasonable, as required by this paragraph. The updated position and approach that differs from the standard approach of "requirements" is described and explaned in section 5 of the Closing Submissions [Document Reference 7.45, REP8-074], as follows: "The Applicant has considered carefully the need to adequately and robustly secure mitigation measures to ensure the impacts of the Project are suitably controlled. However, the Applicant is also conscious of the need to streamline project delivery, given the Project is subject to the 'Project Speed' initiative" (paragraph 5.1.1) "For this reason, the Applicant has opted to promote an approach to the securing of mitigation that differs from the standard approach of 'requirements' (akin to planning conditions) being

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		contained in a Schedule to the dDCO. This takes the form of securing, through article 53 of the dDCO, compliance with an EMP mechanism. This works alongside compliance with the Project Design Principles which is secured by article 54 of the dDCO and itself secures design-related required mitigation." (paragraph 5.1.2). The Closing Submissions also explain how this approach is legally robust and enforceable, including by reference to oral submissions made at ISH2 [REP1-009] These submissions are reiterated in the Applicant's response to the Rule 17 letter dated 19 May 2023, submitted at Deadline 9. The Applicant's overarching position on both the EMP and the Project Design Principles is explained in further deails within section 5.2 (EMP) and section 5.3 (Project Design Principles).of the Closing Submissions [Document Reference 7.45, REP8-074]
4.10	Planning obligations should only be sought where they are necessary to make the development acceptable in planning terms, directly related to the proposed development and fairly and reasonably related in scale and kind to the development	The parameters for any necessary section 106 agreements with the relevant host authorities (NYCC, CCC, DCC, RDC and EDC) may be considered where necessary and will be informed by Statements of Common Ground with the aforementioned Councils. Any obligations which are specified within these agreements will be in conformity with the NNNPS and would be considered capable of being material to the SoS's consideration of this DCO application. No development consent obligations are considered to be necessary to make the development acceptable in planning terms.
Environmental Impact Assessment		
4.15	All proposals for Projects that are subject to the European Union's Environmental Impact Assessment Directive and are likely to have significant effects on the environment, must be accompanied by an environmental statement (ES), describing the aspects of the environment likely to be significantly affected by the Project. The Directive specifically requires an environmental impact assessment to identify, describe and assess effects on human beings, fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage,	The Project is accompanied by an ES (Application Documents 3.2-3.4), prepared in conformity with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The ES presents a description of the Project, its likely significant environmental effects, the measures to avoid or reduce such effects and the alternatives considered. Chapter 4 (EIA Methodology) of the ES (Application Documents 3.2-3.4) sets out the approach taken to prepare the EIA. The ES chapters consider the following environmental factors in line with the requirements of DMRB and, the EIA Regulations, and the Scoping Opinion in Volume 3 Appendices (EIA Methodology) of the ES: • Air quality (Chapter 5); • Biodiversity (Chapter 6); • Climate (Chapter 7);

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	and the interaction between them. Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 sets out the information that should be included in the environmental statement including a description of the likely significant effects of the proposed Project on the environment, covering the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the Project, and also the measures envisaged for avoiding or mitigating significant adverse effects. Further guidance can be found in the online planning portal. When examining a proposal, the Examining Authority should ensure that likely significant effects at all stages of the Project have been adequately assessed. Any requests for environmental information not included in the original environmental statement should be proportionate and focus only on significant effects. In this NPS, the terms 'effects', 'impacts' or 'benefits' should conformingly be understood to mean likely significant effects, impacts or benefits.	• Cultural heritage (Chapter 8); • Geology and soils (Chapter 9); • Landscape and visual (Chapter 10); • Material assets and waste (Chapter 11); • Noise and vibration (Chapter 12); • Population and human health (Chapter 13); and • Road drainage and water environment (Chapter 14). The Project's ES therefore meets the requirements of paragraph 4.15 of the NNNPS. There have been no changes as a consequence of matters considered and submissions made during the course of the Examination to the findings of the Environmental Statement as set out in the Chapters of the ES as referenced above, with the exception of those changes that relate to design changes. An ES Addendum [Document Reference 8.3, REP7-167 to REP7-171] detailed whether the 22 design changes accepted by the Examining Authority gave rise to any new or different likely significant effects on the environment when compared to those reported in the Environmental Statement. The ES Addendum mirrored the structure of the Environmental Statement and adopted the same methodology. Clarifications and queries on the Environmental Statement [Document Reference 3.1, APP-043-APP-059] have been considered throughout the course of the Examination and clarifications and supporting information have been provided to Appendices of the ES and other supporting documents, where necessary following discussions with stakeholders. As reported above these did not change the findings and reporting of significance within the ES Chapters. Section 6 of the Closing Submissions [Document Reference 7.45, REP8-074] provides a summary of the key issues raised for environmental topics where matters have been considered and submissions made during the Examination.
4.16	When considering significant cumulative effects, any environmental statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including Projects for which consent has been granted, as well as those already in existence). The Examining Authority may also have other evidence before it, for example from a Transport Business Case,	The ES has considered significant cumulative effects at Chapter 15 (Cumulative Effects) (Application Documents 3.2-3.4) which sets out the how the effects of the Project would combine and interact with the effects of other development. The cumulative effects assessment has been undertaken in accordance with PINS Advice Note 17: Cumulative Effects Assessment (December 2015). In line with *DMRB LA 104 Environmental assessment and monitoring,* in-combination and cumulative effects have been assessed based on the conclusions of individual environmental

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	appraisals of sustainability of relevant NPSs or development plans, on such effects and potential interactions. Any such information may assist the Secretary of State in reaching decisions on proposals and on mitigation measures that may be required.	factor assessments. In-combination effects are set out in the relevant environmental factor topic chapters. There are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14). No mitigation measures further to those set out in the individual environmental factor chapters ((Chapter 5 (Air Quality) to Chapter 14 (Road Drainage and the Water Environment)) and the EMP (Application Document 2.7) are required. Therefore, in conclusion to the above, the Applicant has considered any significant cumulative effects as part of the Project design. The Applicant provided submissions on the cumulative impact appraised within pages 81 to 84 of Appendix 1 the Response to Written Representations by Other Interested Parties [Document Reference 7.8, REP2-017] and in pages 10 to 12 of the Response to D3 and D4 Submissions [Document Reference 7.33, REP5-030]. The response to the issues raised are also summarised in the Closing Submissins [Document Reference 7.45, REP8-074] at paragraphs 6.3.11 – 6.3.19 in relation to carbon emissions. Section 1.4 of the ES Addendum Volume 1 in relation to the Change Application [REP7-167} concluded that there are no potential new or different cumulative or in-combination effects that arise from Applicant's proposed changes.
4.17	The Examining Authority should consider how significant cumulative effects and the interrelationship between effects might as a whole affect the environment, even though they may be acceptable when considered on an individual basis with mitigation measures in place.	
4.18	In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.	Reasonable worst case development extents and activities have been identified for the purposes of assessment within the ES (Application Documents 3.2-3.4). These are set out within Chapter 2 (The Project) of the ES and, where applicable, in the relevant topic chapters of the ES: Chapter 5 (Air Quality), Chapter 6 (Biodiversity), Chapter 7 (Climate), Chapter 8 (Cultural Heritage), Chapter 9 (Geology and Soils), Chapter 10 (Landscape and Visual), Chapter 11 (Materials and Waste), Chapter 12 (Noise and Vibration), Chapter 13 (Population and Human Health) and Chapter 14 (Road Drainage and the Water Environment). These assessments have been guided by the necessary limits of deviations as shown on the Works Plans (Application Document 5.16) and a review of the overall design principles set out in Chapter 2 of the ES relating to: • Highway and junction design • Climate Change Adaptation
4.19	Where some details are still to be finalised, applicants are advised to set out in the environmental statement, to the best of their knowledge, what the maximum extent of the	

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	proposed development may be (for example in terms of site area) and assess the potential adverse effects which the Project could have to ensure that the impacts of the Project as it may be constructed have been properly assessed.	• Drainage strategy and drainage design • Flood risk • Walking, cycling and horse-riding • Lighting • Vehicular restraint barriers • Boundary treatment • Road signs and markings • Technology • The existing A66 road • Embedded mitigation principles This assessment method has been chosen in order to bring forward the DCO application sooner (in line with the Project Speed initiative). Worst case assessments have also been used to offer a level of flexibility for when the Project reaches its detailed design stage where its details will be refined further. Clarifications and queries on the Environmental Statement [Document Reference 3.1, APP-043-APP-059] have been considered throughout the course of the Examination and clarifications and supporting information have been provided to Appendices of the ES and other supporting documents, where necessary following discussions with stakeholders. As reported in response to 4.15 above these updates have not changed the findings and reporting of significance within the ES Chapters. Section 6 of the Closing Submissions [Document Reference 7.45, REP8-074] provides a summary of the key issues raised for environmental topics where matters have been considered and submissions made during the Examination. The ES Addendum [CR1-016 and CR1-017] assesses the potential for the Design Changes (as submitted in the Change Application [CR1-001-CR1-0180]) to introduce new or different likely significant effects upon the environment when compared to the findings of the original Development Consent Order (DCO) Environmental Statement (ES).
4.20	Should the Secretary of State decide to grant development consent for an application where details are still to be finalised, this will need to be reflected in appropriate development consent requirements in the development consent order. If development consent is granted for a proposal and at a later stage the applicant wishes for	The Project details design as far as is possible at this stage. The Environmental Management Plan (Application Document 3.2) (“EMP”) contains all of the provisions that would normally be contained in an EMP and all of the provisions that would normally be contained in requirements to the DCO. It sets out the parties that are to be consulted, what they are to be consulted on, how they are to be consulted and how National

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	technical or commercial reasons to construct it in such a way that it is outside the terms of what has been consented, for example because its extent will be greater than has been provided for in terms of the consent, it will be necessary to apply for a change to be made to the development consent. The application to change the consent may need to be accompanied by environmental information to supplement that which was included in the original environmental statement.	Highways must take into account the feedback and how that feedback and consideration is to be reported. Article 54 of the DCO makes provision for the detailed design of the Project in general conformity with the Project Design Principles, the Works Plans and Engineering section Drawings (Application Documents 5.16, 5.17 and 5.18), subject to any variation agreed in writing by the SoS on the basis that the changes would not give rise to any materially new or materially different environmental effects in comparison with those reported in the ES. As reported in section 1.3 of the Closing Submissions [Document Reference 7.45, REP8-074] the Applicant submitted a change application to the Examining Authority on 24 March 2023 which contained details of 24 proposed changes to the DCO Application for the Project. The opportunity to make changes during the Examination was explained in the Applicant's Cover letter for the Change Application [Document Reference 8.1, CR1-001]. This explains that without early contractor involvement on the Project (which was a key element of the Government's Project Speed Initiative) "…it is highly likely that the potential for many of the Applicant's proposed changes would not have been identified at this early stage in the consenting process, and it would not be possible to deliver the benefits that flow from these proposed changes through the draft DCO that is currently being examined. Consequently, the proposed changes would only have been able to be brought forward through an application, or applications, to make changes to the 'made' DCO, after the grant of development consent should it be granted. This would, of course, cause delays to the delivery of the Project." The details of all proposed changes are provided in the Change Application [Document Reference 8.1, CR1-001-CR1-018], with a high-level summary of each proposed change provided in Table 1 of that document. The Applicant noted that the need for the proposed changes to the Project arose from a variety of factors which included requests from Affected Parties (e.g. including where issues were raised in Relevant Representations); stakeholder feedback (e.g. where, through engagement, the Applicant had sought to resolve issues); the identification of opportunities to further reduce the environmental impacts of the Project and opportunities to reduce the amount of land required for the Project; and the identification of additional safety benefits, building on the assessment work to date. In response, the Examining Authority published its decision on the Change Application on 18 April 2023, accepting 22 of the 24 proposed changes into the Examination of the DCO

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		Application. These are detailed at pages 2-3 of the Examining Authority's Response to Changes. Following this, the Applicant made all necessary updates to its DCO Application documents and submitted the revised documents at Deadline 7 of the Examination.
Habitats Regulations Assessment		
4.22	Prior to granting a Development Consent Order, the Secretary of State must, under the Habitats Regulations, consider whether it is possible that the Project could have a significant effect on the objectives of a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or Projects. Applicants should also refer to paragraphs 5.20 to 5.38 of this national policy statement on biodiversity and geological conservation and to paragraphs 5.3 to 5.15 on air quality. The applicant should seek the advice of Natural England and, where appropriate, for cross-boundary impacts, Natural Resources Wales and Scottish Natural Heritage to ensure that impacts on European sites in Wales and Scotland are adequately considered.	The Applicant has taken into account the Habitats Regulations in the development of the Project. A Habitats Regulations Assessment ('HRA') (Document Reference 3.5, APP-234) has identified the following European sites which have met the screening criteria as set out in section 2.2 and 4.3 of the Habitats Regulations Assessment Screening Stage 1 Assessment (Application Document 3.5): River Eden Special Area of Conservation ('SAC') A Habitats Regulations Assessment ('HRA') (Application Document 3.5) has identified the following European sites which have met the screening criteria as set out in section 2.2 and 4.3 of the Habitats Regulations Assessment Screening Stage 1 Assessment (Application Document 3.5): • River Eden Special Area of Conservation ('SAC') • Helbeck and Swindale Woods SAC • Moor House- Upper Teesdale SAC • North Pennines Moors SAC • North Pennies Moors SPA The report has been prepared to provide the necessary information for the competent authority (the SoS for Transport) to carry out an HRA under Regulation 63 of the Conservation of Habitats and Species Regulations 2017, as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019. Engagement has been ongoing with Natural England, and this is referenced in the Statements of Common Ground between Natural England and National Highways (Application Document 4.5). Following the Stage 1 assessment, the following European sites have been taken forward to Stage 2 (Appropriate Assessment) (discussed in paragraph 4.23 below): • River Eden SAC • North Pennine Moors SAC • North Pennine Moors SPA
4.23	Applicants are required to provide sufficient information with their applications for development consent to enable the Secretary of State to carry out an Appropriate Assessment if required. This information should include details of any measures that are proposed to minimise or avoid any likely significant effects on a European site. The information provided may also assist the Secretary of State in concluding that an appropriate assessment is not required because significant effects on European sites	

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	are sufficiently unlikely that they can be excluded.	Full details of these Stage 1 assessments can be found in chapter 4 of HRA Stage 1 Likely Significant Effects Report (Document Reference 3.5, APP-234). In consideration of the three European sites defined above, an Appropriate Assessment has been completed and assessment set out at sections 1.5, 1.6 and 1.7 of HRA Stage 2 Statement to Inform Appropriate Assessment (Document Reference 3.6, APP-236). The assessment has been completed in order to assess potential adverse effects from a series of different sources, in order to assess whether the Project will adversely affect the integrity of the sites in view of their conservation objectives. The potential for adverse effects for each qualifying European site are as follows: River Eden SAC • Land take/resource requirements/reduction of habitat • Disturbance of mobile species and species fragmentation • Species injury and mortality • Introduction and/or spread of invasive non-native species • Changes in surface and groundwater quality, quantity, and hydrogeology • Changes in hydrology and fluvial geomorphological processes • Changes in air quality North Pennine Moors SAC Changes in air quality during operation (associated with the Affected Road Network (ARN) North Pennine Moors SPA A reduction in suitable habitat (as a result of changes in air quality during operation associated with ARN). The Statement to Inform Appropriate Assessment (Document Reference 3.6, APP-235) includes measures that are proposed to minimise or avoid any likely significant effects on the River Eden SAC, North Pennine Moors SAC and North Pennines Moors SPA. In taking these measures and mitigation into account the assessment concludes that no reasonable scientific doubt remains and in 'the light of the best scientific knowledge in the field', the Project will not adversely affect the integrity of any European Site, alone or in combination with other plans or Projects. The HRA Stage 2 Statement of Information Appropriate Assessment (Document Reference 3.6, APP-235) concludes that the Project will not have a significant adverse effect on any qualifying

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		feature of the River Eden SAC, North Pennine Moors SAC or North Pennine Moors SPA, either alone or in combination with other plans and projects. Nor will it have adverse implications for the River Eden SAC, North Pennine Moors SAC or North Pennine Moors SPA site conservation objectives and will not delay or interrupt progress towards achieving the site objectives. It will not adversely affect the integrity of the River Eden SAC, North Pennine Moors SAC or North Pennine Moors SPA, beyond reasonable scientific doubt. As such, the Applicant has considered whether there could be significant effects on the objectives of the aforementioned European sites and has followed the Habitats Regulations accordingly. As set out at paragaphs 6.5.52-6.5.62 of the Closing Submissions [Document Reference 7.45, REP-074] the Applicant has continued to engage on the HRA with Natural England during the Examination to address various residual outstanding comments. On 18 April 2023, the Examining Authority issued the RIES [PD-013], in which it addressed a number of questions on the HRA to both the Applicant and Natural England. Both parties issued responses to those questions at Deadline 7. Natural England in its responses to the RIES and as part of the SoCG with Natural England have confirmed that they are, with one exception, content with the conclusions of the HRA and how the required mitigation is secured through both the EMP and Project Design Principles. As set out in the Applicant's response to the ExA's Rule 17 letter submitted at Deadline 9 alongside this updated Appendix, the Applicant has continued to engage with Natural England on this point. This has resulted in the issue of a draft Habitats Regulations Assessment Supplementary Note – North Pennine Moors SAC/SPA (the HRA Supplementary Note) to Natural England. A final version of this Note has been submitted into the Examination at this Deadline 9 and provides supporting and clarificatory information in relation to the conclusions of the Applicant's HRA in respect of the North Pennines SAC (specifically those contained in the Applicant's Statement to Inform Appropriate Assessment [APP-235] (the SIAA)). The HRA Supplementary Note in no way alters the conclusions of the Applicant's HRA which, for the reasons set out below, it remains entirely confident in. Despite the positive engagement between the parties, this point remains outstanding at the end of the Examination, pending further clarifications sought by Natural England. Nevertheless, the parties remain committed to continuing to engage positively during the ExA's three month recommendation period with a view to reaching agreement by the end of the ExA's recommendation period.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
4.24	If a proposed national network development makes it impossible to rule out an adverse effect on the integrity of a European site, it is possible to apply for derogation from the Habitats Directive, subject to the proposal meeting three tests. These tests are that no feasible, less-damaging alternatives should exist, that there are imperative reasons of overriding public interest for the proposal going ahead, and that adequate and timely compensation measures will be put in place to ensure the overall coherence of the network of protected sites is maintained.	As concluded in paragraph 4.23 of this appendix above, it is considered that this paragraph of the NNNPS is not applicable to the Project.
4.25	Where a development may negatively affect any priority habitat or species on a site for which they are a protected feature, any Imperative Reasons of Overriding Public Interest (IROPI) case would need to be established solely on one or more of the grounds relating to human health, public safety or beneficial consequences of primary importance to the environment.	The Appropriate Assessment described in NNNPS paragraph 4.23 of this Appendix has demonstrated that the Project would not have adverse effects on priority habitats or species on a site for which they are a protected feature. Therefore, Stage 4 of the HRA process (Assessment of IROPI) does not apply.
Alternatives		
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	The Applicant has complied with the necessary legal and policy requirements set out in the NNNPS on the assessment of alternatives. These are broken down as follows: Chapter 3 (Alternatives) of the ES (Application Documents 3.2-3.4) sets out the main alternatives considered and how the preferred options were determined through consideration of environmental effects. The PDOR report at chapter 5 (Application Document 4.1) also sets out the alternative options considered and how the preferred options for each scheme were determined. A number of the alternative options identified were discounted for the following reasons: unacceptable land take within Scheduled Monuments; direct impacts on Listed Buildings and

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	for the applicant's choice, taking into account the environmental effects. There may also be other specific legal requirements for the consideration 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 (AONB).	Listed Structures; damaging crossings of the River Eden Special Area of Conservation (SAC); loss of irreplaceable ancient woodland; unacceptable extent of direct land take and loss of important features of the North Pennines Area of Outstanding Natural Beauty (AONB), loss of heritage railway, and loss of heritage railway. Avoidance of these impacts was a high priority in the options selection process, and where they were not possible to avoid completely, routes were selected that had the lowest possible impacts. In terms of other specific legal requirements for the consideration of alternatives: Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4) and the HRA (Stages 1 and 2) (Application Document 3.5 and 3.6) demonstrates that the Project takes account of the Habitats Regulations and subsequent Appropriate Assessment (Stage 2) forming part of the regulatory requirements. Appendix 14.1: WFD Compliance Assessment of the ES Appendices (Application Document 3.4) demonstrates that the Project has considered its compliance with the WFD. The Project has the potential to have an adverse effect on 9 surface waterbodies which has the potential to cause a deterioration in the current status of the waterbodies. Additional mitigation has been identified comprising ecological mitigation and WFD mitigation comprising low flow channel creation, bank reprofiling, removal of existing structures, wetland habitat creation/improving floodplain connectivity and buffer strips. The additional mitigation measures identified are considered appropriate to mitigate the identified potential adverse effects. As such, the potential for residual adverse overall effects associated with the risk of preventing the future achievement of status objectives of these surface water bodies is not considered to remain at this stage. Appendix 14.2: Flood Risk Assessment of the ES (Application Document 3.4) details the application of the sequential test for areas of the Order Limits which extend into Flood Zones 2 and 3. The scheme results in an increase in impermeable area being discharged to local watercourses. However, existing flow rates have been calculated, and proposed flow rates restricted to ensure that there is no increased flood risk created by the scheme. Water quality mitigation measures have been incorporated in the proposals. JBA flood modelled areas have shown a negligible increase to flooding extents. These extents are shown north of the existing A66 and should not be of risk to properties or any greater risk to the A66. An allowance for flood mitigation has been allowed for in the order limits for review in detailed design.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The PDOR (Application Document 4.1) at chapter 5 and chapter 6 of the CftP (Document Reference 2.2, APP-008) also references assessments relating to development within the North Pennines AONB at Bowes Bypass and Appleby to Brough. In conclusion, the Applicant has complied with all legal requirements and policy requirements set out within the NNNPS on the assessment of alternatives. During the Examination, 'Alternative Route Options' were a subject of Issue Specific Hearing 1 ('**ISH1**') held on 30 November 2022, as reported in the Applicant's Deadline 1 Submission – 7.2 Issue Specific Hearing 1 (ISH1) Post Hearing Submissions (Document Reference 7.2, REP1-006), The Applicant's ISH1 Note presents a detailed analysis of the case presented by the Applicant at ISH1 including with reference to the key Application documents supporting the assessment of options and alternatives. The subject matter of ISH1 predominantly related to three main aspects of route selection: • Scheme 08 (Cross Lanes to Rokeby) • Scheme 06 (Appleby to Brough) • Scheme 0405 (Temple Sowerby to Appleby A summary of each of these matters with signposting to relevant submission documents is outlined within section 4 of the Closing Submissions [Document Reference 7.45, REP8-074]. In addition, the Closing Submissions set out a summary of the Applicant's consideration of alternative route options more generally and it is concluded that such consideration has been detailed and comprehensive and is in compliance with the policy requirements in the NNNPS as well as with other specific policy areas and all legal requirements.
4.27	All Projects should be subject to an options appraisal. The appraisal should consider viable modal alternatives and may also consider other options (in light of the paragraphs 3.23 to 3.27 of this NPS). Where Projects have been subject to full options appraisal in achieving their status within Road or Rail Investment Strategies or other appropriate policies or investment plans, option testing need not be considered by the examining authority or the decision maker. For	The Project has been subject to an options appraisal. This is referenced at Chapter 3 (Alternatives) of the ES (Application Documents 3.2-3.4) and in the summary of previous route options assessments, Design development process and Design development of schemes at Chapters 3, 4 and 5 of the PDOR (Document Reference 4.1, APP-244). As part of the feasibility work carried out between 2014-2016 (as part of the NTPRSS), it was concluded that there is no viable alternative mode solution (such as rail) to address the challenges the A66 currently experiences. Some of the following options were considered and discounted:

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	national road and rail schemes, proportionate option consideration of alternatives will have been undertaken as part of the investment decision making process. It is not necessary for the Examining Authority and the decision maker to reconsider this process, but they should be satisfied that this assessment has been undertaken.	**Penrith to Temple Sowerby** An underpass was considered at the eastern extent of the scheme, between the Countess Pillar and the B6262 junction. This option was discounted as it would be closer to the River Eden SAC and SSSI and it would encroach into the Settlement 1/3 mile (540m) ENE of Brougham Castle Scheduled Monument (ref. 1007203). An underpass would require digging deeper than an overbridge, therefore with greater risk of damage to archaeology within the SM. The PRA was routed south slightly to avoid the buildings referred to as High Barn. This option was discounted as this would result in the loss of a greater area of agricultural soil and it would go against the wishes of the landowner. During engagement with the landowner, it was established that they preferred to alter the alignment so as to retain more land to the north which would result in the loss of the buildings. **Temple Sowerby to Appleby** The Green Routes would have been closer to the eastern edge of Kirkby Thore village and could therefore be expected to have more adverse noise and visual impact on residents and businesses. The design of the Green Routes also passed very close to the British Gypsum mine workings, and the geotechnical risk was deemed too great to be acceptable. In addition, it also had the potential to adversely impact the Roman camp 350m east of Redlands Bank Scheduled Monument (ref.1007189). This options appraisal has broadly been carried out using the DfT's and National Highways Project Control Framework ('PCF') approach to managing major infrastructure Projects. The Project has been subject to the following stages: Pre-Project phase – PCF Stage 0 Strategy, shaping and prioritisation • *Sub-stage 1 – Identification of the issues* • *Sub-stage 2 – Generating and evaluating a long list of options (to identify a shortlist* • *Sub-stage 3 – Assessment of the shortlist of options* Options phase – PCF Stage 1 Option identification Options phase – PCF Stage 2 Option selection • *Public consultation 2019* • *Preferred Route Announcement May 2020*

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The Project is now at PCF Stage 3 (Preliminary Design). In 2014, the DfT announced its five-year investment programme for making improvements to the SRN across England. The Project is one of more than 100 schemes identified as part of RIS1. Funding for delivery of the Project has been confirmed within the RIS2, which covers the period between 2020 and 2025. As such, it is considered that a proportionate option consideration of alternatives has been undertaken and therefore it is not considered necessary for the Examining Authority to reconsider the process of alternatives that has already been executed. Further, the Project has already been subject to full options appraisal in achieving its status within RIS1 and RIS2 and option testing need not be considered further. Please see update to paragraph 4.26 above.
Criteria for "good design" for national networks infrastructure		
4.28	Applicants should include design as an integral consideration from the outset of a proposal.	Design has been an integral component/consideration of the Project from the outset of the proposal. The Project is supported by a Project Design Report (Document Reference 2.3, APP-009) and Project Design Principles documenrt which sets out a series of design principles intended to be delivered through the detailed design and implementation of the Project. The Project follows a series of design principles which help to align the Project with the criteria set out within National Highway's The Road to Good Design (National Highways, 2018) as well as the NNNPS. These principles are as follows: A – Designs that are integrated in context and express character and a sense of place B – Designs to enhance experience for all users and serve the local community C – Designs to restore and enhance habitats and ecological connectivity D – Designs that are climate resilient and resource efficient E – A collaborative approach to design development.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The Project also has regard to the strategic principles set out in the National Infrastructure Commission's Design Principles for National Infrastructure (National Infrastructure Commission, 2020) around context-driven design, and their four key principles of design for climate, people, place and value. Account is also taken of The Design Council's 2012 publication, A design-led approach to infrastructure (Design Council, 2012), and the National Design Guide. The design principles have been revised to address specific matters raised by the ExA or by interested parties during the course of the Examination. The changes to these design principles are set out within a clean and tracked revisions to the Project Design 44rinciples submitted, at the following deadlines of the Examination: • Deadline 3 PDP (Rev 1) – Clean (REP3-040), Tracked (REP3-041) • Deadline 6 PDP (Rev 3) – Clean (REP6-015), Tracked (REP6-016) • Deadline 7 PDP (Rev 4) – Clean (REP7-104), Tracked (REP7-103) • Deadline 8 PDP (Rev 5)- Clean (REP8-061), Tracked (REP8-062) Section 8 of the Closing Submissions [Document Reference 7.45, REP8-074] is concerned with Good Design and section 5.3 addresses specifically the Project Design Principles and how these are secured through article 54 of the dDCO.
4.29	Visual appearance should be a key factor in considering the design of new infrastructure, as well as functionality, fitness for purpose, sustainability and cost. Applying "good design" to national network Projects should therefore produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible.	'Good design' principles have been applied through the Project to produce sustainable infrastructure which accords with the requirements of the NNNPS. Visual appearance, functionality, fitness for purpose, sustainability and cost were all considered in the design of the Project. These lead on from the series of design principles referenced in paragraph 4.28 of this Appendix above. The Project Design Principles (Document Reference 5.11, REP8-061) also defines a series of route wide Project Design Principles as well as Site-specific design principles for each scheme at chapter 5 (A66 site specific design considerations) of the document. Due to the vast geographical area that the Project sits within, it is ensured that each scheme is sensitive to its own sense of place as it traverses varied landscapes and contexts. These design principles will ensure that visual appearance characteristics will be maintained at the Project's detailed design stage and subsequent construction. Please see update to paragraph 4.28 above

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
4.31	A good design should meet the principal objectives of the scheme by eliminating or substantially mitigating the identified problems by improving operational conditions and simultaneously minimising adverse impacts. It should also mitigate any existing adverse impacts wherever possible, for example, in relation to safety or the environment. A good design will also be one that sustains the improvements to operational efficiency for as many years as is practicable, taking into account capital cost, economics and environmental impacts.	The Project's design has aimed to meet the principal objectives of the Project by either eliminating or substantially mitigating the identified problems through improving the operational conditions of the A66 and at the same time minimising adverse impacts. Reference should also be made to the Project's response to NNNPS paragraphs 4.28 and 4.29 above of this Appendix which sets out the design principles of the Project. Chapter 2 of the CftP (Document Reference 2.2, APP-008) sets out the objectives of the Project which have been developed to address the identified problems on the A66 and take advantage of the opportunities that the new infrastructure would provide. These include in an economic, transport, community and environmental context. As transport becomes easier and journey times quicker and more reliable, the settlements surrounding and using the A66 will become more attractive to inward investment from the private sector. At a regional scale, businesses will benefit from the improved accessibility of key employment areas across Cumbria, Tees Valley and Tyne and Wear. The Project will improve connectivity for people living and working nearby and create better facilities and east-west connectivity for cyclists and pedestrians, and improve the reliability of people's journeys between the M6 at Penrith and the A1(M) Scotch Corner and nationwide. A consistent standard of dual carriageway, with a speed of 50mph at Kemplay Bank and 70mph in all other lengths will lead to less accidents. Use of the 'old' A66 as part of the local road network will provide better, safer routes for cyclists and pedestrians. Chapter 4 of the CftP (Document Reference 2.2, APP-008) provides further details on the safety benefits of the Project. The Applicant has considered and mitigated adverse impacts as defined and assessed throughout the accompanying ES (Application Documents 3.2-3.4) and in reviewing each of the scheme's designs at chapter 5, Scheme Design of the Project Design Report (Document Reference 2.3, APP-009). Based upon the above, the Applicant has designed a Project which will offer operational efficiency, taking into account capital cost, economics and environmental impacts. In relation to eliminating problems or mitigating impacts through design (as set out in the Policy) the proposed changes to the Project, that were accepted into the Examination, arose from a variety of factors including the identification of opportunities to further reduce the environmental

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		impacts of the Project and opportunities to reduce the amount of land required for the Project; and the identification of additional safety benefits, building on the assessment work to date. The changes and the reasons for the changes are described in the Change Application Report (Document Reference 8.1, CR1-002).
4.33	The applicant should therefore take into account, as far as possible, both functionality (including fitness for purpose and sustainability) and aesthetics (including the scheme's contribution to the quality of the area in which it would be located). Applicants will want to consider the role of technology in delivering new national networks Projects. The use of professional, independent advice on the design aspects of a proposal should be considered, to ensure good design principles are embedded into infrastructure proposals.	Reference should also be made to the Applicant's response to NNNPS Paragraphs 4.28 – 4.31 above. Functional design requirements of the Project, as a highways infrastructure Project, have been guided by the relevant technical guidance as defined in Appendix 1 of the Project Design Principles report (Document Reference 5.11, REP8-061), such as the relevant DMRB guidance. Utilising the relevant technical guidance ensures that the Project is fit for its purpose. Across all schemes, the design of structures and geotechnical elements such as overbridges and embankments has been refined following Statutory Consultation feedback, further survey information and the wider design development of the Project. Through design development, opportunities have been identified to improve the setting and visual impact of the scheme. As a result, landscaping to provide improved visual screening has been proposed on several schemes. For detail on specific landscaping and environmental mitigation proposals, refer to Chapter 10 (Landscape and Visual) of the ES. Stakeholder engagement was undertaken early in the design process and has formed an integral part of the design development process. The design has developed with input from stakeholders. Chapter 4 of the Project Design Report (Document Reference 2.3, APP-009) and the Consultation Report (Document Reference 4.4, APP-252) cover this on further detail. The Applicant sought advice from the National Highways Design Panel, acting as independent expert design advisors, to help inform the emerging preliminary design. The review process included three separate reviews during the development of the preliminary design in 2019, 2021 and 2022. Following the final review in April 2022, a series of key points were raised which are intended to be developed at the detailed design stage. This includes scoping how Electric Vehicle charging point technology can be strategically placed at destinations across the A66 to allow for new business opportunities. Full details regarding the independent design advice obtained for the Project can be found at chapter 5 of the Project Design Report (Document Reference 2.3, APP-009).

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		Please see update to paragraph 4.28 above.
4.34	Whilst the applicant may only have limited choice in the physical appearance of some national networks infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting and design measures relative to existing landscape and historical character and function, landscape permeability, landform and vegetation.	Reference should also be made to the Applicant's response to NNNPS paragraphs 4.28 - 4.33 above. The Project has incorporated 'good design' principles aligned to National Highways' The Road to Good Design criteria throughout each of the schemes. Specifically, the Project incorporates the following design principles relative to its siting and understanding of the surrounding environment. These design principles will be adhered to in the later stages of design development. Principle A – Designs that are integrated in context and express character and a sense of place. This principle incorporates the following: • Landscape character • Landscape integration • Identity and placemaking • Respect of existing landscapes, valued features and designations, including the AONB and National Parks • Historic environment and cultural pattern. Principle C – Designs to restore and enhance habitats and ecological connectivity This principle incorporates the following: • Biodiversity • Habitat protection, enhancements and connectivity • Management and monitoring of proposed ecological areas • Biodiversity enhancement • Green and blue infrastructure Full details are available within the Project Design Report (Document Reference 2.3, APP-009). Therefore, the Project demonstrates good design in terms of its siting and design measures relating to the existing landscape, historical character and function, landscape permeability, landform and vegetation.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		Please see update to paragraph 4.28 above.
4.35	Applicants should be able to demonstrate in their application how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected. The Examining Authority and Secretary of State should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy.	The Project has been subject to extensive design evolution, and this has been clearly referenced within the PDOR at chapters 4 and 5 (Document Reference 4.1, APP-244). The final Project route alignment has been favoured for a series of different reasons which can be broadly characterised into engineering, environmental, traffic and economics and stakeholder considerations. These are summarised are as follows: **Engineering** Across all schemes, the design of structures and geotechnical elements such as overbridges and embankments has been refined following Statutory Consultation feedback, further survey information and the wider design development of the Project. For the key principles driving the design of these elements, including cut/fill balances, integration with the surrounding landscape and ensuring user needs are met, refer to the Project Design Principles (Document Reference 5.11, REP8-061). The design of drainage infrastructure such as cut-off ditches and drainage attenuation ponds has also been refined following Statutory Consultation feedback, further survey information and the wider design development of the scheme. For the key principles driving the drainage design, including water quality requirements, refer to Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4). **Environmental** Environmental mitigation measures have been refined following consultation to reflect alterations to the engineering design, allowing reduction in permanent acquisition of land in some areas. Through design development, opportunities have been identified to improve the setting and visual impact of the scheme. As a result, landscaping to provide improved visual screening has been proposed on several schemes. For detail on specific landscaping and environmental mitigation proposals, refer to Chapter 10 (Landscape and Visual) of the ES. **Traffic and Economics** Where public rights of way (PRoWs) are severed by, or converge at, the upgraded A66 carriageway, they have been gathered and redirected to the nearest grade-separated crossing facility in order to provide a safe place to cross the dual carriageway. These crossing points may

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		be a new grade-separated junction, an accommodation underpass or overbridge, or a designated WCH underpass or overbridge. Safety and improvements to network capacity and resilience were key drivers for the A66 Northern Trans-Pennine Project. To enable these objectives to be met through delivery, transport modelling has been undertaken during PCF Stage 3 to test the design proposed and identify improvements where practicable. This has been used to review the design against feedback received from Statutory Consultation regarding concerns over potential traffic flows, congestion and disruption during construction. **Stakeholder** For the Project as a whole, there has been ongoing stakeholder and public engagement throughout, for details see the Consultation Report (Document Reference 4.4, APP-252). This has included engagement with landowners, local planning authorities, Statutory Environmental Bodies, other statutory consultees and other organisations regarding emerging designs, the assessment methodology and baseline data. Design reviews (including with the Design Council, an independent charity and the government's advisor on design), and topic-specific focus groups have also informed the process. Road Safety Audit feedback was made available to the design teams following Statutory Consultation. This feedback was assessed by the design team and the design updated accordingly as captured in the Road Safety Audit Designer's Response. Scheme-specific details (where relevant) can be found in Chapter 5 of the PDOR (Document Reference 4.1, APP-244). Otherwise, refer to Chapter 9 of the Transport Assessment (Document Reference 3.7, APP-236). A full review of the of the design development for this DCO application can be reviewed at the aforementioned chapters of the PDOR, including a breakdown of the above on a scheme by scheme level. During the Examination, 'Alternative Route Options' were a subject of Issue Specific Hearing 1 ('**ISH1**') held on 30 November 2022, as reported in the Applicant's Deadline 1 Submission – 7.2 Issue Specific Hearing 1 (ISH1) Post Hearing Submissions (REP1-006), The Applicant's ISH1 Note presents a detailed analysis of the case presented by the Applicant at ISH1 including with reference to the key Application documents supporting the assessment of options and alternatives.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The subject matter of ISH1 predominantly related to three main aspects of route selection. A summary of each of these matters with signposting to relevant submission documents is outlined within the following sections of the Closing Submissions [Document Reference 7.45, REP-074]: • 4.2 Scheme 08 (Cross Lanes to Rokeby) • 4.3 Scheme 06 (Appleby to Brough) • 4.4 Scheme 0405 (Temple Sowerby to Appleby) Also please see update to paragraph 4.28 above
Climate change adaptation		
4.38	Adaptation is therefore necessary to deal with the potential impacts of these changes that are already happening. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.	The Project has incorporated a series of adaptation measures which are intended to be taken forward to detailed design. Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4) assesses the potential climate impacts of the construction and operation of the Project. The chapter details the aspects of embedded mitigation and design measures which are proposed during the operation and construction of the Project to address these impacts. This can be viewed at section 7.10 of the chapter. The Project has been designed to take account of a 60-year appraisal period using the latest climate change Projections (UKCP18, RCP8.5) for the 2080's in the Climate Change Resilience ('CCR') Assessment and the Applicant has assessed the relevant safety critical elements of its design. The Project has incorporated green infrastructure throughout its design as a mitigation measure to ensure the Project's climate change resilience is considered. This includes the restoration of habitats and landscaping measures, earth works and soft-engineered slopes and the design of drainage related mitigation, amongst other things as referenced at section 7.10 of Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4). This section also includes embedded mitigation where the Project could be vulnerable to climate hazards, this includes risks to heavy rain and flooding, high winds and gales, increased temperatures, and prolonged periods of hot weather. These mitigation measures are referenced at Table 7-20 of Chapter 7 (Climate) of the ES (Application Document 3.2). The Statement of Common Ground between National Highways and the Environment Agency, submitted at Deadline 9 of the Examination evidences an agreed position between the parties in

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		regard to the climate change related methodology in the flood risk assessment and the use of climate change peak rainfall allowances to inform the detail design process (see 3-2.54).
4.40	New national networks infrastructure will be typically long-term investments which will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning location, design, build and operation. Any accompanying environment statement should set out how the proposal will take account of the Projected impacts of climate change.	The Applicant has considered the impacts of climate change at all stages in planning location, design, build and operation. The accompanying ES at Chapter 7 (Climate) (Application Document 3.2-3.4) takes account of the projected impacts of climate change. As defined at Table 7-2 of Chapter 7, it is stated that this is considered in the climate change resilience ('CCR') assessment, which is presented at sections 7.9 of Chapter 7 (Climate). This details the considerations of climate change in planning the location, design, build and operation of the Project. The potential CCR risks are expected to be largely mitigated through the use of appropriate design standards, delivered through quality construction, as well as appropriate asset management procedures during operation. These risks include heavy rain and flooding, high winds and gales and increased temperatures and prolonged periods of hot weather. The embedded mitigation within the Project design is summarised in Table 7-20 of Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4). In addition, the Project has completed a qualitative assessment of CCR measures outlined by other EIA topics such as: habitat and landscaping measures, timing of maintenance works, mitigation measures involving earthworks and soft-engineered slopes, and the design of drainage related mitigation measures. As such, the Project takes account of the Projected impacts of climate change. The Project's drainage design, presented in Appendix 14.2 of the Flood Risk Assessment and Outline Drainage Strategy (Document Reference 3.4, APP-221) was developed based on rainfall climate changes that have since been superseded. Sensitivity testing has been undertaken using the latest climate change allowances to ensure the proposed attenuation systems can accommodate the increased attenuation requirements within the Project Order Limits. This is included in the Climate change section (one section per scheme) of the Flood Risk Assessment and Outline Drainage Strategy (Document Reference 3.4, APP-221). Item D-RDWE-02 of the Environmental Management Plan Rev 5 (Document Reference 2.7, REP8-006) includes the following requirement for the development of the detailed design "*Where ponds are designed for highway run-off attenuation (as retention ponds), they must have sufficient capacity to retain run-off from all events with an annual exceedance probability of greater than 1%, plus allowance for climate change in line with DMRB CG 501 and Environment Agency guidance.*"

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		This point is agreed with the Environment Agency as set out in the Statement of Common Ground submitted at Deadline 9 of the Examination.
4.41	Where transport infrastructure has safety-critical elements and the design life of the asset is 60 years or greater, the applicant should apply the UK Climate Projections 2009 (UKCP09) high emissions scenario (high impact, low likelihood) against the 2080 Projections at the 50% probability level.	The Project incorporates safety-critical elements and assets with a design life of 60 years or greater as stated at Table 7-2 Chapter 7 (Climate) of the ES. As such, an assessment of Project design assets over a 60-year appraisal period using the latest climate change Projections (UKCP18, RCP8.5) for the 2080's in the CCR Assessment is detailed at section 7.7 Baseline Conditions at Chapter 7 (Climate) and section 7.10 Assessment of Likely Significant Effects at Chapter 7 (Climate). Please see update to paragraph 4.40.
4.42	The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time and ensure any environment statement that is prepared identifies appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of any environment statement, the Examining Authority should consider whether they need to request additional information from the applicant.	The Applicant has taken account of the potential impacts of climate change using the latest UK Climate Projections. This is stated at Table 7-2 of the Chapter 7 (Climate). The latest climate change Projections used are UKCP18 and RCP8.5 – over a 60-year appraisal period (considered to be the predicted lifetime of the new infrastructure) in the CCR assessment. This is considered at section 7.7 Baseline Conditions at Chapter 7 (Climate) of the ES. The CCR assessment also identifies embedded mitigation/adaptation within the proposed design as well as identifying potential additional mitigation measures required to address impacts identified in the CCR Assessment. This is considered at section 7.10 Assessment of Likely Significant Effects at Chapter 7 (Climate) of the ES. In summary, the Applicant has taken account of the potential impacts of climate change using the latest UK Climate Projections available.
4.43	The applicant should demonstrate that there are no critical features of the design of new national networks infrastructure which may be seriously affected by more radical changes to the climate beyond that Projected in the latest set of UK climate Projections. Any potential critical features should be assessed taking account of the latest credible scientific evidence on, for example, sea level rise (e.g., by referring to additional maximum credible scenarios such as from the Intergovernmental Panel on Climate	The Applicant has completed a sensitivity test on a series of vulnerable safety critical features of the new proposed infrastructure which may be seriously affected by more radical changes to the climate beyond that Projected in the latest set of UK climate Projections. This is considered by using the H++ scenarios within the CCR assessment, as outlined in *DMRB LA 114*. This is referenced at Table 7-2 of Chapter 7 (Climate) and set out in further details at section 7.7 Baseline Conditions and section 7.10 Assessment of Likely Significant Effects at Chapter 7 (Climate) of the ES.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	Change or Environment Agency) and on the basis that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime through potential further mitigation or adaptation.	These vulnerable safety critical features including drainage, earthworks and multi-span bridges at Kirkby Thore and Warcop relating to scenarios including heatwaves, low rainfall, high rainfall, high river flows and windstorms. The sensitivity test of the vulnerable safety critical features against the H++ climate scenarios at this stage in the design indicates that these features could be significantly affected by more radical changes to the climate beyond that Projected in UKCP18. As such, these climate scenarios will continue to be taken into account through detailed design and maintenance to ensure the scheme is designed with resilience to climate change as a key consideration. These climate scenarios represent extreme stress tests and so adapting the design at the point of construction to accommodate these scenarios would be considered precautionary. An alternative approach would be to define adaptation pathways for these vulnerable assets to ensure that the design accommodates increases in resilience at a later data if operational monitoring suggests this is necessary. Please see update to paragraph 4.40.
4.44	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment and consultation with statutory consultation bodies. Any adaptation measures must themselves also be assessed as part of any environmental impact assessment and included in the environment statement, which should set out how and where such measures are proposed to be secured.	Reference should also be made to the Applicant's response to NNNPS paragraphs 4.38 - 4.43 above. As set out in Table 7-2 at Chapter 7 (Climate) of the ES, the Project's adaptation measures are based upon the latest set of UK Climate Projections (UKCP18, RCP8.5), the Government's national Climate Change Risk Assessment and consultation with statutory consultation bodies. For example, Over a 60-year appraisal period, the CCR assessment assesses the environmental impact of any embedded mitigation (adaptation) within the design (that is, the Order Limits). The CCR assessment also identifies proposed additional mitigation where impacts are identified through the assessment. This mitigation also has the potential to cause environmental impacts, which are considered at section 7.9 Essential Mitigation and Enhancement Measures at Chapter 7 (Climate) of the ES. Further details are also set out at section 7.7 Baseline Conditions. As such, the Project incorporates the necessary adaptation measures which have been based upon the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment and consultation with statutory consultation bodies. Please see update to paragraph 4.40. In addition, the Applicant submitted a "Submission on Climate Matters" at Deadline 8 (16 May 2023) of the Examination, which provides additional

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		information regarding the Government's Carbon Budget Delivery Plan, published on 30 March 2023.
4.45	If any proposed adaptation measures themselves give rise to consequential impacts the Secretary of State should consider the impact in relation to the application as a whole and the impacts guidance set out in this part of this NPS (e.g., on flooding, water resources, biodiversity, landscape and coastal change).	The qualitative assessment of the climate change resilience of mitigation measures outlined by other EIA topics has identified several classes of mitigation measures that may be vulnerable to climate change. These classes are set out in section 7.9.20 of Chapter 7 (Climate) of the ES. The implementation of these mitigation measures should ensure their resilience to climate change resilience is considered. The assessment is based on the Project as it is described in Chapter 2 (The Project), includes embedded mitigation inherent in the design that is presented. The assessment also considers mitigation measures within the Order Limits associated with changes to biodiversity units as outlined in Chapter 6 (Biodiversity). It is noted that these would be expected to have a positive impact on net GHG emissions through the sequestration of carbon in the operational phase of the project, following habitat creation in construction phase. However, the assessment takes a conservative approach by excluding this benefit from the evaluation of significance, although the quantification of these benefits are presented in the assessment results tables.
4.46	Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so.	The CCR assessment within Chapter 7 (Climate) of the ES (Application Documents 3.2-3.4) does not scope out the assessment of vulnerability from climate change during construction. However, the UKCP18 climate Projections for the 2020s (construction period) suggest that, whilst the climate will have changed by the construction period, climate change will not significantly increase the vulnerability of the Project to climatic impacts during the construction period. Therefore, the detailed CCR assessment only covers the operational phase of the Project. Extreme events are a feature of the baseline climate, however, and the EMP sets out specific measures for the Project that the Principal Contractor(s) will employ in order to provide resilience to extreme weather during construction, which builds on existing National Highways standard construction processes. The Applicant submitted an Outline Carbon Strategy (Document Reference 7.14, REP3-041) to the Examination at Deadline 3 (24 January 2023), which sets out an outline of the principles of the Carbon Strategy that is committed to in the Environmental Management Plan. The Strategy is intended to demonstrate how National Highways will meet commitment reference MW-CL-01.

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4.47	Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the Project and/or surrounding environment (e.g. coastal processes), the Secretary of State may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (e.g. reserving land for future extension, increasing the height of an existing sea wall, or requiring a new sea wall).	The qualitative assessment of the climate change resilience of mitigation measures outlined by other EIA topics has identified several classes of mitigation measures that may be vulnerable to climate change. These classes are set out in section 7.9.20 of Chapter 7 (Climate) the ES. The implementation of these mitigation measures should ensure their resilience to climate change resilience is considered. The assessment is based on the Project as it is described in Chapter 2 (The Project), includes embedded mitigation inherent in the design that is presented. The assessment also considers mitigation measures within the Order Limits associated with changes to biodiversity units as outlined in Chapter 6 (Biodiversity). It is noted that these would be expected to have a positive impact on net GHG emissions through the sequestration of carbon in the operational phase of the project, following habitat creation in construction phase. However, the assessment takes a conservative approach by excluding this benefit from the evaluation of significance, although the quantification of these benefits are presented in the assessment results tables.
Pollution control and other environmental protection regimes	~~HW~~	
4.48	Issues relating to discharges or emissions from a proposed Project which affect air quality, water quality, land quality and the marine environment, or which include noise and vibration, may be subject to separate regulation under the pollution control framework or other consenting and licensing regimes. Relevant permissions will need to be obtained for any activities within the development that are regulated under those regimes before the activities can be operated.	Details of the relevant regulatory consents to be sought for the Project are set out in the Consents and Agreements Position Statement (Application Document 5.4, APP-287).
4.50	In deciding an application, the Examining Authority and the Secretary of State should focus on whether the development itself an acceptable use of the land is, and on the impacts of that use, rather than the control of processes, emissions or discharges themselves. They should assess the potential impacts of processes, emissions or discharges to inform	This document, and the CftP (Application Document 2.2), demonstrate that the Project conforms to planning policy and is an acceptable use of the land. These impacts are considered throughout the ES (Application Documents 3.2-3.4). The Applicant submitted a formal change request to the Examining Authority on 24 March 2023 (Document Reference 8.1, CR1-002). Following the Examining Authority's acceptance of 22 of the design changes (as outlined in the Procedural Decision PD-014), the Applicant submitted an Environmental Statement Addendum (Document Reference 8.3) (Volume 1, REP7-167, Volume 2, REP7-169, and Volume 3, REP7-171). The Environmental Statement Addendum Volumes

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	decision making, but should work on the assumption that in terms of the control and enforcement, the relevant pollution control regime will be properly applied and enforced. Decisions under the Planning Act should complement but not duplicate those taken under the relevant pollution control regime.	report an environmental assessment of how the 22 Project changes accepted into the Examination, if at all, they change or alter the conclusions of the ES. Details of other regulatory consents to be sought for the Project are set out in The Consents and Agreements Position Statement (Application Document 5.4, APP-287).
4.52	There is a statutory duty on applicants to consult the Marine Management Organisation (MMO) on nationally significant Projects which would affect, or would be likely to affect, any relevant marine areas as defined in the Planning Act (as amended by section 23 of the Marine and Coastal Access Act 2009). The Secretary of State's consent may include a deemed marine licence and the MMO will advise on what conditions should apply to the deemed marine licence. Where appropriate, the MMO should actively participate in examinations, and Examining Authorities engage with such matters, to help ensure that nationally significant infrastructure Projects are licensed in accordance with environmental legislation, including European directives.	The Marine Management Organisation has not been consulted. The Project does not affect any relevant marine areas as defined in the PA 2008.
4.54	Applicants are encouraged to begin pre-application discussions with the Environment Agency as early as possible. It is however expected that an applicant will have first thought through the requirements as a starting point for discussion. Some consents require a significant amount of preparation; as an example, the Environment Agency suggests that applicants should start work towards submitting the permit application at least 6 months prior to the	As described within the Consents and Agreement Position Statement (Application Document 5.4), the approach to discharging Environmental Permits after the grant of the DCO has been discussed with the Environment Agency. Discussion around the following environmental permits are ongoing: • Discharge to controlled waters as a water discharge activity under the Environmental Permitting (England and Wales) Regulations 2016 • Abstraction under section 24 of the Water Resources Act 1991.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	submission of an application for a Development Consent Order, where they wish to parallel track the applications. This will help ensure that applications take account of all relevant environmental considerations and that the relevant regulators are able to provide timely advice and assurance to the Examining Authority.	National Highways will continue to engage with the consent granting body ahead of main construction works and continue to review the list of other required consents to be reviewed against environmental information once available. A Statement of Common Ground (Application Document 4.5) has been progressed with the Environment Agency to record the matters that have been agreed between both parties and to identify any matters where comments still need to be resolved. In respect of the disapplication of bylaws made under, or having effect as if made under, paragraphs 5, 6 or 6A of Schedule 25 to the Water Resources Act 1991 and the disapplication of regulation 12 of the Environmental Permitting (England and Wales) Regulations 2016 in respect of 'flood risk activity' only, please see the Expanatory Memorandum submitted at Deadline 9 which provides an update on the protective provisions and consents under section 150 Planning Act 2008. The Statement of Common Ground with the Environment Agency submitted at Deadline 9 (Document Reference 4.5, Rev 5) outlines that the DCO and EMP have been drafted to require that the Environment Agency be consulted on the relevant aspects of detailed design, construction methods, and management plans required by the EMP and any subsequent risk assessment and mitigation measures. This consultation process will inform any subsequent regulatory applications.
4.55	The Secretary of State should be satisfied that development consent can be granted taking full account of environmental impacts. This will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies, such as the MMO, Natural England, Drainage Boards, and water and sewerage undertakers, to ensure that in the case of potentially polluting developments: the relevant pollution control authority is satisfied that potential releases can be adequately regulated under the pollution control framework; and	As described in the Applicant's response to NNNPS paragraph 4.54 above, close cooperation with the Environment Agency on pollution control requirements is ongoing and will ensure that potential releases will be adequately regulated, either under the relevant pollution control frameworks or, subject to the Environment Agency's agreement, will be disapplied and the pollution control requirements will be addressed within the DCO. The Consents and Agreements Positions Statement (Document Reference 5.4, APP-287) states that the necessary European Protected Species licensing are being discussed with Natural England under the Conservation of Habitats and Species Regulations 2017 (the "Habitats Regulations") or the Wildlife and Countryside Act 1981. As to the possible cumulative effects of the Project, Chapter 15 (Cumulative Effects) of the ES (Application Documents 3.2-3.4) takes account of the cumulative effects of the Project and concludes that there are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14).

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	the effects of existing sources of pollution in and around the Project are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable, particularly in relation to statutory environmental quality limits.	Statements of Common Ground between National Highways and Natural England [REP8-027], the Environmental Agency (Document Reference 4.5, REP8-020), Durham County Council (Document Reference 4.5, REP8-022), Westmorland and Furness Council (Document Reference 4.5, REP8-025), and North Yorkshire Council (Document Reference 4.5, REP8-026) show that other than for two air quality issues that are under discussion with Natural England all other matters relating to pollution control, contaminated land and public protection are agreed with these bodies. The issues still under discussion with Natural England are set out in the SoCG [REP8-027] table 3-2 of Record of Issues under Discussion as 3-2-7a/b SPA and Air Quality and 3-2-8-Use of LA105. The Applicant consider that both issues do not affect compliance with this paragraph of the NNNPS as the issues outstanding do not relate to pollution issues.
Common law nuisance and statutory nuisance		
4.58	It is very important that during the examination of a nationally significant infrastructure Project, possible sources of nuisance under section 79(1) of the 1990 Act, and how they may be mitigated or limited are considered by the Examining Authority so they can recommend appropriate requirements that the Secretary of State might include in any subsequent order granting development consent. More information on the consideration of possible sources of nuisance is at paragraphs 5.81-5.89.	A Statement of Statutory Nuisance (Document Reference 5.5, APP-288) details how the possible sources of nuisance under section 79(1) of the Environmental Protection Act 1990 relating to the Project are to be mitigated or limited.
Safety		
4.60	New highways developments provide an opportunity to make significant safety improvements. Some developments may have safety as a key objective, but even where safety is not the main driver of a development the opportunity should be taken to improve safety, including introducing the most modern and	One of the Project's key objectives is to improve road safety during construction, operation and maintenance for all, including road users, Non-Motorised Users ('NMU'), road workers, local businesses and local residents. In considering this in the design, the Project will comprise of a consistent standard of dual carriageway, with the same speed limit throughout (with the exception of a short section of 50mph dualling between M6 Junction 40 and east of Kemplay Bank), leading to fewer accidents.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	effective safety measures where proportionate. Highway developments can potentially generate significant accident reduction benefits when they are well designed.	The use of the 'old' A66 as part of the local road network will provide better, safer routes for cyclists and pedestrians. An analysis of the Project's predicted accidents and casualties for a 60-year period highlights that within the whole study area, the Project saves 281 accidents over the 60-year period, resulting in 368 fewer casualties. Full details of the assessment are at chapter 9 of the TA (Document Reference 3.7, APP-236). See also the Applicant's response to NNNPS paragraph 4.61 below. The proposed changes to the Project, that were accepted into the Examination, arose from a variety of factors including the identification of additional safety benefits, building on the assessment work to date. The changes and the reasons for the changes are described in the Change Application Report (Document Reference 8.1, CR1-002).
4.61	The applicant should undertake an objective assessment of the impact of the proposed development on safety including the impact of any mitigation measures. This should use the methodology outlined in the guidance from DfT (WebTAG) and from the Highways Agency.	A Stage 1 Road Safety Audit ('RSA') has been completed for the Project. Additional Road Safety Audits will be conducted in accordance with DfT and National Highways guidance at the detailed design stage of the Project. This is detailed at chapter 9 of the TA (Document Reference 3.7, APP-236), which provides an analysis of road accidents. A Cost and Benefit to Accidents – Light Touch (COBALT) assessment has been undertaken in conformity with the DfT's WebTAG guidance. The results are also reported within the TA at chapter 9 and are summarised below. Within the whole study area, the Project will save 281 accidents over the 60-year period, resulting in 368 fewer casualties. The breakdown of fatal and serious accidents can be considered within the following manner: For those sections that are to be improved as part of the Project, 15 fatalities and 123 serious casualties are forecast to be saved on the new A66 scheme sections. However, as traffic flows on the whole A66 between Penrith and Scotch Corner, it also increases due to these improvements (that is, including on the non-improved sections) and a net saving of 9 fatalities and 83 serious injuries is forecast to occur. The increase flow on the improved A66 also removes traffic from other roads on the surrounding road network (that is, rural links with a poorer safety record) therefore in total 14 fatalities, and 148 serious accidents are saved by the Project for both connecting rural roads traffic which would otherwise use the A66 and the A66.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		Please see update to paragraph 4.60 above.
4.62	They should also put in place arrangements for undertaking the road safety audit process. Road safety audits are a mandatory requirement for all trunk road highway improvement schemes in the UK (including motorways).	The Project has been subject to a Stage 1 RSA – see chapter 9 of the TA (Document Reference 3.7, APP-236). The design team have considered each recommendation provided by the Audit Team and have accepted the recommendations where appropriate, with agreement from National Highways as the Overseeing Organisation. All responses to the RSA recommendations were taken through a decision log process with the Overseeing Authority. The Overseeing Authority is National Highways for the trunk road network and is the Local Highway Authority for local roads and the old de-trunked A66, where it will be adopted. Where recommendations may have altered the red line boundary, those design changes were agreed with National Highways and were implemented within the design. Additional changes to the design within the red line boundary will be made at Detailed Design stage as required ahead of the Stage 2 RSA. Please see update to paragraph 4.60 above. A number of the proposed changes described in the Change Application Report (Document Reference 8.1, CR1-002) will be subject to road safety audit.
4.64	The applicant should be able to demonstrate that their scheme is consistent with the Highways Agency's Safety Framework for the Strategic Road Network and with the national Strategic Framework for Road Safety. Applicants will wish to show that they have taken all steps that are reasonably required to: • minimise the risk of death and injury arising from their development; • contribute to an overall reduction in road casualties; • contribute to an overall reduction in the number of unplanned incidents; and	An analysis of the Project predicted accidents and casualties within the 60-year economic appraisal period 2029-2088 inclusive shows a saving of 281 accidents across the total study area, resulting in 368 fewer casualties. Full details of the assessment are in chapter 9 of the TA (Application Document 3.7) and chapter 6 of the Combined Modelling and Appraisal document ('comMA') (Document Reference 3.8, APP-237). As stated regarding walking, cycling and horse-riding facilities in chapter 10 of the TA "a*ll schemes have some level of betterment compared with the provision on the existing single carriageway sections."* This is due to the extensive new provision of multi-user routes in the form of paths adjacent to the dualled A66 or along the 'old' A66 and safe places to cross the dual carriageway where appropriate. This is also defined in the Walking, Cycling and Horse Riding Proposals (Document Reference 2.4, APP-010)

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	• contribute to improvements in road safety for walkers and cyclists.	The Applicant has therefore taken all reasonable steps to minimise the risk of death, contributed to an overall reduction in road casualties and unplanned incidents and contribute to the improvements in road safety for walkers and cyclists.
4.65	They will also wish to demonstrate that: • they have considered the safety implications of their Project from the outset; and • they are putting in place rigorous processes for monitoring and evaluating safety.	The dualling of the A66 has been committed to within RIS1 and RIS2. RIS2 *"...sets a long-term strategic vision for the network. With that vision in mind, it then: specifies the performance standards Highways England (now National Highways) must meet*." As part of the performance specification, the RIS2 sets out that the "*Safety of everyone who uses or interacts with the SRN is the first responsibility for both the Department and National Highways, informing all aspects of the design of RIS2*." The Project objective to "Improve road safety, during construction, operation and maintenance for all, including road users, Non-Motorised Users (NMU), road workers, local businesses and local residents" clearly demonstrates the Applicant's commitment to safety from the outset, which is to "Improve road safety, Within the chapter 9 of the TA (Application Document 3.7) the safety benefits of the Project have been evaluated and assessed with the methodology laid out. The Applicant has demonstrated that safety implications of the Project have been considered from the outset and that rigorous processes for monitoring and evaluating safety during construction has been put in place. The impacts identified within the TA (Document Reference 3.7, APP-236) will help inform the potential issues that may arise during construction such that mitigation can be considered and implemented where possible. A Construction Traffic Management Plan, which forms Annex B13 of Environmental Management Plan (EMP) (Document Reference 2.7, REP8-015) will be completed on an iterative basis by the Principal Contractor (PC) as the Project progresses through detailed design and will be used to agree the final temporary traffic management measures for implementation during the construction of the Project. Traffic monitoring sensors may be used to recognise if traffic is using inappropriate local routes to avoid delays on the A66. The project team will monitor the journey times on the A66 to ensure excessive delays are not occurring due to the works. If delays on the A66 are causing inappropriate local routes to be used, then the project team will consider if any adjustments can be made to the Temporary Traffic Management with the aim of reducing the delays. The meausures set out in the REAC table of the EMP for Construction Traffic Management Plan (CTMP) (Annex B13) [Document Reference 2.7, REP8-015] have been updated during the Examination and the final draft submitted at Deadline 9. An example of the measures included

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		in the CTMP are traffic management measures to be implemented and routes to be used by construction vehicles to access the Project.
4.66	The Secretary of State should not grant development consent unless satisfied that all reasonable steps have been taken and will be taken to: • minimise the risk of road casualties arising from the scheme; and • contribute to an overall improvement in the safety of the Strategic Road Network.	Please see the Applicant's response to NNNPS paragraphs 4.60 - 4.65 above. The design principles of the Project have been informed by the Design Manual for Road and Bridges ('DMRB') and other relevant technical design standards. The DMRB forms the basis of a safe highway design. The Project would result in a reduction in road casualties. Within the whole study area, the Project saves 281 accidents over the 60-year period, resulting in 368 fewer casualties. This assessment is set out in chapter 9 of the TA (Document Reference 3.7, APP-236). Accident reductions occur across the whole network as the increased flow on the improved A66 also removes traffic from other roads on the surrounding road network (for example rural links with a poorer safety record) therefore in total 14 fatalities, and 148 serious accidents are saved by the Project. The Project will therefore minimise the risk of road casualties as a result of its implementation. The Project meets its objective of safety (as referenced in the response to NNNPS paragraph 4.60 of this Appendix above) and will comprise of a consistent standard of dual carriageway with the same speed limit throughout (with the exception of a short length of 50mph dualling between M6 Junction 40 and east of Kemplay Bank), leading to fewer accidents. The use of the 'old' A66 as part of the local road network will provide better, safer routes for cyclists and pedestrians. The Projects objectives were originally borne out of National Highways' three priorities. In reference to safety – this includes the below: *"By 2040, we aim for no one to be killed or seriously injured while travelling or working on our network."* Based upon the above, the Project will contribute to an overall improvement in the safety of the SRN, through its projected reduction of accidents on the network. The Applicant has therefore taken and will take all reasonable steps to minimise the risk of road casualties and contribute to the overall improvements in the safety of the SRN. Please see update to paragraph 4.65 and 4.66 above.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
Security considerations		
4.76 – 4.77	Where national security implications have been identified, the applicant should consult with relevant security experts from CPNI and the Department for Transport, to ensure that physical, procedural and personnel security measures have been adequately considered in the design process and that adequate consideration has been given to the management of security risks. If CPNI and the Department for Transport (as appropriate) are satisfied that security issues have been adequately addressed in the Project when the application is submitted, they will provide confirmation of this to the Secretary of State, and the Examining Authority should not need to give any further consideration to the details of the security measures during the examination. The applicant should only include such information in the application as is necessary to enable the Examining Authority to examine the development consent issues and make a properly informed recommendation on the application.	The Applicant has carefully considered any potential physical, procedural and personnel security measures within the design process. As a result of this process, no national security issues have been identified in developing the Project. As such, it has not been necessary to consult the CPNI. The Ministry of Defence has been consulted given their land interests and ownership at Warcop Training Area ('WTA') at Appleby to Brough. The design of the Project has included all requirements for the MoD in terms of operational requirements. The Statemenmt of Common Ground (SoCG) with the MOD [Rev 3] submitted at Deadline 6 [Document Reference 7.22, REP6-019] describes the engagement undertaken with the MOD and the agreements reached on matters such as those relating to minimising the impact on their operations and any security measures that are required. For example at 3-2-1 of the SoCG, that is concerned with agreement reached on the replacement of MOD infrastructure on land required for the construction of the Project states: "The detailed design in line with the DCO requirements will be agreed between the DIO and National Highways as part of ongoing project design. The timing of the infrastructure replacement shall be phased to minimise impacts on the MoD operation of the training facility."
Health		
4.80	New or enhanced national network infrastructure may have indirect health impacts; for example, if they affect access to key public services, local transport, opportunities for cycling and walking or the use of open space for recreation and physical activity.	The Project offers both new and enhanced national network infrastructure which has resulted in opportunities which indirectly and directly benefit access to key public services, local transport, opportunities for cycling and walking or the use of open space for recreation and physical activity. For example, through reducing severance and improving connectivity and local travel patterns through provision of new walking and cycling routes; and changes to journey times for WCHs accessing community resources, through the provision of new WCH routes, connections

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		and crossing provisions, leading to positive effects on wellbeing, quality of life, physical activity, social interaction and contact with nature. This is set out in section 13.9 of Chapter 13 (Population and Human Health) of the ES. All necessary precautions have been taken to minimise and mitigate against the risk of health implications arising from delivery and use of the infrastructure improvements. During operation, the Project is likely to bring beneficial impacts to population and human health receptors: • For residential, commercial and community receptors, it is likely that the Project will result in beneficial impacts due to enhanced accessibility and a general reduction in congestion across the A66 and associated local road network. Benefits for WCH will include a reduction in severance and an improvement in connectivity and local travel patterns through the provision of new walking and cycling routes. • Reduced congestion and journey times across the A66 will give rise to potential beneficial effects on human health as a result of improved access to facilities, services (including health care), open space and employment sites. Overall, delivery of the Project will not result in significant negative health impacts and therefore the Project has the opportunity to offer indirect health impacts. In response to the Relevant Representation submitted by the UK Health Security Agency (RR-083), National Highways has undertaken a supplemental assessment of significance for the health effects, reported in Chapter 13 of the Environmental Statement (ES). The Statement of Significance of Human Health Effects (Document Reference 7.26, REP4-013) was submitted at Deadline 4 and is to be read in conjunction with ES Chapter 13, Population and Human Health (Document Reference 3.2, APP-056). The Statement of Significance provides information on the significance of the health effects identified in the ES. It is based entirely on information contained in the ES and does not introduce new information and does not change the conclusions of the ES. During the Examination one of the interested parties (Dr Mary Clare Martin) raised concerns about the adequacy of the Environmental Statement by reference to mental health impact assessment ('MHA'), including in the context of IEMA Guidance. Paragraphs 7.1.10 – 7.1.23 of the Closing Submissions [Document Reference 7.45, REP8-074] summarise the Applicant's

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		response to the issues raised by Dr Martin with reference to submissions made during the Examination on this matter. The Applicant has also identified measures to minimise and mitigate impacts on population and human health in the EMP and the outline CTMP (as submitted at Deadline 8 [REP8-018 and REP8-015])
4.81 – 4.82	As described in the relevant sections of this NPS, where the proposed Project has likely significant environmental impacts that would have an effect on human beings, any environmental statement should identify and set out the assessment of any likely significant adverse health impacts. The applicant should identify measures to avoid, reduce or compensate for adverse health impacts as appropriate. These impacts may affect people simultaneously, so the applicant, and the Secretary of State (in determining an application for development consent) should consider the cumulative impact on health.	The Project has taken account of any likely significant environmental impacts that would have an effect on human beings. Avoidance of adverse health outcomes has been an integral part of the design process (for example, avoiding populated areas and sensitive receptors, mitigating noise and visual impacts). Health outcomes associated with the environmental and social impacts of the Project have been assessed and mitigation measures have been identified and secured. These details are set out of section 13.9 (Essential mitigation and enhancement measures) and section 13:10 Assessment of likely significant effects at Chapter 13 (Population and Human Health) of the ES. The cumulative effects of the development on human health have been assessed and set out in the ES in Chapter 15 (Cumulative Impacts) of the ES. This chapter concludes that there are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14). This includes population and human health. Therefore, the Project has demonstrated and taken account of any likely significant environmental impacts it may have on human beings. Please see update to paragraph 4,80 above.
5 Generic impacts		
Air quality		
5.6 – 5.9	Where the impacts of the Project (both on and off-scheme) are likely to have significant air quality effects in relation to meeting EIA requirements and / or affect the UKs ability to comply with the Air Quality Directive, the	The Applicant has taken into account air quality at all stages of its development, in close vicinity of the Order Limits, but also over the wider area likely to be affected. All sensitive receptors have been considered within 200m of the Order Limits.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	applicant should undertake an assessment of the impacts of the proposed Project as part of the environmental statement. The environmental statement should describe: • existing air quality levels; • forecasts of air quality at the time of opening, assuming that the scheme is not built (the future baseline) and taking account of the impact of the scheme; and • any significant air quality effects, their mitigation and any residual effects, distinguishing between the construction and operation stages and taking account of the impact of road traffic generated by the Project. Defra publishes future national Projections of air quality based on evidence of future emissions, traffic and vehicle fleet. Projections are updated as the evidence base changes. Applicant's assessment should be consistent with this but may include more detailed modelling to demonstrate local impacts. In addition to information on the likely significant effects of a Project in relation to EIA, the Secretary of State must be provided with a judgement on the risk as to whether the Project would affect the UK's ability to comply with the Air Quality Directive.	This is detailed in Chapter 5 (Air Quality) of the ES (Application Documents 3.2-3.4), including, at Table 5-2, which sets out how the Project has adhered to the requirements of the NNNPS and where this is documented. The Applicant has taken into account air quality impacts in close vicinity of the Order Limits, but also over the wider area likely to be affected. All sensitive receptors have been considered within 200m of the Order Limits. In summary, an assessment has been carried out to determine if there is a risk of affecting the UK's ability to achieve compliance with the Air Quality Directive and this has been documented at section 5.10 Chapter 5 (Air Quality) of the ES (Application Documents 3.2-3.4). Air quality thresholds are detailed in Table 54 of the ES Chapter 5 (Air Quality) for No_2, PM_{10}, $PM_{2.5}$, NO_x. As detailed in the ES, the Project has adhered to the NNNPS in so far that: • The existing air quality levels across the Project have been described, reviewed and summarised at section 5.7 (Baseline Conditions) and ES Appendix 5.3 (Baseline Monitoring). • Forecasts of air quality at the time of opening have been provided for the future baseline and taking account of the impact of the Project at ES Appendix 5.5 – Results. The likely significant effects associated with the Project, including taking account of road traffic generated by the Project, during the construction and operation stages of the Project have been determined at section 5.10 (Assessment of likely significant effects). It concludes that the construction phase and operational phase effects are both predicted to be not significant. Therefore, it is predicted the effects on air quality at human and ecological receptors would be not significant. This is following mitigation and enhancement measures presented at section 5.9 (Air Quality) of the ES which include: • Minimisation of areas to be stripped of vegetation. • Dampening down of dust generating activities and materials, including site roads, during dry weather, in addition to site monitoring (e.g., periodic visual inspections within and along site boundaries). • Ensuring vehicles entering and leaving sites are covered to prevent escape of materials during transport.
5.10	The Secretary of State should consider air quality impacts over the wider area likely to be affected, as well as in the near vicinity of the	

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	scheme. In all cases the Secretary of State must take account of relevant statutory air quality thresholds set out in domestic and European legislation. Where a Project is likely to lead to a breach of the air quality thresholds, the applicant should work with the relevant authorities to secure appropriate mitigation measures with a view to ensuring so far as possible that those thresholds are not breached.	• As far as possible temporary roads should be hard surfaced to reduce dust generation. • Road sweeping to be carried out on access roads and local roads to remove any material tracked out of the site. • Management of stockpiled materials with the potential to generate dust by rolling, covering and//or revegetating as soon as appropriate. The assessment has used the most recent information from Defra for future background Projections and National Highways for vehicle emissions (version 11) and the ammonia tool. The impact of emissions has been assessed using detailed modelling as discussed at section 5.4 (Assessment methodology) and ES Appendix 5.4 (Air Quality Assessment) (Application Document 3.4). An assessment has been carried out to determine if there is a risk of affecting the UK's ability to conform with the Air Quality Directive and the Air Quality Standards objectives. The results are provided in section 5.10 (Assessment of likely significant effects) at Chapter 5 (Air Quality) of the ES (Application Documents 3.2-3.4). As documented in section 5.10 (Assessment of likely significant effects), Chapter 5 (Air Quality) of the ES, a judgement has been provided which has assessed whether there is a risk of effecting the UK's ability to conform with the Air Quality Directive and the Air Quality Standards objectives. The results are provided in section 5.10 (Assessment of likely significant effects) at Chapter 5 (Air Quality) of the ES (Application Documents 3.2-3.4). *DMRB LA 105* sets the method which has been followed to assess compliance with the Air Quality Directive based on Pollution Climate Mapping data provided by Defra. Based on the results of this assessment, the compliance testing indicates that the Project is low risk as defined in *DMRB LA 105*. None of the schemes are at risk of becoming non-compliant as a result of the Project, the date for achieving compliance will not be affected, and there will be no increase in the length of roads in exceedance of the zones.For those changes to the design that were accepted into the Examination for air quality it was concluded, as set out in the ES Addendum Volume 1 [Document Reference 8.3 (Rev 2, REP7-167] that there were no receptors considered to be affected differently, or the change is not of a scale or nature to worsen the reasonable worse case, as assessed in the ES Air Quality Chapter 5 [Document Reference 3.2, APP-048]. Therefore Air Quality was scoped out of assessment for all the design changes proposed and accepted into the Examination.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The Applicant's use of DMRB LA105 was considered during the Examination (as summarised at paragraph 6.5.6 of the Closing Submissions [Document Reference 7.45, REP8-074] . Natural England's PADSS sets out its view that aspects of it are not Habitats Regulations Assessment ('HRA') compliant. As set out in the Applicant's response to the ExA's Rule 17 letter submitted at this Deadline 9, the Applicant has continued to engage with Natural England on this point, which has resulted in the issue of a draft Habitats Regulations Assessment Supplementary Note – North Pennine Moors SAC/SPA (the HRA Supplementary Note) to Natural England. A final version of this Note has been submitted into the Examination at this Deadline 9 and provides supporting and clarificatory information in relation to the conclusions of the Applicant's HRA in respect of the North Pennines SAC (specifically those contained in the Applicant's Statement to Inform Appropriate Assessment [APP-235] (the SIAA)). The HRA Supplementary Note in no way alters the conclusions of the Applicant's HRA which, for the reasons set out below, it remains entirely confident in. Despite the positive engagement between the parties, this point remains outstanding at the end of the Examination, pending further clarifications sought by Natural England. Nevertheless, the parties remain committed to continuing to engage positively during the ExA's three month recommendation period with a view to reaching agreement by the end of the ExA's recommendation period. During the Examinationthe Applicant responded to concerns raised about construction dust in its Response to WRs by Affected Persons [Document Reference 7.6, REP2-015] by noting that the effects from the construction phase are assessed as being temporary and not significant. The Applicant confirmed that with the implementation of best practice mitigation measures outlined in the EMP, impacts in relation to construction dust would be negligible.
5.11	Air quality considerations are likely to be particularly relevant where schemes are proposed: • within or adjacent to Air Quality Management Areas (AQMA); roads identified as being above Limit Values or nature conservation sites (including Natura 2000 sites and Sites of Special Scientific Interest (SSSI), including those outside England); and	The Applicant has considered air quality considerations within the specified areas identified in paragraph 5.10. AQMAs and nature conservation sites present within the Affected Road Network ('ARN') study area have been identified, together with any areas potentially at risk of exceeding AQS objectives or Limit Values. Forecasts of air quality at the time of opening have been provided for the future baseline and taking account of the impact of the Project. Where changes have been identified that meet the relevant criteria, these have been described. There are no likely significant effects associated with the Project.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	• where changes are sufficient to bring about the need for a new AQMAs or change the size of an existing AQMA; or bring about changes to exceedances of the Limit Values, or where they may have the potential to impact on nature conservation sites.	Air quality in the area around the Project is considered to be good. This is confirmed by the fact that there are no Air Quality Management Areas close to the project, with the nearest being over 30km from the A66. To summarise, the review of AQMAs concludes as follows: • DCC has designated two AQMAs (Durham and Chester-le-Street), however these are located over 30km from the A66, outside of the ARN and are unlikely to be affected by the Project. • EDC and RDC have not designated any AQMAs; however, EDC have been considering the potential for a future AQMA to be declared at Castlegate, Penrith. At the time of writing, no AQMA has been declared at Castlegate and timescales are unknown for when this is likely to be brought forward. As such, the Project would not result in the need for new AQMAs or extensions to existing ones. A review of the nature conservations sites listed below has been carried out to determine if there is a risk of significant air quality effect, and there are no likely effects associated with the Project. • North Pennine Moors Special Protection Area (‘SPA’) • Asby Complex Special Area of Conservation (‘SAC‘) • North Pennine Moors SAC • Lightwater Alluvial Forest part of the River Eden and Tributaries Special Site of Scientific Interest (‘SSSI’) • Crooks Beck Alluvial Forest part of the River Eden and Tributaries SSSI • Crosby Ravensworth Fell SSSI • Argill Woods and Pastures SSSI • Augill Valley Pasture SSSI • Temple Sowerby Moss SSSI • Bowes Moor SSSI • Local Wildlife Sites (various) • Biological Heritage Site (Local Wildlife Site) (Docks Acres North and Lancaster Canal • Special Roadside Verge (County Wildlife Site) (various) • Morecambe Bay Limestones and Wetlands Nature Improvement Area • Ancient Woodland (various) (see Applicant’s responses to NNNPS para 5.32 below) • Ancient and Veteran Trees (various) (as above)

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		Based on the Project design and associated construction activities, prior to mitigation the Project has the potential to impact upon air quality during both construction and operation. During construction, potential air quality effects arise from emissions of construction dust and particulate matter (PM). These emissions occur as a result of construction activities such as demolition, earthworks, construction and trackout. The quantities of each depend on the scale and intensity of the construction works. During operation, changes to the road network will result in changes to traffic flow, speed and fleet composition. Traffic flows are likely to increase due to the improved desirability of the route, and speeds are likely to increase due to increased capacity and reduced congestion. These changes will impact on emissions of the main traffic related pollutants, NOX, PM10 and PM2.5. As a result, pollutant concentrations at human and sensitive ecological receptors in the vicinity of the Project alignment, and in the wider study area near the ARN will be affected by the Project. These changes may result in permanent improvements and deteriorations in local air quality. Following essential mitigation and enhancement measures presented at section 5.9 (Air Quality) of the ES, there will be no significant effects during construction or operation on nature conservation sites. As such, the aforementioned nature conservation sites would not be impacted. Appendix 5.4: Air Quality Assessment Results (Rev 2) was revised and issued to the Examination at Deadline 4 (REP4-005). The prospect of air quality effects associated with traffic on the Castlegate potential AQMA was queried by the Examining Authority in ExQ1, at AQ1.1. In the Applicant's Responses to Examining Authority's WQs [Document Reference 7.24, REP4-011], the Applicant confirmed that the Examining Authority's interpretation of Figure 8.6 of the Transport Assessment, showing a decrease in traffic at Castlegate is correct (i.e. flow reduction of 969 vehicles or 11% AADT Do Something vs Do Minimum). The effect of the reduction in traffic is that there is likely to be a beneficial impact to air quality and no impact is therefore expected on the potential Castlegate AQMA, as set out at paragraph 6.5.6 of the Closing Submissions [Document Reference 7.45, REP8-074]. As set out in the Applicant's response to the ExA's Rule 17 letter submitted at this Deadline 9, the Applicant has continued to engage with Natural England outstanding points in relation to the HRA and North Pennines SAC, which has resulted in the issue of a draft Habitats Regulations Assessment Supplementary Note – North Pennine Moors SAC/SPA (the HRA Supplementary Note) to Natural England. A final version of this Note has been submitted into the Examination

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		at this Deadline 9 and provides supporting and clarificatory information in relation to the conclusions of the Applicant's HRA in respect of the North Pennines SAC (specifically those contained in the Applicant's Statement to Inform Appropriate Assessment [APP-235] (the SIAA)). The HRA Supplementary Note in no way alters the conclusions of the Applicant's HRA which, for the reasons set out below, it remains entirely confident in. Despite the positive engagement between the parties, this point remains outstanding at the end of the Examination, pending further clarifications sought by Natural England. Nevertheless, the parties remain committed to continuing to engage positively during the ExA's three month recommendation period with a view to reaching agreement. For the Applicants changes to the Project, as set out in the Change Application {CR1-001-CR1-018] further assessment of air quality was scoped out for all of the DCO proposed change in terms of both construction and operation, see ES Addendum Volume 1 [CR1-016].
5.12	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.	The Applicant has completed an assessment to determine whether there is a risk of significant air quality impacts and also taken into account mitigation. The results are provided in section 5.10 (Assessment of likely significant effects), Chapter 5 (Air Quality) of the ES (Application 3.4). Please see update to paragraph 5.8-5.10 and 5.11 above
5.13	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.	An assessment has been carried out to determine if there is a risk of non-compliance with the Air Quality Directive. The results of this are provided in section 5.10 (Assessment of likely significant effects) at Chapter 5 (Air Quality) of the ES. Following the implementation of mitigation set out in the EMP (Application Document 2.7), during construction, no significant effects due to emissions of dust from construction activities are likely, no significant effects for human health due to traffic emissions and no significant effects for ecological receptors due to traffic emissions. During operation there are no significant effects for human health due to traffic emissions and no significant effects for ecological receptors due to traffic emissions. Following the implementation of mitigation set out in the EMP (Application Document 2.7), the significance of the construction phase and operational phase effects are both predicted to be not significant. Therefore, the chapter concludes that it is predicted the effects on air quality at human and ecological receptors would not be significant.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		DMRB LA 105 sets the method which has been followed to assess compliance with the air quality directive based on Pollution Climate Mapping (PCM) data provided by Defra. There are eight PCM links in the study area; all of which are located around Penrith. There are no exceedances of the NO_2 air quality objective as a result of the Project at PCM receptors. Four locations are predicted to have an increase in concentration greater than 0.4µg/m^3, these are: C5, C6, C7 (0.6µg/m^3) and C8 (0.5µg/m^3). The greatest concentrations in these locations are predicted to be 14.5µg/m^3 at C5 and C7 and are not at risk of exceeding or delaying compliance with the LV. The remaining four locations are predicted to have a reduction in concentration greater than 0.4µg/m^3: C1 and C2 (-2.5µg/m^3), C3 (-1.0µg/m^3) and C4 (-0.8µg/m^3). All other changes in concentrations at locations 4m from PCM links are in-line with those set out above (increases and reductions >+/- 0.4µg/m^3), with the exception of C8_4m, which is predicted to experience an increase in 0.4µg/m^3. Based on the results of this assessment, the compliance testing indicates that the Project is low risk as defined in *DMRB LA 105*. None of the links are at risk of becoming non-compliant as a result of the Project, the date for achieving compliance will not be affected, and there will be no increase in the length of roads in exceedance in the zones. Please see update to paragraph 5.8-5.10 and 5.11 above.
5.14 – 5.15	The Secretary of State should consider whether mitigation measures put forward by the applicant are acceptable. A management plan may help codify mitigation at this stage. The proposed mitigation measures should ensure that the net impact of a Project does not delay the point at which a zone will meet compliance timescales. Mitigation measures may affect the Project design, layout, construction, operation and/or may comprise measures to improve air quality in pollution hotspots beyond the immediate locality of the scheme. Measures could include, but are not limited to, changes to the route of the new scheme, changes to the proximity of vehicles to	Chapter 5 (Air Quality) of the ES (Application Documents 3.2-3.4) sets out the essential mitigation measures for the Project in reference to air quality. During construction there is the potential for changes in air quality due to dust emissions from construction activity, emissions from site plant equipment and HGVs and also from changes in traffic flows along the Project and wider road network with traffic management in place. Best practice mitigation measures to reduce effects from construction dust are included in the EMP (Application Document 2.7). These measures include the following: • Minimisation of areas to be stripped of vegetation.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	local receptors in the existing route, physical means including barriers to trap or better disperse emissions and speed control. The implementation of mitigation measures may require working with partners to support their delivery.	• Dampening down of dust generating activities and materials, including site roads, during dry weather, in addition to site monitoring (for example, periodic visual inspections within and along site boundaries). • Ensuring vehicles entering and leaving sites are covered to prevent escape of materials during transport. • As far as possible temporary roads should be hard surfaced to reduce dust generation. • Road sweeping to be carried out on access roads and local roads to remove any material tracked out of the site. • Management of stockpiled materials with the potential to generate dust by rolling, covering and//or revegetating as soon as appropriate. No essential mitigation is considered necessary during the operational phase of the Project. Therefore, the mitigation measures would ensure that the net impact of the Project would not delay the point in which a zone would meet compliance timescales. As such, the Applicant has put forward the necessary mitigation measures through the use of an EMP which will be used as a point of reference at detailed design stage. As set out in the Closing Submissions [Document Reference 7.45, REP8-074] the mitigation is provided for in the EMP, and the 'Register of environmental actions and commitments' in Table 3-2 of that document provides that no part of the Project can start until the relevant management plans have been developed in detail and approved following relevant stakeholder consultation. These management plans include plans substantially in accordance with the Air Quality and Dust Management Plan [Document Reference 2.7 (Rev 3), REP8-011].
Carbon emissions		
5.17	Carbon impacts will be considered as part of the appraisal of scheme options (in the business case), prior to the submission of an application for DCO. 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. It is very unlikely that the impact of a road Project will, in	Carbon impacts are a consideration in the appraisal of options within the business case for the Project as outlined within the appendix of the PDOR. In reference to the ES, the Applicant has considered carbon impacts as defined at Table 7-2 of Chapter 7 (Climate). GHG emissions associated with the construction and operation of the Project have been assessed as part of the GHG emissions assessment at section 7.7. An assessment of likely significant effects is made by comparing Project emissions with the relevant UK Government carbon budgets (up to the Sixth Carbon Budget (2033-2037), which is

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	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.	the Carbon Budget furthest most in the future available for comparison). The conclusions are set out at section 7.10 (Application Documents 3.2-3.4). As per *NNNPS* and the requirement of *DMRB LA 114*, the GHG emissions assessment concludes no likely significant effect, as the *DMRB LA 114* states: *"assessment of Projects on climate shall only report significant effects where increases in GHG emissions will have a material impact on the ability of Government to meet its carbon reduction targets"*.
5.18	Any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme is so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.	As such, the Applicant has considered carbon impacts as part of its appraisal of scheme options. In addition, as per *DMRB LA 114*, GHG emissions associated with the Project have been benchmarked against other road Projects as a comparison of Project performance. As per NNNPS and the requirement of *DMRB LA 114*, the GHG emissions assessment concludes no likely significant effect, as the *DMRB LA 114* states: "*assessment of Projects on climate shall only report significant effects where increases in GHG emissions will have a material impact on the ability of Government to meet its carbon reduction targets".* Based upon the above, the carbon emissions associated with the Project would not be so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets. The Applicant has provided responses to written representations by other interested parties on the significance of its GHG assessment throughout Examination, including at Appendix 1 of REP2-017, Section 2 of [REP3-068], Section 3 of [REP5-030] and paragraphs 6.3.7 and 6.3.8 of the Applicant's Closing Submissions [REP8-074]. These responses conclude in each case that the approach to the assessment of Greenhouse Gas (GHG) emissions by the Applicant as set out in Chapter 7 of the ES (Document Reference 3.2, APP-050) is in accordance with the relevant law, policy including the NNNPS and other transport-sector schemes that have recently been granted development consent by the Secretary of State for Transport. At Deadline 8 of the Examination (16 May 2023), the Applicant made a "Submission on Climate Matters," (Document Reference 7.47, REP8-076), which provides further detail in regard to the Carbon Budget Delivery Plan, issued by Government on 30 March 2023.
5.19	Evidence of appropriate mitigation measures (incorporating engineering plans on configuration and layout, and use of materials) in both design and construction should be	The Project has incorporated appropriate mitigation measures within its design and construction, as shown on the engineering plans (Application Documents 5.17, 5.18), in the

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	presented. The Secretary of State will consider the effectiveness of such mitigation measures in order to ensure that, in relation to design and construction, the carbon footprint is not unnecessarily high. The Secretary of State's view of the adequacy of the mitigation measures relating to design and construction will be a material factor in the decision making process.	Environmental Management Plan Rev 5 ('EMP') (Application Document 2.7, REP8-005) and stated within Chapter 7 (Climate) of the ES (in particular Table 7-2). Mitigation measures to address GHG emissions associated with the construction and operation of the Project are set out at section 7.9 (Essential Mitigation and Enhancement Measures) of Chapter 7 (Climate) of the ES. Mitigation relating to construction activities is contained within the EMP (see Appendix 4.1 – EMP Application Document 2.7). As shown in Table 7-19 in Chapter 7, these measures (addressing configuration, layout and use of materials) include: • Lighting • Utilising existing carriageways where possible • Reprofiling of embankments • Masonry arches were rejected as an option for culverts on a number of schemes due to higher embodied carbon • Discounting a two-span bridge option with a pier support at Cross Lanes to Rokeby • Discounting a steel bowstring, tied arch or cable-stayed structures for viaducts at Appleby to Brough • The least carbon intensive option was chosen as the preferred option for 24 structures assessed in the SORs • Carbon steel has been discounted from use on overbridges on a number of schemes in order to minimise durability concerns associated with corrosion and to eliminate the need for repainting • The Principal Contractors selected to construct the Project will develop a carbon strategy to identify and implement opportunities to reduce carbon from existing proposals or compared to business-as-usual approaches. As such, it is concluded that the Applicant has evidenced the appropriate adequate mitigation measures required in bringing the Project forward, which will ensure that the carbon footprint of the project is not unnecessarily high.
Biodiversity and ecological conservation		
5.22 – 5.23	Where the Project is subject to EIA the applicant should ensure that the environmental statement clearly sets out any likely significant effects on	The Applicant has fully considered biodiversity matters, and these are addressed in detail in section 6.9 of Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). An assessment has been carried out to determine likely significant effects on internationally,

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	internationally, nationally and locally designated sites of ecological or geological conservation importance (including those outside England) on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity and that the statement considers the full range of potential impacts on ecosystems. The applicant should show how the Project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.	nationally and locally designated sites and all potential ecological receptors. This concluded that following implementation of mitigation measures, no significant effects during the construction phase or operational stage on any designated sites or sites of geological conservation importance. There are likely to be significant adverse impacts on habitats throughout the Project in construction, however these will be mitigated through replacement planting that will establish through the operation phase. No significant residual effects are likely. With mitigation embedded in the design and establishment of mitigation planting and habitat replacement, there is one likely permanent significant effect on barn owl at Temple Sowerby to Appleby and Stephen Bank to Carkin Moor. This is a result of new carriageway increasing barn own mortality in areas known to be used by foraging and commuting barn owl. Opportunities to conserve and enhance biodiversity have been considered as part of the Project and this is demonstrated within the Biodiversity chapter at section 6.8 (Essential mitigation and enhancement measures) and the EMP (Application Document 2.7). Equally, the Applicant has fully considered any designated sites of geological conservation importance which have been identified at an international, national, and local level through the review of desk-based information sources. This is referenced at Table 9.2 of Chapter 9 (Geology and Soils) of the ES. The Project has been identified in Chapter 10 (Landscape and Visual) of the ES as running through the North Pennines AONB and UNESCO Global Geopark. The likely effects imposed by the Project within the Geopark area have been set out in further detail at section 9.8 (Potential impacts) in Chapter 9 of the ES. Where potential impacts have been identified from the desk-based information, enhancement and conservation measures have been established to ensure any potential impact is appropriately mitigated. Where remedial works are required, as a result of contamination risk, remediation could act as an enhancement and beneficial impact if contamination levels are reduced below those present at baseline. Earthworks, such as cuttings and borrow pits, can have the potential to offer an opportunity for the enhancement of geodiversity, where excavations create temporary or permanent exposures of scientific interest. Full details are set out section 9.9 (Essential mitigation and enhancement measures) in Chapter 9 of the ES. As such, the Project accords with NNNPS paragraphs 5.22-5.23 in taking account of biodiversity within the accompanying ES, setting out any potential significant likely effects and opportunities to conserve and enhance biodiversity and geodiversity conservation interests.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		The Applicant has set out how it has maximised opportunities to conserve and enhance biodiversity (and approach to ensuring no net loss in biodiversity) in various submissions during the examination, as summarised in the Biodiversity section of the Closing Submissions (paragraphs 6.5.14 – 6.5.28) [Document Reference 7.45, REP8-074], The SoCG with Natural England [Document Reference 4.5 (Rev 4, REP8-027),] confirms agreement by both parties to the methodology and results of the EIA process.
5.25	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.	The Applicant has fully considered biodiversity matters, and these are addressed in detail in Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). An assessment has been carried out to determine likely significant effects on internationally, nationally and locally designated sites and all potential ecological receptors (refer to section 6.10 in Chapter 6 (Biodiversity)). Opportunities to conserve and enhance biodiversity have been considered as part of the Project and this is demonstrated within the Biodiversity chapter at section 6.8 (Essential mitigation and enhancement measures) and the EMP (Application Document 2.7). Equally, the Applicant has further considered any designated sites of geological conservation importance have been identified at an international, national, and local level through the review of desk-based information sources. In summary, potential adverse impacts on designated sites and ecological receptors have been avoided where possible. Where this has not been possible, adverse impacts have been mitigated or bespoke compensation proposed. The Project includes measures to mitigate severance impacts and reduce mortality risk through the provision of a number of safe crossing points for species, including culverts, underpasses and green bridges. Many of these are supported with the provision of fencing to guide species to these safe crossing points and encourage their use. The Project includes the provision of several structures which will facilitate species movement. These include otter culverts, mammal underpasses, green bridges and bat houses, which will provide connectivity across the Project. The Project will also include wider measures to mitigate impacts or enhance existing biodiversity through extensive habitat creation and enhancement. Please see update to paragraph 5.22-23 above

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
5.26	In taking decisions, the Secretary of State should ensure that appropriate weight is 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.	The Applicant has fully considered biodiversity matters and these are addressed in detail in Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). An assessment has been carried out to determine likely significant effects on internationally, nationally and locally designated sites and all potential ecological receptors. Opportunities to conserve and enhance biodiversity has been considered as part of the Project and this is demonstrated within the Biodiversity chapter at section 6.8 Essential mitigation and enhancement measures and EMP (Application Document 2.7). The Applicant has further considered any designated sites of geological conservation importance which have been identified at an international, national, and local level through the review of desk-based information sources. No changes to the results of the construction and operational assessments as reported in the ES have been made. Ongoing consultation with Natural England and the LAs has been undertaken throughout the DCO Examination Period. This has led to all matters relating to biodiversity, with the exception of one matter as set out below, being agreed between National Highways and Natural England and LAs (see Statements of Common Ground – [Document Reference 4.5 (Rev 4, REP8-027). As set out in the Applicant's response to the ExA's Rule 17 letter submitted at this Deadline 9, the Applicant has continued to engage with Natural England on an outstanding HRA point around the North Pennines SAC, which has resulted in the issue of a draft Habitats Regulations Assessment Supplementary Note – North Pennine Moors SAC/SPA (the HRA Supplementary Note) to Natural England. A final version of this Note has been submitted into the Examination at this Deadline 9 and provides supporting and clarificatory information in relation to the conclusions of the Applicant's HRA in respect of the North Pennines SAC (specifically those contained in the Applicant's Statement to Inform Appropriate Assessment [APP-235] (the SIAA)). The HRA Supplementary Note in no way alters the conclusions of the Applicant's HRA which, for the reasons set out below, it remains entirely confident in. Despite the positive engagement between the parties, this point remains outstanding at the end of the Examination, pending further clarifications sought by Natural England. Nevertheless, the parties remain committed to continuing to engage positively during the ExA's three month recommendation period with a view to reaching agreement.
5.27	The most important sites for biodiversity are those identified through international	Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4) and the Habitats Regulation Assessment (Stages 1 and 2) (Application Documents 3.5 and 3.6) accurately describe the

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	conventions and European Directives. The Habitats Regulations provide statutory protection for European sites (see also paragraphs 4.22 to 4.25). The National Planning Policy Framework states that the following wildlife sites should have the same protection as European sites: potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation and listed or proposed Ramsar sites.	Project and its association with designated sites at a European, National and Local level. The Zone of Influence ('ZoI') extends to a 2km radius from the Order Limits for international sites of nature conservation importance (or 30km for SACs where bats are noted as one of the qualifying interests). The HRA screens the relevant SPAs and SACs at Stage 1 of the assessment and completes an appropriate assessment where relevant. In summary, the Applicant has considered the relevant sites identified through international conventions and European Directives and they have been properly considered by the Applicant in accordance with the requirements of the NNNPS.
Biodiversity SSSIs		
5.28	Many Sites of Special Scientific Interest (SSSIs) are also designated as sites of international importance and will be protected accordingly. Those that are not, or those features of SSSIs not covered by an international designation, should be given a high degree of protection. All National Nature Reserves are notified as SSSIs.	The Applicant has identified and taken consideration of all SSSIs within a 2km radius from the Order Limits, the locations of/impacts on which are set out in Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). There are 12 SSSIs within 2km of the Project as follows: River Eden and Tributaries SSSI; Cowraik Quarry SSSI; Udford Low Moss SSSI; Temple Sowerby Moss SSSI; George Gill SSSI; Appleby Fells SSSI; Helbeck Wood SSSI; Swindale Wood SSSI; Bowes Moor SSSI; Kilmond Scar SSSI; Brignall Banks SSSI; and Black Scar Quarry SSSI. Cowraik Quarry SSSI is also partly designated as a Local Nature Reserve. Please see update to paragraph 5.26 above.
5.29	Where a proposed development on land within or outside a SSSI is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted. Where an adverse effect on the site's	The Applicant has identified and taken consideration of all SSSIs (list of which provided in 5.28 above) and the Project will not have an adverse effect on land either inside or outside of a SSSI. All potential adverse impacts designated sites and ecological receptors have been avoided in the first instance. Where this has not been possible, adverse impacts have been mitigated such as the provision of safe crossing points for species and structures to facilitate species

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
	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. The Secretary of State should ensure that the applicant's proposals to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest, are acceptable. Where necessary, requirements and/or planning obligations should be used to ensure these proposals are delivered.	movement in addition to the opportunities to enhance biodiversity, such as the extensive habitat creation proposed. Further details on mitigation in section 6.9 of Chapter 6 (Biodiversity) in the ES (Document Reference 3.2, APP-049). Section 6.7.2 of Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4) details the location and impacts to the SSSI's within 2km of the Order Limits. The Applicant has duly considered the potential effects to SSSIs which would arise during the construction and operation phase. The following sites were identified within 250m of the Order Limits and are subsequently most likely to be directly or indirectly impacted: • Bowes Moor SSSI • River Eden Tributaries SSSI • Temple Sowerby Moss SSSI The other SSSIs listed above at 5.28 are more than 250m outside the Order Limits and therefore will not be directly or indirectly impacted. Impacts that may occur during construction on these designated sites include habitat loss, habitat or species fragmentation, habitat damage/degradation and disturbance, however mitigation will reduce any impacts but in any event the benefits outweigh impacts as set out below. Section 6.1 of the CftP (Document Reference 2.2, APP-008) presents the case for each scheme, including the benefits each scheme will deliver. Specifically, the following paragraphs within the CftP should be referred to in reference to each of the SSSI's to be directly or indirectly impacted: • From M6 Junction 40 to Kemplay Bank Roundabout is currently an Accident Cluster Site with the proposed scheme improving safety at this junction. The proposed road upgrades in this location promote journey time savings through improvements to access to the A66 route network, while futureproofing the junction for the expected growth in users of the road resulting from improved resilience along the route. • Penrith to Temple Sowerby scheme will result in improvements for users of the local traffic network are expected including significant new WCH infrastructure benefits. Access provision to existing heritage assets has been included within the scheme design, providing significant local benefit and tourism opportunities. The Center Parcs junction improvements will also result in significant improvement to tourism opportunities along this route.

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		• For the Temple Sowerby to Appleby scheme, the introduction of a proposed bypass will bring significant improvement in amenity for the community of Kirkby Thore and will improve connections within the village, currently severed by the volume of traffic running through the village. Again, there will be improvements for users of the local traffic network are expected including significant new WCH infrastructure benefits. Overall, the Project will increase the capacity of the A66, improve resilience along the route in case of accidents or slow-moving vehicles while also providing a suite of safety improvements along the route. Furthermore, the following embedded mitigation measures, as secured within the EMP for the Project (Application Document 2.7) will be implemented which result in non-significant effects to the SSSIs: • Measures to be implemented to minimise potential noise, vibration and lighting include the following: instream works resulting in species fragmentation will be undertaken outside of the key salmonid breeding season; construction activities resulting in excess noise and vibration will be sensitively timed to reduce disturbance impacts on migrating fish; night working will be avoided where practicable adjacent to watercourses and will only be implemented where traffic management on a road necessitates it for safety;; construction sites will not be illuminated at night, where possible (where this is not possible (e.g. due to security considerations in non-green field locations), lighting will be sensitive to nocturnal species using the river and riparian corridor and face away from the watercourse, thus reducing disturbance of nocturnal migrants) • Habitat damage/degradation - an Invasive Species Management Plan will be produced by the Contractor(s) as specified in the EMP (Application Document Number 2.7). Site-specific measures regarding surface and groundwater quality, quantity and hydrogeology, dust and pollution prevention are secured within the EMP. Modelling data predicts the design of Trout Beck Viaduct does not affect the fluvial geomorphological processes both within the channel and on the floodplain • Disturbance - as outlined in habitat or species fragmentation within the EMP. Through the implementation of embedded mitigation measures as set out in section 6.8 of Chapter 6 (Biodiversity) of the ES, there will be no significant effect on the named SSSI's during the construction or operation phase of the Project. Please see update to paragraph 5.26 above.

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		Where the Environmental Statement has concluded that a specific measure or action is needed to be undertaken to mitigate an effect, such as biodiversity effects, that specific measure or action is contained in and secured through the first iteration EMP. A number of detailed management plans, schemes, method statements and strategies are also required to be developed, including a Landscape and Ecological Management Plan, to ensure impacts in respect of all environmental topics are suitably controlled. These are set out in the REAC. These would naturally supplement the commitments contained in the REAC, with most being subject to approval by the Secretary of State as part of a second iteration EMP. Engagement has been on-going during the course of the Examination on the first iteration EMP [Document Reference 7.18 (Rev 3, REP8-072], with a number of Interested Parties, including the host local authorities, Natural England, Historic England and the Environment Agency ('EA'). The amended versions of the first iteration EMP submitted into the Examination takes into account a number of comments received from these bodies, both through written submissions into the Examination and through engagement.
5.31	Sites of regional and local biodiversity and geological interest (which include Local Geological Sites, Local Nature Reserves and Local Wildlife Sites and Nature Improvement Areas) have a fundamental role to play in meeting overall national biodiversity targets, in contributing to the quality of life and the well-being of the community, and in supporting research and education. The Secretary of State should give due consideration to such regional or local designations. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent.	Please see the Applicant's response to NNNPS paragraphs 5.11 and 5.22 - 5.29 above. Full consideration has been given to all designated sites (including both regional and local designations) located within the defined study areas surrounding the Order Limits. This concluded that following implementation of mitigation measures, no significant effects during the construction phase or operational stage on any designated sites or sites of geological conservation importance. There are likely to be significant adverse impacts on habitats throughout the Project in construction, however these will be mitigated through replacement planting that will establish through the operation phase. No significant residual effects are likely. Potential adverse impacts on designated sites and ecological receptors have been avoided where possible. Where this has not been possible, adverse impacts have been mitigated or bespoke compensation proposed. The Project includes measures to mitigate severance impacts and reduce mortality risk through the provision of a number of safe crossing points for species, including culverts, underpasses and green bridges. Many of these are supported with the provision of fencing to guide species to these safe crossing points and encourage their use. This is set out in full details at Appendix 6:1 (Designated sites); section 6.6 (Baseline Conditions); section 6.7 (Potential Impacts); section 6.9 (Assessment of likely significant effects)

NPS paragraph	Requirement of the NPS	Compliance with NNNPS
		and section 6.8 (Essential mitigation and enhancement measures) of Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). Please see update to paragraph 5.26 and 5.29 above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
Biodiversity – irreplaceable habitats including ancient woodland and veteran trees		
5.32	Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.	The Project has duly considered the potential effects to ancient woodland which would arise during the construction and operation phase. Particular consideration has been given to Skirsgill Wood, Chapel Wood and Graham's Gill/Jack Wood. Anticipated construction related impacts on the designated sites include: • Habitat loss - compaction of soil and damage to, or loss of ground flora, or damage to adjacent trees as a result of construction activities. • Habitat damage/degradation - construction activities have the potential to generate pollution e.g. dust, fine sediments, fuels and oils. Potential for dust deposition from dust emitting activities which may smother vegetation and affect evapotranspiration and photosynthesis. • Potential spread of non-native invasive species which have been recorded within the woodland. **Habitat Loss:** For the purposes of the environmental assessment, as detailed in Table 6-1 (Chapter 6 Biodiversity of the ES), it is assumed that all habitats within the indicative site clearance boundary will be removed. This equates to an area of approximately 687.6ha.It is assumed that areas within the Order Limits outside the indicative site clearance boundary will be retained and enhanced for ecological mitigation. Should this assumption change at detailed design stage, this assessment will need to be reviewed and the required mitigation adjusted accordingly. The largest areas of habitat removal will be of improved grassland, poor semi-improved grassland, arable land and woodland. **Habitat Degradation** : There are likely to be significant temporary adverse impacts on priority habitats within the Order Limits during construction due to direct loss and habitat degradation, however these effects will be temporary as replacement planting will be carried out within the construction phase. This planting will establish through the operational phase to the point that it will have replaced the habitat lost in the construction phase **Ancient Woodland**: The Project has been designed to avoid all impact on ancient woodland except where this has been unavoidable. There would be no loss of ancient woodland or aged or veteran trees as a result of the Project. Full consideration has been given to ancient woodland sites and known ancient, veteran and notable trees located outside ancient woodland located within the defined study areas surrounding the Project. This is set out in

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Figure 6.2 Ancient Woodland, Ancient Tree Inventory and Habitats of Priority Importance, to be considered alongside Chapter 6 (Biodiversity) of the ES. There are 16 Ancient Woodland Sites within 1km of the Project. Of these 16 ancient woodlands, five are also located within the ARN. A further 15 ancient woodlands are located within 200m of the ARN. Potential pollution pathways have been identified within the following: • Skirsgill Wood CWS • Chapel Wood CWS • Graham's Gill/ Jack Wood There are also 69 known veteran, ancient or notable trees within 1km of the Project (10 ancient, 38 veteran and 21 notable). All are outside the Order Limits and therefore retained as part of the Project. The Case for the Project (Document Reference 2.2, APP-008) presents the need for and benefits the Project will bring. In relation to the Ancient Woodland Sites which could be impacted, the CftP identifies the overall need and benefit for the schemes wherein the sites are located. Skirsgill Wood is located within the M6 Junction 10 to Kemplay Bank Roundabout scheme, with benefits the scheme will deliver presented in paragraph 6.2.16. Chapel Wood CWS is located within the Temple Sowerby to Appleby scheme, with the benefits the scheme will deliver presented in paragraph 6.4.24. Graham's Gill/ Jack Wood is located within Cross Lanes to Rokerby scheme, with benefits the scheme will deliver presented in paragraph 6.7.19. Through the implementation of embedded mitigation measures as set out in section 6.8 of Chapter 6 (Biodiversity) of the ES, namely: • Habitat loss - Where the Project results in the removal of habitat on either a temporary or permanent basis, this will be replaced on a like-for-like or better basis. Some areas of habitat present at baseline will be replaced by smaller areas of higher quality habitat to provide mitigation. Approximately 648ha of replacement habitats will be provided during the construction phase to mitigate for baseline habitat losses. The Environmental Mitigation Maps (Application Document 2.8) show an illustration of how the proposed habitat replacement can be achieved within the Order Limits, based on the illustrative design. This is subject to change during detailed design, however the replacement ratios

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		described in Table 6.20 (Chapter 6 Biodiversity) must be achieved to ensure the mitigation measures relied on within this assessment are achieved. The ratios provided in Table 6.20 inform the quantum of habitat mitigation that might be required to off-set additional habitat losses that are introduced at detailed design stage. The ratios assume the target condition of created habitat will be moderate and managed for the benefit of wildlife over a minimum 30-year period. Ratios have been based on the prevailing guidance within the *Natural England Biodiversity Metric 3.0* and achieve a no-net-loss outcome. Environmental mitigation also takes account of the potential minor loss of or damage to trees required for drainage. Fencing to be used will also ensure no accidental encroachment on habitats outside of the area required for construction activities; • Habitat damage/degradation - an Invasive Species Management Plan will be produced by the Contractor(s) as specified in the EMP (Application Document Number 2.7). Site-specific measures regarding surface and groundwater quality, dust and pollution prevention are secured within the EMP (Application Document Number 2.7). Should permanent fencing be required, fence posts are to be hand dug to avoid heavy machinery being used. If machinery is required, low pressure vehicles and vehicle mats/pads are to be used to avoid ground compaction; • Should permanent fencing be required within Graham's Gill/Jack Wood ancient replanted woodland or Skirsgill Wood CWS, fence posts will be hand dug to avoid heavy machinery being used which may result in ground compaction. In addition, low pressure vehicles and vehicle mats or pads to avoid ground compaction will be used where required. In conclusion there will be no significant effect (loss or deterioration) on the named ancient woodlands during the construction or operation phase of the Project. To conform with this policy of the NNNPS 'habitats of principal importance' have been considered and measures to ensure these habitats are protected from adverse impacts have been included, where appropriate. Biodiversity and nature conservation has been assessed in accordance with the DMRB LA 108 and the mitigation measures will form part of the EMP (Application Document 2.7) which will be secured as part of the DCO application or secured through the DCO and certified documents. Where the Project results in the removal of habitat on either a temporary or permanent basis, this will be replaced on a like-for-like or better basis. Where harm on habitats is unavoidable though the construction or operation of the Project, it has been demonstrated through careful and comprehensive assessment (as set out

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		within the preceding sections of this document) that the substantial, long lasting and comprehensive set of benefits outweigh any harm. Please see update to paragraph 5.26 and 5.29 above
5.33	Development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design. When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments. The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered.	The Applicant has taken account of opportunities to maximise beneficial biodiversity or geological features as part of its design. Opportunities for enhancing and maximising biodiversity net gains and benefits as a result of the Project have been considered where appropriate. Section 6.89 of Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4 and 2.7) sets out design mitigation and enhancement measures that are considered essential in order to minimise potential impacts of the Project. Such mitigation is also presented through the EMP (Application Document 2.7). The majority of potential impacts affecting biodiversity features will occur during the construction phase. These impacts can be broadly summarised into the following: • Habitat loss permanently or temporarily under the road itself or where it is removed as a result of working area and compounds • Fragmentation of populations and habitats where changes to noise, air quality, hydrological regimes and human presence may change the movement of mobile species • Disturbance to species by changes to noise, light and human activity that may affect the behaviour of sensitive species, particular breeding or wintering birds • Habitat damage or degradation that might arise from changes to water quality or air quality • Incidental species mortality as a result of construction activities such as vegetation clearance, tree felling, vehicle movements and top soil stripping. Operational impacts of the Project can be summarised into the following: • Fragmentation of populations and habitats as a result of the east-west alignment of the Project resulting in severance of north-south movement • Disturbance as a result of changes to operational traffic flows and resulting changes to noise, air quality, light and human disturbance • Habitat damage can occur as a result of changes to hydrological regimes, or long term changes to nitrogen content affecting plant life

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		• Incidental species mortality due to animals having to cross the road and being hit by vehicles The Project includes measures to mitigate severance impacts and reduce mortality risk through the provision of a number of safe crossing points for species, including culverts, underpasses and green bridges. Many of these are supported with the provision of fencing to guide species to these safe crossing points and encourage their use. The Project includes the provision of several structures which will facilitate species movement. These include otter culverts, mammal underpasses, green bridges and bat houses, which will provide connectivity across the Project. The Project will also include wider measures to mitigate impacts or enhance existing biodiversity through extensive habitat creation and enhancement. Habitats lost to the Project will be replaced on a like-for-like or better basis. Whilst biodiversity net gain is not currently a requirement within the policy set out in the NNNPS, the principles of net gain have been applied to the Project mitigation in order to maximise biodiversity within the footprint of the Project. Therefore to summarise, the Applicant has demonstrated that it has considered how to maximise opportunities for building in beneficial biodiversity or geological features through its design of the Project. The Applicant notes that the Project is committed to achieving the Project Design Principle BNG01 [REP6-015]. These Principles are set out below and are secured under the DCO in accordance with Article 49 and Article 54, the latter of which requires that the authorised development must be designed in detail and carried out so that it is compatible with the design principles (among others) [REP5-012]. Accordingly, the Project is committed to achieving No Net Loss of biodiversity, and to maximising opportunities for enhancement: • • BNG01: The Project is to achieve No Net Loss for biodiversity while maximising opportunities for enhancement, measured by the relevant Defra biodiversity metric The Applicant has, accordingly, provided a report of the Project's application-stage design against Defra's biodiversity Metric 3.1 [REP7-163]. The report identifies the legal and policy context, baseline, assumptions, assessment results and conclusions. The report identifies that a net positive biodiversity unit assessment is experienced without additional mitigation for habitat and hedgerow habitat types, and that a negative is experienced for river habitat, but

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		that sufficient river unit mitigation opportunities exist within the Order limits to achieve no net loss for river habitats.
Biodiversity – protection of other habitats and species		
5.34- 5.35	Many individual wildlife species receive statutory protection under a range of legislative provisions. Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales and therefore requiring conservation action. The Secretary of State should ensure that applicants have taken measures to ensure these species and habitats are protected from the adverse effects of development. Where appropriate, requirements or planning obligations may be used in order to deliver this protection. The Secretary of State should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits of the development (including need) clearly outweigh that harm.	The Applicant has taken measures to ensure species and habitats being of principal importance are protected from the adverse effects of development. Section 6.3 of Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4) sets out the range of key legislation which is applicable to the assessment and provides an overview to the levels of protection provided and/ or species in which the legislation protects. Table 648 of Chapter 6 (Biodiversity) of the ES presents importance of ecological features following Table 3.9 of DMRB LA 108. Section 6.9 of Chapter 6 (Biodiversity) of the ES presents essential mitigation for species and habitats of principal importance and mitigation measures to ensure these species and habitats are protected from adverse impacts have been included, where appropriate. To conform with these policies of the NNNPS species and 'habitats of principal importance' have been considered and measures to ensure these species and habitats are protected from adverse impacts have been included, where appropriate. Biodiversity and nature conservation has been assessed in accordance with the DMRB LA 108 and the mitigation measures will form part of the EMP (Application Document 2.7) which will be secured as part of the DCO application or secured through the DCO and certified documents. Where the Project results in the removal of habitat on either a temporary or permanent basis, this will be replaced on a like-for-like or better basis. Where harm on habitats and species is unavoidable though the construction or operation of the Project, it has been demonstrated through careful and comprehensive assessment (as set out within the preceding sections of this document) that the substantial, long lasting and comprehensive set of benefits outweigh any harm. The CftP (Document Reference 2.2, APP-008), presents that the Project has been identified as the best option to meet the defined need and objectives, including the delivery of a comprehensive set of benefits. It offers an effective solution to the key challenges of the A66 and delivers real benefits. Where harm is generated by the construction or operation of the Project, it has been demonstrated through careful and comprehensive assessment that the substantial and long lasting benefits outweigh any harm.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Therefore, in summary, the Applicant has demonstrated the relevant measures to ensure species and habitats being of principal importance are protected from the adverse effects of development. The protection and mitigation of impacts on red squirrel has been considered during the course of the Examination. Paragraph 6.5.28 of the Closing Submissions [Document Reference 7.45, REP8-074] addresses this matter as follows: As set out in the Statement of Common Ground between the Applicant and Westmorland and Furness Council "the Applicant reiterates that the use of the proposed Animex bridge as part of the mitigation proposals for the Project will act as a pilot scheme to inform further research in this area. It should also be noted that a second iteration EMP will include detailed design information relating to the proposed red squirrel crossings, and there will therefore be an opportunity at that stage for the Council to provide further input as part of the consultation on a second iteration EMP if concerns remain regarding these proposals." Landscape and Ecological Management Plan submitted (Document Reference 2.7, REP6-005) has been updated to include further avoidance and mitigation measures in relation to biodiversity, such as measures relating to red squirrels. The measures contained in the LEMP are considered sufficient and appropriate mitigation measures. All matters associated with biodiversity mitigation and management measure are agreed between National Highways and Natural England, the LAs and the Environment Agency (see Statements of Common Ground [Document Reference 4.5 (Rev 5.], aside from those issues mentioned elsewhere in this document including the outstanding matters with Natural England relating to the North Pennines SAC.
Biodiversity mitigation - MS		
5.36	Applicants should include appropriate mitigation measures as an integral part of their proposed development, including identifying where and how these will be secured. In particular, the applicant should demonstrate that: • during construction, they will seek to ensure that activities will be confined to	The Project incorporates appropriate mitigation measures which are considered as an integral part of the proposed development. Outline details of appropriate mitigation (both inbuilt into the design, standard and bespoke mitigation measures) have been set out in: Chapter 6 (Biodiversity) of the ES at section 6.8: (Essential mitigation and enhancement measures); the EMP (Application Document 2.7); and Environmental Mitigation Maps (Application Document 2.8). These have been agreed with key

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	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 is minimised (including as a consequence of transport access arrangements); • habitats will, where practicable, be restored after construction works have finished; • developments will be designed and landscaped to provide green corridors and minimise habitat fragmentation where reasonable; • opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals, for example through techniques such as the 'greening' of existing network crossing points, the use of green bridges and the habitat improvement of the network verge.	stakeholders including Natural England, the Environment Agency and all relevant Local Authorities. During construction, it is assumed that areas within the Order Limits outside the indicative site clearance boundary will be retained and enhanced for ecological mitigation. The assessment has assumed that all habitats within the indicative site clearance boundary (shown in Figure 2.2: Indicative site clearance boundary (Document Reference 3.3, APP-062)) will be lost as a result of construction with the exception of watercourses, where the assessment assumes that this habitat will be retained and protected where not required for the construction of the road itself. Table 6-18 in Chapter 6 (Biodiversity) of the ES shows the areas of habitats within the Order limits and within the indicative site clearance boundary. Habitats lost to the Project will be replaced on a like-for-like or better basis. Whilst biodiversity net gain is not currently a requirement within the policy set out in the NNNPS, the principles of net gain have been applied to the Project mitigation in order to maximise biodiversity within the footprint of the Project. Ratios for habitat replacement have been based on the prevailing national guidance within the Natural England Biodiversity Metric 3.0 and aim to achieve a no-net-loss outcome on a habitat replacement basis. Section 6.9 of Chapter 6 (Biodiversity) of the ES presents essential mitigation and enhancement measures for both the construction and operation phase to ensure the risk of habitats being disturbed or damaged by the Project has been minimised. Section 6.8 and Section 6.9 of Chapter 6 (Biodiversity) of the ES also present details of embedded and essential mitigation which support the minimisation of the effects of fragmentation. This includes the construction of green bridges which incorporate a minimum 1m wide strip of trees or wooded scrub along one road verge, with connective planting to the north and south approaches of the bridge, providing a continuous green corridor across the live carriageway. In summary, the Applicant has demonstrated appropriate mitigation measures will be implemented, including to provide a like-for-like or better basis habitat replacement during and following construction. Please see update to paragraph 5.33 and 5.34-5.35 above
5.37	The Secretary of State should consider what appropriate requirements	The Project has incorporated appropriate requirements to ensure that the necessary biodiversity mitigation measures set out within the ES are achievable. This is set out at: section 6.8 (Essential mitigation and enhancement measures) at Chapter 6 (Biodiversity of the

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	should be attached to any consent and/or in any planning obligations entered into in order to ensure that mitigation measures are delivered.	ES (Application Documents 3.2-3.4); EMP (Application Document 2.7); and Environmental Mitigation Maps (Document Reference 2.8, APP-041). These mitigation measures will be adhered to through the use of the EMP and management plans that sit within it at detailed design stage in order to ensure that mitigation measures are delivered. As set out at paragraph 4.9 the Applicant has opted to promote an approach to the securing of mitigation that differs from the standard approach of 'requirements' being contained in a Schedule to the dDCO. This takes the form of securing, through article 53 of the dDCO, compliance with an EMP mechanism. The LEMP is one of the strategies identified within the EMP to secure the mitigation and management measures required for biodiversity – as described in response to paragraph 5.34-5.35 above.
5.38	The Secretary of State will need to take account of what mitigation measures may have been agreed between the applicant and Natural England and/or the MMO, and whether Natural England and/or or the MMO has granted or refused, or intends to grant or refuse, any relevant licences, including protected species mitigation licences.	Consideration in relation to relevant protected species mitigation and mitigation licences which may be required as a result of the Project have been set out within the ES in consultation with Natural England. This is set out at section 6.8 (Essential Mitigation and Enhancement Measures). In addition, the Consents and Agreements Position Statement (Document Reference 5.4, APP-287) indicates that the necessary discussions are underway to discuss protected species licensing under the Habitats Regulations or the Wildlife and Countryside Act 1981. The Marine Management Organisation has not been consulted. The Project does not affect any relevant marine areas as defined in the PA 2008. All matters associated with biodiversity mitigation and management measure are agreed between National Highways and Natural England, the LAs and the Environment Agency (see Statements of Common Ground [Document Reference 4.5, Rev 5), aside from those issues mentioned elsewhere in this document including the outstanding matters with Natural England relating to the North Pennines SAC.
Waste management		
5.40	Sustainable waste management is implemented through the "waste hierarchy": • prevention; • preparing for reuse;	Sustainable waste management and the waste hierarchy are key elements of the Materials Assets and Waste assessment. Full details are set out at section 11.3 of Chapter 11 (Materials and Waste) of the ES and Plate 11.2 Waste Hierarchy (Application Document 3.2).

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	• recycling; • other recovery, including energy recovery; and • disposal	Mitigation measures to reduce the impacts of material assets and waste from the Project follow the principles of sustainable resource and waste management in conformity with the waste hierarchy as described in the NPS for NN and *DMRB LA 110.*
5.42	The applicant should set out the arrangements that are proposed for managing any waste produced. The arrangements described should include information on the proposed waste recovery and disposal system for all waste generated by the development. The applicant should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that the alternative is the best overall environmental outcome.	The Project includes the necessary arrangements for managing any waste produced as set out in Chapter 11 (Materials and Waste) of the ES and the Site Waste Management Plan ('SWMP') in the EMP (Application Document 2.7) being submitted as part of the DCO application. Waste prevention is a key part of the assessment and is promoted through the implementation of the waste hierarchy as described in the NPS for NN and *DMRB LA 110*. The Project design will take into considerations the upper tiers of the waste hierarchy (referenced in paragraph 5.40 above) with a view of minimising the overall volume of waste arisings via designing out waste and maximising efficient use of materials, ultimately to prevent and minimise waste sent to landfill. Section 11.8 of Chapter 11 (Materials and Waste) of the ES sets out the essential mitigation and enhancement measures embedded into the Project's design to reduce the potential impacts relating to material assets and waste. Design for re-use and recovery, disposal, design for materials optimisation, design for off-site construction and design for waste efficient procurement all present opportunities to reduce waste and waste recovery. The EMP has been updated during the Examination and the final draft was submitted at Deadline 8 (Document Reference 2.7, REP8-005). The Applicant has committed to mitigation measures for Material Assets and Waste within the EMP, as well as a Site Waste Management Plan (see below) and a Materials Management Plan (EMP Annex B8, Document Reference 2.7, APP-028). EMP Annex B2 Outline Site Waste Management Plan has also been updated during the Examination and the final draft was submitted at Deadline 3 (Document Reference 2.7, REP3-007).
5.43	The Secretary of State should consider the extent to which the applicant has proposed an effective process that will be followed to ensure	The Applicant confirms that waste will be managed in line with the waste hierarchy. Waste and materials management is addressed in the SWMP and Materials Management Plan in Annex B of the EMP (Application Document 2.7). The assessment of materials and waste has

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	effective management of hazardous and non-hazardous waste arising from the construction and operation of the proposed development. The Secretary of State should be satisfied that the process sets out: any such waste will be properly managed, both on-site and off-site; the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. Such waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area; and adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent to disposal, except where an alternative is the most sustainable outcome overall.	illustrated there will be no significant impacts on the waste infrastructure capacity in the study area. The SWMP identifies key waste streams that are likely to be produced from the Project and appropriate waste management and minimisation options, with an aim to encourage resource efficiency and sustainable waste management. The outline SWMP is also used to record how waste is prevented, minimised, re-used, recycled and disposed of during design and on a construction site. As set out in the Materials Management Plan (Annex B8 of the EMP) (Application Document 2.7), where technically, financially and environmentally practicable, principles and measures to be implemented during design and construction should include: • Designing out and preventing waste arising • Re-using excavated earthworks within each scheme and across the Project • Recycling demolition materials that arise from construction • Diverting unwanted material from landfill through offsite recycling and recovery • Using recycled and secondary materials in the construction of the Project. Therefore, through the use of these documents, it is considered that the Project has considered how waste will be properly managed, how waste can be dealt with properly so as not to have an adverse effect on existing waste management facilities, and, highlights how adequate steps will be taken to minimise the volume of waste arisings. The EMP has been updated during the Examination and the final draft was submitted at Deadline 8 (Document Reference 2.7, REP8-005). The Applicant has committed to mitigation measures for Material Assets and Waste within the EMP, as well as a Site Waste Management Plan (see below) and a Materials Management Plan (EMP Annex B8, Document Reference 2.7, APP-028). EMP Annex B2 Outline Site Waste Management Plan has also been updated during the Examination and the final draft was submitted at Deadline 3 (Document Reference 2.7, REP3-007).
Civil and military aviation and defence interests – assessment		
5.55	Where the proposed development may have an effect on civil or military aviation and/or other	The Applicant has completed an assessment of potential effects at Warcop Training Area ('WTA') which is a long-term core defence site, used for small arms, artillery and dry training

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	defence assets, an assessment of potential effects should be carried out.	purposes and which will be impacted by Appleby to Brough (see the Applicant's response to NNNPS paras 5.57 - 5.62 below). An assessment of the potential effects at this site has been completed at Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). Alongside this, a Statement of Common Ground (Document Reference 7.22, REP6-019,) has been prepared between the Defence Infrastructure Organisation of the MoD ('DIO') and National Highways as applicant. Further engagement throughout the Examination with the Ministry of Defence (MoD) has led to all issues raised being agreed with the Applicant as captured in the SoCG with the Defence Infrastructure Organisation (Document Reference 7.22, REP6-019). This included issues on replacement MoD infrastructure on land required for construction of Scheme 6, and land acquisition and environmental mitigation on the military estate at Warcop, The MoD have also confirmed within the SoCG (at 3-1-1) that the MOD has no concerns with the proposed development that is located within their Explosive Safeguarding zone. In addition, an alternative route suggested by the Gypsy, and Traveller Community for the project was not accepted as the potential concerns raised were not considered sufficient to outweigh the negative policy implications that would result from its proposed alternative alignment crossing MOD land and that Crown consent for the land could not be secured (see Closing Submissions (Document Reference 7.45 REP8-074).
5.56	The applicant should consult the MoD, CAA, National Air Traffic Services (NATS) and any aerodrome – licensed or otherwise – likely to be affected by the proposed development in preparing an assessment of the proposal on aviation or other defence interests.	National Highways has consulted with the MoD throughout the evolution of the Project in relation to the potential effects on WTA. Given the Project's geographical location out with of safeguarding areas for licensed aerodromes, it has not been considered necessary to consult the CAA, NATS or any licensed aerodrome.
5.57	Any assessment on aviation or other defence interests should include potential impacts during construction and operation of the Project upon the operation of CNS infrastructure, flight patterns (both civil and military), other defence assets and aerodrome operational procedures.	The operational and construction impacts for Appleby to Brough have been considered at Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). The following infrastructure will be affected by the design of Appleby to Brough. The replacement of this infrastructure has been agreed with the DIO as part of pre-application engagement and all infrastructure required will be re-provided on land within the existing MoD estate at WTA. As such, the applicant has assessed the impacts of the proposed development

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		on defence interests and has designed the Project to minimise and mitigate any adverse impacts. The MoD infrastructure considerations are as follows: 1. The football pitch and sports pavilion, and Helicopter Landing Site located to the west of the existing Warcop junction. This will be re-provided on land between the B6259 and Castlehill Road on land within the existing MoD estate. A replacement sports pavilion will include changing facilities and classrooms and be multi-purpose to include the Bivouac requirements. 2.The bivouac facility to the east of the existing Warcop junction. This will be re-provided on land between the B6259 and Castlehill Road on land within the existing MoD estate. 3.The tank park and filling station located to the north of the existing Warcop junction (including waste transfer facility). This will be re-provided on land to the rear of the existing Landmark Compound north of the A66. 4.The construction of replacement access points to MoD sites north and south of the A66. The junctions and the access routes have been designed to facilitate access by the Oshkosh 1070F Heavy Equipment and Tank Transporter used by the MoD. 5. The replacement of the warning flag on land to the north of the Sandford junction. The embedded mitigation within the scheme design means that both the playing field and helipad will be relocated to the south of the scheme, off Castlehill Road. The replacement facilities will be fully operational before the closure of the existing provisions due to the potential use as an emergency services helipad. As such the residual impact will be no change which will be a neutral effect. The extent of land required for the construction of Appleby to Brough and the replacement of infrastructure has been agreed between the DIO and National Highways. This detail is set out in the Statement of Commonality and Statements of Common Ground (Document Reference 7.22, REP6-019).
5.58 (New policy not included in original Appendix A)	If any relevant changes are made to proposals for an NSIP during the preapplication period or before the end of the examination of an application, it is the responsibility of the applicant to ensure that the relevant aviation and defence	The Ministry of Defence were consulted on the Design Changes that were relevant to their land interests and operations. One of the changes (DC-21) was proposed within Ministry of Defence land and one of the reasons that the Applicant has decided to submit this proposed change was to reduce the operational impact on the MoD land. The feedback to this change

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	consultees are informed as soon as reasonably possible	was principally in favour and there were no issues or concerns raised by the MOD, as reported in table DC-21 at page 41 of the Change Application Consultation Report [CR1-007].
5.59	The Secretary of State should be satisfied that effects on civil and military aviation and other defence assets have been addressed by the applicant and that any necessary assessment of the proposal on aviation or defence interests has been carried out. In particular, it should be satisfied that the proposal has been designed to minimise adverse impacts on the operation and safety of aerodromes and that reasonable mitigation is carried out. It may also be appropriate to expect operators of the aerodrome to consider making reasonable changes to operational procedures. The Secretary of State will have regard to the necessity, acceptability and reasonableness of operational changes to aerodromes, and the risks or harm of such changes when taking decisions. When making such a judgement in the case of military aerodromes, the Secretary of State should have regard to interests of defence and national security.	The following infrastructure will be affected by the construction and operation of Appleby to Brough. The replacement of this infrastructure has been agreed with the DIO as part of pre-application engagement and all infrastructure required will be re-provided on land within the existing MoD estate at Warcop. As such, the applicant has assessed the proposal on defence interests and has been designed to minimise any adverse impacts. These infrastructure considerations are as follows: 1. The football pitch and sports pavilion, and Helicopter Landing Site located to the west of the existing Warcop junction. This will be re-provided on land between the B6259 and Castlehill Road on land within the existing MoD estate. A replacement sports pavilion will include changing facilities and classrooms and be multi-purpose to include the Bivouac requirements. 2.The bivouac facility to the east of the existing Warcop junction. This will be re-provided on land between the B6259 and Castlehill Road on land within the existing MoD estate. 3.The tank park and filling station located to the north of the existing Warcop junction (including waste transfer facility). This will be re-provided on land to the rear of the existing Landmark Compound north of the A66. 4.The construction of replacement access points to MoD sites north and south of the A66. The junctions and the access routes have been designed to facilitate access by the Oshkosh 1070F Heavy Equipment and Tank Transporter used by the MoD. 5. The replacement of the warning flag on land to the north of the Sandford junction. The extent of land required for the construction of Appleby to Brough and the replacement of infrastructure has been agreed between the DIO and National Highways. This detail is set out in the Statement of Commonality and Statements of Common Ground between the DIO (MoD) and National Highways (Document Reference 7.22 REP6-019).
5.60	If there are conflicts between the Government's national networks policies and military interests in relation to the application, the Secretary of State expects the relevant parties to have made appropriate efforts to work together to identify	The Applicant has assessed as to whether there are conflicts between the Government's national networks policies and military interests. The Statement of Common Ground (Document Reference 7.22, REP6-019) has been prepared with the DIO ('MoD') which sets out the matters agreed and for further discussion. The Project has been developed to minimise impact on the operational activity at

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	realistic and pragmatic solutions to the conflicts. In so doing, the parties should seek to protect the aims and interests of the other parties as far as possible.	WTA. Discussions between the applicant and the MoD are ongoing in the context of overall appropriate efforts to work together. These are referenced in the Statement of Commonality and Statement of Common Ground
5.62	Where, after reasonable mitigation, operational changes and planning obligations and requirements have been proposed, development consent should not be granted if the Secretary of State considers that: a development would prevent a licensed aerodrome from maintaining its licence; the benefits of the proposed development are outweighed by the harm to aerodromes serving business, training or emergency service needs; or the development would significantly impede or compromise the safe and effective use of defence assets or significantly limit military training.	The Project (at Appleby to Brough) has been developed in discussion with the MoD to ensure it does not compromise the safe and effective use of defence assets or significantly limit military training at WTA. Dialogue will continue with the MoD through construction to ensure that operational activities are not impeded by construction activities. The discussions and areas of agreement to date between the applicant and the MoD are set out in the Statement of Common Ground with the Defence Infrastructure Organisation (MoD) and National Highways (Document Reference 7.22, REP6-019). The Project would not impact upon any licensed aerodrome, nor harm any aerodrome serving business, training or emergency needs due to the Project not being located in the geographical area of these types of infrastructure.
Dust, odour, artificial light, smoke, steam		
5.82	Because of the potential effects of these emissions and in view of the availability of the defence of statutory authority against nuisance claims described previously, it is important that the potential for these impacts is considered by the applicant in their application, by the Examining Authority in examining applications and by the Secretary of State in taking decisions on development consents.	The Applicant has taken account of the potential effects of emissions created by dust, artificial light, smoke and steam. Odour was scoped out of the ES following *DMRB LA 112* guidance as set out at Appendix 4.2 (scoping opinion) of Chapter 4 (EIA Methodology) of the ES (Application Document 3.4). The Statement of Statutory Nuisance (Application Document 5.5) provides an explanation of the matters set out in section 79(1) of the Environmental Protection Act 1990 ('EPA 1990') in respect of statutory nuisance, the potential implications of the Project and the measures that have been incorporated into the Project design to limit any such potential nuisances.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		The updated EMP which was submitted at Deadline 8 (Document Reference 2.7, Rev 5) secures various measures for the control and minimisation of the impact of lighting, dust, air pollution and exhaust emissions. The 'Register of environmental actions and commitments' in the EMP provides that no part of the Project can start until the relevant management plans have been developed in detail and approved following relevant stakeholder consultation. These management plans include plans substantially in accordance with the Air Quality and Dust Management Plan. EMP Annex B4 Air Quality and Dust Management Plan has also been updated during the Examination and the final draft was submitted at Deadline 8 (Document Reference 2.7, REP8-011).
5.83	For nationally significant infrastructure Projects of the type covered by this NPS, some impact on amenity for local communities is likely to be unavoidable. Impacts should be kept to a minimum and should be at a level that is acceptable.	The impact of the Project on local communities has been assessed as set out in Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). The relevant mitigation will be secured via the EMP (Application Document 2.7) in order to ensure that impacts of the Project are kept to a minimum and at a level that is acceptable. The updated EMP which was submitted at Deadline 8 (Document Reference 2.7, Rev 5), secures measures that will be implemented to minimise impacts to local communities.
5.84 – 5.87	Where the development is subject to an Environmental Impact Assessment, the applicant should assess any likely significant effects on amenity from emissions of odour, dust, steam, smoke and artificial light and describe these in the Environmental Statement. In particular, the assessment provided by the applicant should describe: • the type and quantity of emissions; • aspects of the development which may give rise to emissions during construction, operation and decommissioning; • premises or locations that may be affected by the emissions;	The Applicant has assessed the likely significant effects on amenity from emissions of dust, steam, smoke and artificial light. No potential construction and operational impacts are identified in relation to odour included in *DMRB LA 112* and therefore these issues have been scoped out of the assessment. Steam, smoke and dust have been described and assessed in Chapter 5 (Air Quality) of the ES, and artificial light has been considered in Chapters 11 (Landscape and Visual) and 8 (Cultural Heritage) of the ES (Application Documents 3.2-3.4). The landscape and visual chapter has also considered artificial light and light spill affecting the character of the night sky within the AONB. Chapter 6 (Biodiversity) considers light spill on nature conservation and how this has been considered and embedded within the Project's mitigation. No construction or operational significant effects for any scheme are predicted for air quality. For a breakdown or the likely significant construction and operational effects in reference to Biodiversity, Landscape and Visual and Cultural Heritage, please see Table 16-1 at Chapter 16 (Summary) of the ES (Application Documents 3.2-3.4).

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	• effects of the emission on identified premises or locations; and • measures to be employed in preventing or mitigating the emissions. The applicant is advised to consult the relevant local planning authority and, where appropriate, the Environment Agency about the scope and methodology of the assessment. The Secretary of State should be satisfied that all reasonable steps have been taken, and will be taken, to minimise any detrimental impact on amenity from emissions of odour, dust, steam, smoke and artificial light. This includes the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.	The EMP sets out the procedures to be followed to ensure that impacts from these emissions are reduced as far as reasonably practicable to minimise impacts on local communities during the construction phase. The EMP (Application Document 2.7) would be secured as part of this DCO application. The applicant maintains ongoing consultation with the five host authorities of the Project and the Environment Agency in discussing the scope and methodology of these assessments. In summary, the Applicant has carried out the required assessments and has taken and will continue to take all reasonable steps to minimise the likely significant effect of the above emissions. The EMP has been updated during the Examination and updated draft was submitted at Deadline 8 (Document Reference 2.7, Rev 5). The Applicant has committed to mitigation measures for for the control and minimisation of the impact of lighting, dust, air pollution and exhaust emissions. EMP Annex B4 Air Quality and Dust Management Plan has also been updated during the Examination and the final draft submitted at Deadline 8 (Document Reference 2.7, REP8-011).
5.89	The Secretary of State should ensure the applicant has provided sufficient information to show that any necessary mitigation will be put into place. In particular, the Secretary of State should consider whether to require the applicant to abide by a scheme of management and mitigation concerning emissions of odour, dust, steam, smoke, artificial light from the development to reduce any loss to amenity which might arise during the construction and operation of the development. A construction management plan may help codify mitigation.	Please see the Applicant's response to NNNPS paragraphs 5.82 and 5.84-5.87 above.
Flood risk		

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.90	Climate change over the next few decades is likely to mean milder wetter winters and hotter drier summers in the UK, while sea levels will continue to rise. Within the lifetime of nationally significant infrastructure Projects, these factors will lead to increased flood risks in areas susceptible to flooding, and to an increased risk of flooding in some areas which are not currently thought of as being at risk. The applicant, the Examining Authority and the Secretary of State (in taking decisions) should take account of the policy on climate change adaptation in paragraphs 4.36 to 4.47.	The Project has taken account of the NNNPS policy on climate change adaptation. As set out in the response to NNNPS paragraph 4.38 above, the need to adapt to climate change has been taken into consideration as part of the Project assessment and design. The assessment has considered a range of weather conditions which might arise, including increased temperatures and increased precipitation. This methodology is detailed within section 14.9 of Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4). As set out in the response to NNNPS paragraphs 4.40, 4.41, 4.42, and 4.32, a Flood Risk Assessment ('FRA') detailed within Appendix 14.2 (Application Document 3.4) has been undertaken to consider the potential future increase in flood risk (both in areas which are currently susceptible, or in areas which are not currently at risk) as a result of climate change, and any necessary design requirements to respond to this increased risk. The optioneering process (as detailed in ES Chapter 3 (Assessment of Alternatives) (Application Document 3.2)), has identified offline routes to minimise impacts on the floodplain (minimise crossing distance, minimise land take within floodplain, increasing distance from sensitive receptors) and hydromorphology. The Statement of Common Ground with the Environment Agency [Document Reference 4.5 (Rev 4) REP8-020] confirms that the climate change peak rainfall allowance methodology in the FRA is agreed and that no outstanding matters are still to be agreed or are in discussion in relation to resilience of the Project to climate change. (See 3-2.54 Climate change peak rainfall allowances of Table 3-1 Record of Agreed Issues of the SoCG with the EA) [Document Reference 4.5 (Rev 4) REP8-020].
5.91	The National Planning Policy Framework (paragraphs 100 to 104) makes clear that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. But where development is necessary, it should be made safe without increasing flood risk elsewhere. The guidance supporting the National Planning Policy Framework explains that essential transport infrastructure (including	The development of the Project is necessary to improve the existing transport conditions of the A66. Appendix 14.2 (FRA) of the ES (Document Reference 3.4, APP-221) identifies that the Project is located within areas at risk of flooding and details on a scheme-by-scheme basis the Order Limits as Flood Zone 2 or 3, indicating that there are areas at medium or high probability of flooding. These areas are generally located where the Project crosses valley saddles and along Main River (River Gretta and River Eden) and tributary corridors. Since the Project is partially located in Flood Zones 3a and 3b, the Exception Test must be satisfied.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	mass evacuation routes), which has to cross the area at risk, is permissible in areas of high flood risk, subject to the requirements of the Exception Test.	The schemes which are subject to the Exception Test are as follows: • M6 Junction 40 to Kemplay Bank • Penrith to Temple Sowerby • Temple Sowerby to Appleby • Appleby to Brough As set out in paragraph 14.2.2.55 of the FRA, the Exception Test is only required for elements of proposed 'essential infrastructure' development located in Flood Zone 3 as defined within *DMRB LA 113, NI/1.7*. The two parts of the test require the Project to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall. The Project satisfies the Exception Test criteria as follows: Part 1 For all schemes referenced above, the Project meets part one of the test insofar that that it will deliver wider sustainability benefits (social, economic and environmental) as set out within chapter 3 of the CtfP (Document Reference 2.2, APP-008). This includes, *inter alia*, through the social value initiatives, environmental and heritage enhancements and economic benefits through improved east-west connectivity. Part 2 In reference to part 2 of the test, the Project meets the exception test relating to the below schemes as follows: • **M6 Junction 40 to Kemplay Bank** – The proposed alignment to the east of the Carleton Underpass is identified as being within the maximum extent of flooding from reservoirs. The proposed design will be constructed to remain operational and safe in all times of flooding from fluvial, surface water and groundwater sources. In respect of the risk associated with flooding from reservoirs, the FRA details how the management of large raised reservoirs is governed by the Reservoirs Act 1975. • **Penrith to Temple Sowerby** – The proposed alignment to the west of Whinfell Park Cottages is identified as being within the maximum extend of flooding from reservoirs. The proposed design will be constructed to remain operational and safe in all times of

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		flooding from fluvial, surface water and groundwater sources. The improvements to the A66 will provide wider sustainability benefits to the community that outweigh the flood risk posed by the exceptional circumstances that would result in a reservoir breach scenario. In respect of the risk associated with flooding from reservoirs, the FRA details how the management of large raised reservoirs is governed by the Reservoirs Act 1975. • **Temple Sowerby to Appleby**. The proposed scheme is located in flood zone 3. The proposed design will be constructed to remain operational and safe in times of flooding from fluvial, surface water and groundwater sources. The proposed design results in no net loss of flood plain storage which has been achieved using level for level compensatory storage for locations where the alignment has been raised outside of the flood level. • **Appleby to Brough.** The proposed scheme incorporates new road infrastructure in flood zone 3b and significantly increases the impermeable area being discharged to local watercourses. Flood storage lost due to the new road infrastructure will be compensated for by the construction of new, compensatory storage areas. Surface water run-off will be attenuated, and proposed flow rates restricted to ensure that there is no increased flood risk as a result of the scheme. Based upon the above, it is demonstrated that the Project will not have a detrimental impact on flooding, to the satisfaction of the Exception Test. A summary of the flood risk issue considered during the Examination is set out within paragraphs 6.4.4 – 6.4.11 of the Closing Submissions [REP9-078]. This states at paragraph 6.4.4-6.4.6 that: “The Applicant acknowledges that during the Examination, flood risk has drawn a particular focus, primarily the hydraulic modelling undertaken by the Applicant. Concerns were raised by the EA and the Lead Local Flood Authorities as the hydraulic model had not been accepted by the EA at the time of submission of the DCO application. The Applicant and the EA have continued to collaborate positively and address modelling concerns throughout the Examination. This work has not resulted in any notable changes to the flood extent and has not affected the conclusions of the FRA. The EA have stated that, in respect of its own functions, they have accepted the modelling in relation to Schemes 1, 2, 3, 4, 5, 7, 8 and 9 of the Project and are content that they would not give rise to an unacceptable risk of fluvial flooding or increase fluvial flood risk elsewhere based on the details submitted to

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		date. Baseline hydraulic modelling for Scheme 6 has also now been agreed between the Applicant and the EA, which is confirmed in the SOCG with the EA submitted at Deadline 8. Notwithstanding the above, the Applicant is aware that the EA has, at Deadline 7, proposed draft wording for a control mechanism in respect of flood risk on Scheme 6. The Applicant agrees in principle with such a mechanism, in order to provide certainty to the Examining Authority and the Secretary of State." For the latest position please see the joint position statement submitted at Deadline 9 as part of the Applicant's response to the Rule 17 letter. A Flood Risk Assessment (FRA) was undertaken for the proposed design changes (of which 22 out of the 24 were accepted into the Examination). The FRA of the changes is contained within Appendix 3 of the ES Addendum (Document Reference 8.4, CR1-017). Only one of the changes was considered ito have potential for introduce new or greater likely significant effects in relation to flood risk – this was design change DC-04. The conclusion reached for DC-04, as set out in section 1.7 of the FRA Addendum was "The proposed design change DC-04 is not anticipated to result in a change to the likely significant effects reported in ES Chapter 14 Road Drainage and the Water Environment (Document Reference 3.2, APP-057) and ES Appendix 14.6 Hydrogeological Impact Assessment (Document Reference 3.4, APP-225)"
5.92 – 5.94	Applications for Projects in the following locations should be accompanied by a flood risk assessment (FRA): Flood Zones 2 and 3, medium and high probability of river and sea flooding; Flood Zone 1 (low probability of river and sea flooding) for Projects of 1 hectare or greater, Projects which may be subject to other sources of flooding (local watercourses, surface water, groundwater or reservoirs), or where the Environment Agency has notified the local planning authority that there are critical drainage problems.	The Project is accompanied by an FRA at Appendix 14.2 of the ES (Document Reference 3.4, APP-221), meeting the requirements of the NNNPS. The FRA assesses the risk of all forms of flooding to and from the Project. The approach presented in the FRA is based on the Source-Pathway-Receptor model. As part of following this model the causes or 'sources' of flooding to and from the Project are considered based on an assessment of local conditions and consideration of the effects of climate change using Environment Agency guidance. The nature and likely extent of flooding arising from any one source has also been considered, for example, whether such flooding is likely to be localised or widespread. The FRA demonstrates how flooding risks posed by/to each scheme of the Project and demonstrates how those risks will be managed, allowing for climate change scenarios. Mitigation measures, including existing and proposed drainage, presented will manage and reduce the flood risks identified. As presented in paragraph 14.2.2.53 of Appendix 14.2 (FRA) of the ES, in conformity with *DMRB LA 113, NI/1.7*, the development is classified as "Essential Infrastructure". The

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	This should identify and assess the risks of all forms of flooding to and from the Project and demonstrate how these flood risks will be managed, taking climate change into account. In preparing an FRA the applicant should: • consider the risk of all forms of flooding arising from the Project (including in adjacent parts of the United Kingdom), in addition to the risk of flooding to the Project, and demonstrate how these risks will be managed and, where relevant, mitigated, so that the development remains safe throughout its lifetime; • take the impacts of climate change into account, clearly stating the development lifetime over which the assessment has been made; • consider the vulnerability of those using the infrastructure including arrangements for safe access and exit; • include the assessment of the remaining (known as 'residual') risk after risk reduction measures have been taken into account and demonstrate that this is acceptable for the particular Project; • consider if there is a need to remain operational during a worst case flood event over the development's lifetime; • provide the evidence for the Secretary of State to apply the Sequential Test and Exception Test, as appropriate.	development is therefore permitted providing it is located within Flood Zones 1 or 2; or, if it is located in Flood Zones 3a or 3b that the requirements of the Exception Test are satisfied. On a scheme-by-scheme basis, the FRA considers the risk of all forms of flooding to and from the Project and sets out the information needed to apply the Sequential and Exception tests. The FRA sets out how any risks will be managed / mitigated, demonstrating that the Project will remain safe from flooding through its lifetime (taking into account over a 1 in 100-year event + climate change uplift). The following schemes have been subject to the sequential and exceptions test: • M6 Junction 40 to Kemplay Bank • Penrith to Temple Sowerby • Temple Sowerby to Appleby • Appleby to Brough The Sequential Test compares the proposed site with other available sites to find out which has the lowest flood risk. The Project satisfies the sequential test as follows: • **M6 Junction 40 to Kemplay Bank** – The design team considered alternative alignments which would still meet the Project requirements. These are reviewed in the PDOR (Application Document 4.1). The review identifies the proposed route is the most favourable with the least environmental impacts, impacts on landowners, buildability, design safety, whilst maintaining Project design principles. It also considers reasons in discounting alternative options for the Schemes • **Penrith to Temple Sowerby** – The scheme is in Flood Zone 1 and at low risk of fluvial flooding. However, flood risk must be considered from all potential sources. The scheme is shown to be at low risk of surface water and groundwater flooding. However, the mapping indicates that the scheme to the west of Whinfell Park Cottages is within the maximum extent of flooding from reservoirs. Therefore, the design team considered alternative routes or combination routes and concluded that the schemes preferred route alignment is most favourable with the least environmental impacts, impacts on landowners, buildability, design safety, whilst maintaining Project design principles. A full review of alternative alignments is described in the PDOR (Application Document 4.1). • **Temple Sowerby to Appleby** - The design team considered 15 principal alternative routes or combination of routes. As described within the PDOR (Application

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Document 4.1), the review identifies that the proposed route is the most favourable with the least environmental impacts, impacts on landowners, buildability, design safety, whilst maintaining Project design principles. . It also considers reasons in discounting alternative options for the Schemes • **Appleby to Brough** - The route of the A66 between Appleby and Brough is generally located within agricultural land bounded by a MoD training camp and firing range to the north and follows the southern edge of the North Pennines AONB from Moor House Lane all the way to Brough in the east. Following completion of the feasibility study in May 2020 the Preferred Route (the Black Route) was announced. This route marginally encroached into the AONB at the eastern end hence at this preliminary design stage four end-to-end refined plan alignments were considered to balance the impact on the AONB against the impacts that alternative routes outside of the AONB might have on the local environment, property, and communities. The four routes were formed through the combination of three component sections: western, central, and eastern. The western section sits entirely with Flood Zone 1 and Sequential and Exception Tests do not apply. An assessment for the central and eastern sections were considered and described in full detail at paragraphs 14.2.5.70 – 14.2.5.75 of the FRA. It is concluded that the alignment developed at this preliminary design stage is the best viable option for minimising flood impact. As set out in the response to NNNPS 5.91 above, the Exception Test is satisfied in relation to the relevant areas of the Project. The design of the aforementioned schemes will remain operational and safe during periods of fluvial, groundwater and surface flooding. Residual risks associated with the drainage/ flood risk are also assessed in the FRA. With embedded mitigation the residual risk which the temporary and permanent features of the Project would generate for other receptors is considered to be low. This demonstrates that this would be acceptable for the Project. The need for safe access and egress routes is considered within Paragraph 14.2.1.14 of the FRA. Please see update to paragraph 5.91 above
5.96	Applicants for Projects which may be affected by, or may add to, flood risk are advised to seek	National Highways has undertaken pre-application discussions with the Environment Agency, Lead Local Flood Authorities ('LLFAs') (CCC, NYCC and DCC) and Natural England.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	sufficiently early pre-application discussions with the Environment Agency, and, where relevant, other flood risk management bodies such as lead local flood authorities, Internal Drainage Boards, sewerage undertakers, highways authorities and reservoir owners and operators. Such discussions can be used to identify the likelihood and possible extent and nature of the flood risk, to help scope the FRA, and identify the information that will be required by the Secretary of State to reach a decision on the application once it has been submitted and examined. If the Environment Agency has concerns about the proposal on flood risk grounds, the applicant is encouraged to discuss these concerns with the Environment Agency and look to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency's concerns, preferably before the application for development consent is submitted.	Consultation undertaken as part of the assessment of flood risk is set out in Paragraph 14.2.1.22 of Appendix 14.2 (FRA) of the ES (Document Reference 3.4, APP-221). There are several key local stakeholders and/or approving authorities associated with the development of the Project in addition to those referenced above including Natural England. Consultation with these stakeholders is recorded in the respective Statements of Common Ground (Document Reference 4.5, REP8-027). These discussions have included details which have scoped the FRA to allow the SoS to reach a decision. The Statement of Common Ground with the Environment Agency details the relevant points of agreement with the Applicant, and where remaining areas of agreement are sought. As such, where concerns have previously been raised by the Environment Agency, the applicant has taken steps to resolve these issues as part of the DCO Application, where practicable. As such, the Applicant has taken the necessary steps in engage with the Environment Agency and LLFAs as early in the process as possible. See update to 5.91 above
5.97	For local flood risk (surface water, groundwater and ordinary watercourse flooding), local flood risk management strategies and surface water management plans provide useful sources of information for consideration in Flood Risk Assessments. Surface water flood issues need to be understood and then account of these issues can be taken, for example flow routes should be clearly identified and managed.	The Applicant has completed a review of local flood risk management strategies and surface water management plans in the FRA (Appendix 14.2 of the ES (Document Reference 3.4, APP-221)). As presented in paragraph 14.3.6 of section 14.6 of Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4), such regional and local level policies have been considered as part of the Road Drainage and the Water Environment assessment and have informed the identification of receptors and resources and their sensitivity; the assessment methodology; the potential for likely significant environmental effects; and required mitigation. In summary, the Applicant has taken account of local flood risk.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.98	Where flood risk is a factor in determining an application for development consent, the Secretary of State should be satisfied that, where relevant: the application is supported by an appropriate FRA; the Sequential Test (see the National Planning Policy Framework) has been applied as part of site selection and, if required, the Exception Test (see the National Planning Policy Framework).	An FRA for the Project has been prepared and is provided at Appendix 14.2 of the ES (Document Reference 3.4, APP-221). As stated in the Applicant's response to NNNPS paragraphs 5.91 - 5.94 above, flood risk is a factor in determining the application and the Sequential Test and the Exception Test must be applied. The approach regarding the Sequential Test and Exception Test is set out in paragraphs 14.2.56 to 14.2.2.59 of Appendix 14.2 Flood Risk Assessment of the ES. The tests were applicable to the following schemes: • M6 Junction 40 to Kemplay Bank • Penrith to Temple Sowerby • Temple Sowerby to Appleby • Appleby to Brough As set out in the response to paragraph 5.92 – 9.94 of this appendices, the aforementioned schemes pass the necessary sequential test. As set out in the response to paragraph 5.91 of this appendix, the aforementioned schemes pass the necessary exception test. Please see update to paragraph 5.91 above
5.99	When determining an application, the Secretary of State should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where (informed by a flood risk assessment, following the Sequential Test and, if required, the Exception Test), it can be demonstrated that: within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and	This Project satisfies the requirements set out in paragraph 5.99. The FRA at Appendix 14.2 of the ES addresses the following points: In accordance with DMRB LA113, NI/1/7, the development is classified as 'Essential Infrastructure' as depicted on the flood risk vulnerability classification. The development is therefore permitted providing it is located within Flood Zones 1 and 2, with a sequential and exception test required if located in Flood Zones 3a and 3b. The sequential and exception tests for the Project have been discussed in the response to paragraphs 5.92-5.94 and 5.91 of this Appendix. The tests further confirm that flood risk will not be increased elsewhere as a result of the Project. The Project has accounted for climate change within its design to ensure that the Project is flood resilient and resistant in the future. The need for safe access and egress routes has been considered within paragraph 14.2.2.102 of the FRA, which states that the proposed

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and priority is given to the use of sustainable drainage systems.	design is constructed to remain operational and safe in times of flooding from fluvial, surface water and ground water sources. The FRA sets out the residual risks for each scheme under headings 14.2, which conclude that residual risk can be safely managed in the event of drainage or flood risks. The Project has taken account of guidance relating to SuDS, and the design of the Project incorporates attenuation basins and flow control devices in order to accommodate surface water run off. It is concluded that the Project has taken flood risk into account in its design and that the FRA addressing both the Sequential and Exception Tests demonstrates that the development remains safe from flooding through its lifetime (taking climate change into account) and that flood risk will not be increased beyond existing conditions. In addition, with embedded mitigation the residual risk which the temporary and permanent features of the Project would generate for other receptors is considered to be low, The FRA indicates that for elements of the Project in Flood Zone 3 (M6 Junction 40 to Kemplay Bank, Penrith to Temple Sowerby, Temple Sowerby to Appleby and Appleby to Brough) the Project will not have a detrimental impact on flooding and in some cases will provide wider sustainability benefits to the community that outweigh the flood risk posed, which meet the Exception Test. This is achieved for example through any flood storage lost due to the new road infrastructure being compensated for by the construction of new compensatory storage areas. In addition, surface water run-off will be attenuated, and proposed flow rates restricted to ensure that there is no increased flood risk as a result of the scheme. Please see update to paragraph 5.91 above
5.100	For construction work which has drainage implications, approval for the Project's drainage system will form part of any development consent issued by the Secretary of State. The Secretary of State will therefore need to be satisfied that the proposed drainage system complies with any National Standards published by Ministers under Paragraph 5(1) of Schedule 3 to the Flood and Water Management Act 2010. In addition, the development consent order, or any associated planning obligations, will need to	The Project has considered drainage implications through its design. Section 14.3 of Chapter 14 (Road Drainage and Water Environment) of the ES, demonstrates that the Applicant has reviewed and taken account of the National Standards set under the Flood and Water Management Act 2010, such as the DMRB. The applicant has also considered guidance for sustainable drainage systems, which will be adopted and maintained for the Project, and guidance from the Construction Industry Research and Information Association, CCC, DCC and NYCC. In summary, the carriageway drainage to be used on the Project consists of a multi-stage treatment drain measures to collect, store, convey and treat routine runoff. These include measures such as grassed swales (dry), catch-pits and detention basins to remove and retain

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	make provision for the adoption and maintenance of any Sustainable Drainage Systems (SuDS), including any necessary access rights to property. The Secretary of State, should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example, the applicant, the landowner, the relevant local authority, or another body such as the Internal Drainage Board.	soluble and suspended pollutants to ensure discharges to groundwater or local watercourses are to acceptable levels. The drainage design will also incorporate measures to control and contain spillages, where required. Any spillages on the scheme following road accidents would be routinely managed by National Highways, which is responsible for the maintenance of trunk road assets. The SuDS along the A66 route will also be managed by National Highways or in partnership with CCC within the Warcop area (see section 14.2 of the FRA (Appendix 14.1) (Application Document 3.4). Discharges from the proposed drainage system, including any treatment requirements, will be compliant with relevant standards (*DMRB LA 113, CG 501* and *CG 532)* and have been assessed using the Highways England Water Risk Assessment Tool ('HEWRAT'). Revision 2 of the Ground and Surface Water Management Plan (GSWMP) (Annex B7 of the EMP) was submitted into the Examination at Deadline 3. The GSWMP should be read in conjunction with the Landscape and Ecological Management Plan (Annex B1), as they complement and interact with each other. The commitment to the GSWMP is set out within Table 3-2: Register of environmental actions and commitments (REAC) of the EMP [Document Reference 2.7, REP3-011] at -RDWE-01. The REAC table confirms that: "The purpose of the GSWMP is to: • Identify surface watercourses and groundwater bodies that could be affected by the Project • Summarise the existing flood risk and set out specific actions to be taken in the event of intense rainstorms • Provide sufficient evidence to demonstrate that construction activities within Flood Zone 3 will not lead to additional flood risk outwith the construction area or impact on flood flow conveyance, compared to the existing situation • Define the requirements for regulatory consent and set out any conditions that must be applied • Control abstraction from/discharge to Controlled Waters and abstraction from public water supply, including measures for minimising water use • Control any connections for sewage effluent

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		• Set out proposals for and management of dewatering excavations and underground ducts and chambers, voids treatment and management of water aspects related to underground structures • Set out pollution prevention measures, controls on in-channel working and any additional mitigation for sensitive surface and ground water receptors and specify requirements for relevant method statements (Annexes C1, C2 and C4) • Set out monitoring requirements and actions to be implemented in an emergency." These documents must be worked up in detail, consulted on and approved by the Secretary of State as part of a second iteration EMP as secured by article 53 of the DCO. .
5.101	If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of flood risk, the Secretary of State can grant consent, but would need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try and resolve the concerns.	As described within Paragraph 14.2.1.24 of the FRA at Appendix 14.2 of the ES (Document Reference 3.4, APP-221), consultation with the Environment Agency has been ongoing throughout the design of the Project. The Environment Agency does not object to the Project, with any concerns in relation to flood risk having been addressed. Therefore, based upon the conclusions presented in the FRA, as set out in the response to NNNPS Paragraph 5.91 above, no such grounds for an objection are anticipated. A full record of engagement with the Environment Agency can be found within the associated Statements of Common Ground (Document Reference 4.5, REP8-020) Please see update to paragraph 5.91 above
5.102	The Secretary of State should expect that reasonable steps have been taken to avoid, limit and reduce the risk of flooding to the proposed infrastructure and others. However, the nature of linear infrastructure means that there will be cases where: • upgrades are made to existing infrastructure in an area at risk of flooding; • infrastructure in a flood risk area is being replaced;	The Applicant has taken reasonable steps to avoid, limit and reduce the risk of flooding to the proposed infrastructure and others through its design and the measures adopted. In areas of flood risk, the schemes that sit within them have passed the necessary Exception and Sequential Tests. The Project falls into the first / second case described in paragraph 5.102 of the NNNPS, as the upgrades/replacements proposed to the existing A66 would be carried out within areas which are at risk of flooding. A FRA has been prepared to support Chapter 14 (Road Drainage and the Water Environment) of the ES (see Appendix 14.2) (Document Reference 3.4, APP-221) and confirms in paragraph 14.2.2.113 that, providing the proposed measures are adopted within the design of the scheme, flood risk will not be increased beyond existing conditions. Please see update to paragraph 5.91 above

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	• infrastructure is being provided to serve a flood risk area; and • infrastructure is being provided connecting two points that are not in flood risk areas, but where the most viable route between the two passes through such an area.	
5.103	The design of linear infrastructure and the use of embankments in particular, may mean that linear infrastructure can reduce the risk of flooding for the surrounding area. In such cases the Secretary of State should take account of any positive benefit to placing linear infrastructure in a flood-risk area.	The Project has considered the impact of existing embankments at various lengths of the Project, as part of the flood risk mitigation. As detailed in the FRA at Appendix 14.2 of the ES (Document Reference 3.4, APP-221), there are no proposals to construct new embankments as part of this Project. As set out within chapter 3 of the CftP (Document Reference 2.2, APP-008), the Project offers a suite of social, economic and environmental benefits which have been considered as part of the Project's design. These offer a positive benefit of placing linear infrastructure at individual schemes in a flood-risk area. Please see update to paragraph 5.91 above
5.104	Where linear infrastructure has been proposed in a flood risk area, the Secretary of State should expect reasonable mitigation measures to have been made, to ensure that the infrastructure remains functional in the event of predicted flooding.	The Applicant has taken account of flood risk, and mitigation measures have been incorporated into the Project's design to ensure that the infrastructure remains functional in the event of predicted flooding. These measures are set out at section 14.8 of Chapter 14 (Road Drainage and Water Environment) and Appendix 14.2 (FRA and Outline Drainage Strategy) of the ES (Document Reference 3.4, APP-221) These include flood compensatory storage, including at schemes Temple Sowerby to Appleby and Appleby to Brough which are intended to mitigate any loss of floodplain and ensure that there is no increase in flood risk downstream of the Project. Please see update to paragraph 5.91 above
Flood risk – mitigation		
5.110	To satisfactorily manage flood risk and the impact of the natural water cycle on people, property and ecosystems, good design and	Please see the Applicant's response to NNNPS paragraphs 5.92 - 5.94, 5.100, 5.102 and 5.104 above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	infrastructure may need to be secured using requirements or planning obligations. This may include the use of sustainable drainage systems but could also include vegetation to help to slow runoff, hold back peak flows and make landscapes more able to absorb the impact of severe weather events.	Good design principles have been incorporated into the Project's design in order to manage flood risk. These principles include 'theme C' defined within the Project Design Principles (Document Reference 5.1, APP-285) which considers designs to restore and enhance habitats and ecological connectivity. This includes planting required for landscape integration and water attenuation. Drainage design will also ensure road run-off is channelled into a suitable system to protect retained and newly created habitats. Wetland/non-attenuation ponds are to be designed as a biodiversity resource with draw-down zones, shallow sides and shelving to maximise opportunities for aquatic wildlife. All ponds are to be surrounded by either wetland planting, species-rich grassland or a scrub/grassland mosaic to maximise opportunities for a range of species. These measures will help to manage flood risk through the use of SuDs and their associated vegetation and planting. Sustainable drainage systems have been included as set out in the FRA and Outline Drainage Strategy (see Appendix 14.2 of the ES (Document Reference 3.4, APP-221)). The Applicant acknowledges that during the Examination, flood risk has drawn a particular focus, primarily the hydraulic modelling undertaken by the Applicant. Concerns were raised by the EA and the Lead Local Flood Authorities as the hydraulic model had not been accepted by the EA at the time of submission of the DCO application. The Applicant and the EA have continued to collaborate positively and address modelling concerns throughout the Examination. This work has not resulted in any notable changes to the flood extent and has not affected the conclusions of the FRA. The EA have stated that, in respect of its own functions, they have accepted the modelling in relation to Schemes 1, 2, 3, 4, 5, 7, 8 and 9 of the Project and are content that they would not give rise to an unacceptable risk of fluvial flooding or increase fluvial flood risk elsewhere based on the details submitted to date. Baseline hydraulic modelling for Scheme 6 has also now been agreed between the Applicant and the EA, which is confirmed in the SOCG with the EA submitted at Deadline 8. Notwithstanding the above, the Applicant is aware that the EA has, at Deadline 7, proposed draft wording for a control mechanism in respect of flood risk on Scheme 6. The Applicant agrees in principle with such a mechanism, in order to provide certainty to the Examining Authority and the Secretary of State." For the latest position please see the joint position statement submitted at Deadline 9 as part of the Applicant's response to the Rule 17 letter. For the avoidance of doubt as set out in the SoCG there are no residual flood risk concerns as a result of the controls contained within the DCO documents and the information provided to the EA by the Applicant.

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		Revision 2 of the Ground and Surface Water Management Plan (GSWMP) (Annex B7 of the EMP) was submitted into the Examination at Deadline 3. The GSWMP should be read in conjunction with the Landscape and Ecological Management Plan (Annex B1), as they complement and interact with each other. The commitment to the GSWMP is set out within Table 3-2: Register of environmental actions and commitments (REAC) of the EMP [Document Reference 2.7, REP3-011add reference] at -RDWE-01. The REAC table confirms that: "The purpose of the GSWMP is to: • Identify surface watercourses and groundwater bodies that could be affected by the Project • Summarise the existing flood risk and set out specific actions to be taken in the event of intense rainstorms • Provide sufficient evidence to demonstrate that construction activities within Flood Zone 3 will not lead to additional flood risk outwith the construction area or impact on flood flow conveyance, compared to the existing situation • Define the requirements for regulatory consent and set out any conditions that must be applied • Control abstraction from/discharge to Controlled Waters and abstraction from public water supply, including measures for minimising water use • Control any connections for sewage effluent • Set out proposals for and management of dewatering excavations and underground ducts and chambers, voids treatment and management of water aspects related to underground structures • Set out pollution prevention measures, controls on in-channel working and any additional mitigation for sensitive surface and ground water receptors and specify requirements for relevant method statements (Annexes C1, C2 and C4) • Set out monitoring requirements and actions to be implemented in an emergency."
5.112 – 5.115	Site layout and surface water drainage systems should cope with events that exceed the design capacity of the system, so that excess water can	The Project has surface water drainage arrangements incorporated within its design.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	be safely stored on or conveyed from the site without adverse impacts. The surface water drainage arrangements for any Project should be such that the volumes and peak flow rates of surface water leaving the site are no greater than the rates prior to the proposed Project, unless specific off-site arrangements are made and result in the same net effect. It may be necessary to provide surface water storage and infiltration to limit and reduce both the peak rate of discharge from the site and the total volume discharged from the site. There may be circumstances where it is appropriate for infiltration attenuation storage to be provided outside the Project site, if necessary, through the use of a planning obligation. The sequential approach should be applied to the layout and design of the Project. Vulnerable uses should be located on parts of the site at lower probability and residual risk of flooding. Applicants should seek opportunities to use open space for multiple purposes such as amenity, wildlife habitat and flood storage uses. Opportunities can be taken to lower flood risk by improving flow routes, flood storage capacity and using SuDS.	The drainage systems for Project are designed to minimise the risk of it flooding elsewhere by incorporating current design standards and future climate change allowances. Attenuation and drainage design is considered in detail in Chapter 14 (Road Drainage and the Water Environment) (Document Reference 3.2, APP-055) and Appendix 14.2 (FRA and Outline Drainage Strategy) of the ES (Document Reference 3.4, APP-221). In accordance with DMRB CG 501, a 20% increase to peak rainfall intensity shall be considered the minimum accommodated within the drainage design in order to account for potential climate change. The Project has considered Environment Agency guidance for allowances that should be made for climate change whereby both the central and upper end allowances should be assessed to understand the level of impact. Equally, in the Cumbria area, a 50% climate change allowance has been included as a sensitivity check, having been advised by the Environment Agency. On this basis, the Project's surface water drainage arrangements ensure that there will be no increase to runoff rates as a result of the proposals. The Projects' proposed drainage design has assessed existing run off rates and flow control devices have been incorporates into the drainage systems. Storage for surplus flows has generally been provided using attenuation ponds. The proposed drainage design makes an allowance for potential climate change. A 40% increase to rainfall intensity has been included when considering surface water storage, and attenuation ponds designed to ensure no flooding occurs during the critical 1 in 100-year storm. These attenuation ponds are situated within the Order Limits. The sequential approach has been taken to the layout and design of the Project and is referenced in the aforementioned FRA. The FRA also sets out specific design and mitigation measures for each scheme relating to drainage as set out under each scheme heading within section 14.2. On the vulnerability classification scale, the Project is considered to be essential infrastructure instead of being considered as a 'more' or 'less' vulnerable land use within Flood Zone 3. No likely significant adverse effects during the construction or operational stages are identified for flood risk. As such, the Project has demonstrated its consideration for surface water drainage arrangements within its design. See also the response to NNNPS paragraph 5.231 below.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Please see update to paragraph 5.110 above
Land instability		
5.117 – 5.118	Where necessary, land stability should be considered in respect of new development, as set out in the National Planning Policy Framework and supporting planning guidance. Specifically, proposals should be appropriate for the location, including preventing unacceptable risks from land instability. If land stability could be an issue, applicants should seek appropriate technical and environmental expert advice to assess the likely consequences of proposed developments on sites where subsidence, landslides and ground compression is known or suspected. Applicants should liaise with the Coal Authority if necessary. A preliminary assessment of ground instability should be carried out at the earliest possible stage before a detailed application for development consent is prepared. Applicants should ensure that any necessary investigations are undertaken to ascertain that their sites are and will remain stable or can be made so as part of the development. The site needs to be assessed in context of surrounding areas where subsidence, landslides and land compression could threaten the development during its anticipated life or damage neighbouring land or property. This could be in the form of a land stability or slope stability risk assessment report.	The Applicant has considered land stability, as set out in the NNNPS, NPPF and supporting planning guidance. In conformity with *DMRB LA 109*, geotechnical risk associated with land stability is assessed within Appendix 9.2 (Ground investigation reports) (Document Reference 3.4, APP-189) of Chapter 9 (Geology and Soils) of the ES (Application Documents 3.2-3.4) and the associated Preliminary Sources Study Report (National Highways, 2019) (Appendix 9.4) (Document Reference 3.4, APP-195). Where considered necessary, stability assessments will be undertaken at relevant points along each scheme and further surveys will take place during the detailed design phase to ensure that land stability does not cause a risk to the Project. Through the above approach, the Applicant has taken steps to identify land stability risks and that the necessary investigations are undertaken. In relation to Geology and Soils, land stability and related issues were discussed at Issue Specific Hearing 2 (ISH2). The Applicant's ISH2 post hearing submissions [**REP1-009**] sets out how the Applicant carried out an early assessment at the PEIR stage, and demonstrates how the Applicant has continued to assess land stability. The Applicant has also identified measures to minimise and mitigate impacts on soil quality in the Soil Management Plan [REP3-013] which has been updated throughout the Examination.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
Historic Environment		
5.124	Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets. The absence of designation for such heritage assets does not indicate lower significance.	The Applicant has identified and reviewed any non-designated heritage assets of archaeological interest that sit along the Project's route. Section 8.4 of Chapter 8 (Cultural Heritage) of the ES (Application Documents 3.2-3.4) sets out the criteria used to assess the value of non-designated archaeological remains (i.e. to enable comparison against the value of Scheduled Monuments); in DMRB terminology value equates to significance in the NPS. Where appropriate, non-designated assets have been attributed a higher value, which has ensured their significance is reflected in the assessment. As such, non-designated assets of archaeological interest that are demonstrably of equivalent value to Scheduled Monuments have been identified as such and subject to the policies for designated heritage assets. The Applicant's Comments on LIR [Document Reference 7.9, REP2-018] at pages 53-54 (in response to Cumbria and Eden District County Council's LIR), page 84 (in response to Durham County Council's LIR) and page 127 (in response to North Yorkshire County Council and Richmondshire District Council's LiR) respond to the Council's comments on cultural heritage. These sections of the Applicant's comments on the LIRs outline the full extent of surveys undertaken, explanation of how the Written Schemes of Investigation ('WSIs') and the EMP will operate and comments on the strategy for risk ratings against heritage assets in response to Council queries. For example at paragraph 2.15.4-2.15.5 of the Applicant's Comments on the LIRs it states: "National Highways highlights that the surveys undertaken to inform the assessment of the likely effects on archaeology from the proposed Project were not confined to intrusive trial trenching but included nonintrusive surveys comprising aerial photographic and LiDAR assessment, geophysical survey (magnetometry and earth resistance) and, in some scheme areas, geochemical survey."
5.125	The Secretary of State should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including 'local listing', or through the nationally significant infrastructure Project examination and decision	The Project has undergone considerable levels of stakeholder engagement, as detailed in paragraph 8.4.38 of Chapter 8 (Cultural Heritage) of the ES. Local authorities along the route have not identified any non-designated assets through local listing (although this process has started and is ongoing in Cumbria). Assets which fall into the category set out in NNNPS

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	making process) on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.	paragraph 5.125 have been identified in the assessment process and the impacts upon them considered. Non-designated assets of archaeological interest that are demonstrably of equivalent value to Scheduled Monuments have been identified as such and subject to the policies for designated heritage assets. The Cultural Heritage assessment detailed in Chapter 8 (Cultural Heritage) of the ES considers non-designated heritage resources within 300m of the Order Limits. This study area is based upon professional judgement and that non-designated resources are less likely to experience significant adverse effects as a result of changes to their settings beyond this distance, because of their lower environmental value (sensitivity). This does not mean that non-designated heritage resources cannot be of greater than a low environmental value (sensitivity), just that this is less common. A strategy for mitigating effects on the heritage resources with opportunities for increasing understanding has been developed. These resources include non-designated archaeological sites.
5.126 – 5.127	Where the development is subject to EIA the applicant should undertake an assessment of any likely significant heritage impacts of the proposed Project as part of the Environmental Impact Assessment and describe these in the environmental statement. The applicant should 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. As a minimum the relevant Historic Environment Record should have been consulted and the heritage assets assessed using appropriate expertise. Where a site on which development is proposed includes or has the potential to include heritage assets with	The Applicant has undertaken an assessment to assign significance to heritage assets, and assess impacts on those assets. Section 8.4 of Chapter 8 (Cultural Heritage) of the ES describes the approach taken to assessing effects on heritage within the EIA using appropriate expertise. This ES chapter is the primary document which reports the Project impacts and effects upon heritage assets. It reports the impacts on all designated and non-designated heritage assets. Section 8.4 paragraphs 8.4.3 to 8.4.21 (Baseline Conditions) describes the Assessment Methodology. The following Historic Environment Records have been consulted from the relevant Local Authorities along the route, in addition to the National Heritage List for England ('NHLE') record which is compiled and maintained by Historic England, containing information on all of the protected sites and buildings in England. These include: • CCC Historic Environment Record ('CHER') - lists all sites of archaeological or historical interest within Cumbria (excluding the Lake District National Park). • DCC Historic Environment Record ('DHER') - lists all sites of archaeological or historical interest within DCC.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation.	• NYCC Historic Environment Record ('NYHER') - lists all sites of archaeological or historical interest within North Yorkshire. • Conservation area data for EDC and DCC. Consultation is being undertaken with Historic England, Conservation Officers and Archaeological Officers in Cumbria, Durham and North Yorkshire to inform the project design. Engagement is ongoing and is documented in a Statement of Common Ground (Application Document 4.5). Consultation has also taken place with the Roman Roads Research Association ('RRRA'), the Milestone Society and the Churches Conservation Trust. In the assessment of the Historic Environment, due to the density of scheduled monuments and associated non-designated archaeological remains along the route of the Project, the study area encompasses a corridor extending 1km either side of the DCO boundary for designated heritage assets and 300m either side of the DCO boundary for non-designated heritage assets. This allows for potentially significant impacts on the assets and their setting of designated and non-designated heritage assets to be identified. As described within section 8.4 (Assessment Methodology) of Chapter 8 (Cultural Heritage) of the ES, the baseline has been informed by prior archaeological evaluations and excavations. In addition to desk-based assessment, field work has been undertaken to inform the Project design. To summarise, the Applicant has taken the relevant measures in assessing the significance of heritage assets along the Project's route. As summarised at paragraph 6.5.49 of the Applicant's Closing Submission [Document Reference 7.45, REP8-074] "the SoCG with Historic England confirms agreement by both parties to the methodology and results of the EIA process. The latest SoCGs with Durham County Council, North Yorkshire County Council and with Westmorland and Furness District Council confirm that there are no heritage grounds outstanding, other than Durham County Council's (DCC's) preference for an alternative route at one scheme." The further consideration during the course of the Examination of the alternative blue route that is preferred by DCC and the implications for the historic environment is summarised at section 4.2 of the Applicant's Closing Submission [Document Reference 7.45, REP8-074], as follows:

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Discussions were held at ISH1 about this Scheme concerning the route selection process and in particular the reasons for selection of the “Black Option” over the “Blue Option”. The route selection process for Scheme 08 was set out at ISH1 and is outlined in section 2.1 of the ISH1 Note with reference to the heritage assessment and the effect of the proposed development on Rokeby Park Registered Park and Garden (‘RPG’). The junction option development at this location is outlined within the Route Development Report from paragraphs 5.8.20 to 5.8.51 and paragraphs 5.8.92 to 5.8.93. In addition, paragraphs 5.7.33 to 5.7.35 of the PDOR explain the principal considerations. The principal consideration in the preference for the Black Option (with a western junction at Rokeby) is the impact on the Grade II* Rokeby Park RPG. Analysis of paragraphs 5.131 and 5.132 of the NNNPS, which concern the impact of a proposed development on the significance of a designated heritage asset, is set out in the ISH1 Note at pages 11 to 12 and confirmed in ISH1 by Historic England in oral submissions. As set out in the LPCS, there will be no substantial harm to or loss of any heritage assets as a result of the Project, therefore paragraph 5.133 is not considered in any greater detail. If the Blue Option had been taken forward, the identified partial loss would have required more detailed analysis against paragraph 5.131 and 5.132. In policy terms, while it has not been concluded that the Blue Option would cause substantial harm, it would lead to a partial loss as it would have a direct physical effect on the Rokeby Park RPG. The Applicant balanced this and other factors in its consideration of the Blue Option against the Black Option and considered that given the lower level of harm and lack of direct physical effect caused by the Black Option, it was far more favourable in policy terms. The ISH1 Note also records the views of Historic England as expressed at ISH1 and confirms that it considers that the Applicant ought to seek to select the route causing the least harm and therefore supports the choice of the Black Option. The Applicant notes that Durham County Council continues to maintain a preference for the Blue Option over the Black Option, as set out in the SoCG with Durham County Council, where the Applicant’s response is also clearly set out. Another matter associcated with the assessment of the historic environment that was considered during the course of the Examination related to Skirsgill Hall and Park. As summarised at paragraph 6.5.54 of the Applicant’s Closing Submissions [Document Reference 7.45, REP8-074] in the Response to Examining Authority’s Further WQs

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		[Document Reference 7.34, REP6-020] item HE 2.2, the Applicant addressed a question regarding the Skirsgill Park Appraisal. The Applicant noted the limitations of the Skirsgill Park Appraisal, as outlined in that report, which relates to an area of proposed ecology mitigation planting located in plot 0102-01-34. The Applicant's response to question HE 2.2 explained that in the Applicant's view, informed by professional judgement and experience, the introduction of the proposed ecology planting would not have a significant impact on the landscape setting associated with Skirsgill House, as it would be barely perceptibly from Skirsgill House frontage owing to it being seen as part of the existing woodland.
5.128	In determining applications, the Secretary of State should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development (including by development affecting the setting of a heritage asset), taking account of the available evidence and any necessary expertise from: relevant information provided with the application and, where applicable, relevant information submitted during examination of the application; any designation records; the relevant Historic Environment Record(s), and similar sources of information; representations made by interested parties during the examination; and expert advice, where appropriate, and when the need to understand the significance of the heritage asset demands it.	The Project has been developed taking into consideration the full suite of legislative, policy and information materials relevant to the protection of heritage assets. Section 8.3 of Chapter 8 (Cultural Heritage) of the ES details the national, regional and local level policies which have been considered as part of the Cultural Heritage assessment where these have informed the identification of receptors (heritage resources) and their sensitivity, the assessment methodology, the potential for likely significant environmental effects and required mitigation. The key sources of data used to identify baseline conditions are those listed in the response to NNNPS paragraphs 5.126 - 5.127 above (I.e. the NHLE, CHER, DHER, NYHER and EDC and DCC conservation data). The assessment of likely significant effects is presented in section 8.9 of Chapter 8 (Cultural Heritage) of the ES (see the response to NNNPS paragraph 5.131 below for a summary of these). Please see update to paragraph 5.126-5.127 above
5.129	In considering the impact of a proposed development on any heritage assets, the Secretary of State should take into account the particular nature of the significance of the	As set out in the response to NNNPS paragraphs 5.124 - 5.128 above, the Applicant has considered the impact of the proposed development, with regard to the significance of the heritage assets identified and their value to current and future generations.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	heritage asset and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between their conservation and any aspect of the proposal.	Section 8.6 of Chapter 8 (Cultural Heritage) of the ES presents the full range of route wide heritage resources. The Project assessment and design has responded to the sensitivity and the value of designated and non-designated heritage assets, particularly during the construction and operation phases. Section 8.8 of Chapter 8 (Cultural Heritage) of the ES presents mitigation and enhancement measures, detailing how essential measures to mitigate construction impacts would consist of measures to reduce direct impacts (physical damage), and indirect impacts (changes to setting that affect the significance of the resources). Mitigation of direct impacts on archaeological remains would take the form of 'preservation by record', that is, the investigation of archaeological remains prior to construction, and the analysis of artefacts and publication of results following the construction of the Project. Essential mitigation of construction impacts includes measures to reduce indirect impacts, for example removing or mitigating visual intrusion (or other indirect impacts) upon the setting of heritage features, allowing for improved appreciation, and understanding of these assets. Please see update to paragraph 5.124 and 5.126-127 above.
5.130	The Secretary of State should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities – including their economic vitality. The Secretary of State should also take into account the desirability of new development making a positive contribution to the character and local distinctiveness of the historic environment. The consideration of design should include scale, height, massing, alignment, materials, use and landscaping (for example, screen planting).	The Applicant has considered the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution of conservation to communities. As presented in section 8.9 of Chapter 8 (Cultural Heritage) of the ES, the assessment of likely significant effects details how, although there would be some adverse impacts of the Project on heritage assets (see the response to NNNPS paragraph 5.131 below), the operational phase of the Project would lead to beneficial effects on the setting of cultural heritage assets, including: • A new amenity parking area and footway access for the Scheduled Monument and Grade II* listed Countess Pillar (03-0006) and the associated Grade II* listed Alms Table (03-0007) will enable better access to the site. This would be a minor beneficial impact on these high value assets, resulting in a moderate beneficial effect. • The Scheduled Monument of St Ninian's (03-0005), including the buried remains of the pre-Conquest monastic site and the deserted Medieval settlement, and the Grade II listed Church of St Ninian (03-0012) built in 1660 on the Medieval site are both beyond the Order Limits to the north. The church is screened by surrounding trees from the Project, although part of the larger surrounding landscape of the Scheduled

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		area of St Ninian's falls within the ZVI. A new accommodation overbridge will be constructed at the eastern end of this scheme, but at a far distance from the Ninekirks site and would not alter the contribution of the setting towards the significance of these assets. A new priority left-in/left-out junction will enable access to the road leading to the car park and PRoW 311/013 to St Ninian's Church from the A66 eastbound carriageway. The existing car park will be relocated within the site. This will improve accessibility to the St Ninian's site which will have a minor beneficial impact resulting in a moderate beneficial effect on both the listed church and the Scheduled site at St Ninian's. With regards the design of the Project, earthworks have been refined at specific locations throughout the scheme to allow them to better integrate with the alignment, junctions, and their surroundings. This has resulted in reductions to the visual intrusion of the Project within the landscape and allows for additional areas of land to be returned to agricultural use following construction. Around Long Marton, the change in alignment during design development has removed the potential negative impacts on the Roman camp, 350m east of Redlands Bank, Scheduled Ancient Monument. The Project has demonstrated that enhancement of heritage assets has been achieved where possible. Please see update to paragraph 5.124 and 5.126-127 above. The Project Design Principles (PDP) document was revised during the course of the Examination, at Deadline 3 (Document Reference 5.11, REP3-040) and at Deadline 6 (Document Reference 5.11, REP6-015). The PDP sets out priniples which contribute to the character and distinctiveness of historic assets, including those relating to scale, height, massing, alignment, materials use and landscaping. The Heritage Mitigation Strategy has been the subject of discussions with Historic England during the course of the Examination as summarised at paragraph 6.5.53 of the Closing Submissions [Document Reference 7.45, REP8-074]. In response to comments received from Historic England direct to the Applicant, the updated EMP at Deadline 8 [Document Reference 7.18, REP8-072] incorporates a number of edits and amendments aimed at clarifying the process through which the heritage mitigation will be refined, determined and ultimately consulted upon and approved.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.131	When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset's conservation. The more important the asset, the greater the weight should be. Once lost, heritage assets cannot be replaced, and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Given that heritage assets are irreplaceable, harm or loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II Listed Building or a grade II Registered Park or Garden should be exceptional. Substantial harm to or loss of designated assets of the highest significance, including World Heritage Sites, Scheduled Monuments, grade I and II* Listed Buildings, Registered Battlefields, and grade I and II* Registered Parks and Gardens should be wholly exceptional.	As set out in the responses to NNNPS paragraphs 5.124 - 5.130 above, the Applicant has considered the Project's impact upon the heritage assets which sit within the DCO Order Limits. It is acknowledged that the A66 has considerable historic importance, as evidenced by Roman remains and the Scheduled Monuments along the route, particularly the fortifications. Two Cultural Heritage resources are common to more than one scheme study area - the Roman road running between Scotch Corner and Penrith (Brougham) via Bowes identified by Margary as RR82 (00-0001) (Margary, 1957) and its Post Medieval turnpiked successor (00-0002). Whilst individual sections of these will see impacts from the Project none are deemed to be significant following implementation of mitigation and the Roman road and its turnpiked successor are not predicted to be subject to significant effects. Details of all heritage assets are presented in Chapter 8 (Cultural Heritage) of the ES. For the purposes of the cultural heritage assessment, the construction phase is defined as the temporary activities involved in building the Project, and the subsequent permanent presence of the Project once constructed. The operational phase comprises the situation when the Project is being used by traffic. Within the CftP (Document Reference 2.2, APP-008) it is recognised that both the construction phase and the operation will have impacts, both beneficial and adverse, upon designated and non-designated heritage assets. All preliminary effects are reported as being either significant or not significant after an assessment of the effectiveness of the design and mitigation measures (i.e. the residual effect). No significant effects are predicted to result from the operation of the Project upon any heritage assets identified. The operational effects from the Project on heritage resources have been considered and as a result the proposed design incorporates screening and noise barriers which serve to mitigate as far as possible the effects on heritage resources. Details are presented in Chapter 10 (Landscape and Visual) and Chapter 12 (Noise and Vibration). In summary, there will be no substantial harm to or loss of any heritage assets as a result of the Project. With reference to the heritage assessment and the effect of the proposed development on Rokeby Park Registered Park and Garden ('RPG') the analysis of the impact of the proposed development on the significance of this designated heritage asset (as required by paragraph 5.131 and 5.132 of the NNNPS) is set out in the ISH1 Note [Document Reference 7.2, REP1-

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		006] at pages 11 to 12 and confirmed in ISH1 by Historic England in oral submissions. One of the principal conclusions drawn, in relation to these paragraphs, is that as a result of the Project there will be no substantial harm to or loss of any heritage assets. Furthermore if the Blue Option had been taken forward, although it would not have caused substantial harm, it would lead to a partial loss as it would have a direct physical effect on the Rokeby Park RPG. This identified partial loss, associated with the blue route, would have required more detailed analysis against paragraph 5.131 and 5.132. Also see update to 5.126-127 above.
5.132	Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset, the greater the justification that will be needed for any loss.	The Applicant has fully considered the potential impact of the Project on designated and non designated heritage assets. Section 8.9 of Chapter 8 (Cultural Heritage) of the ES presents the assessment of likely significant effects. It is during the construction phase and operational phase that some adverse effects on heritage assets are sustained (as summarised in the response to NNNPS paragraph 5.131 above). During construction there is the potential for the presence of as-yet unknown archaeological remains that would have previously been substantially or wholly removed. However, where the Project requires excavation below the existing ground surface within previously undeveloped areas archaeological remains may exist. Construction activity, including movements of plant, temporary lighting and temporary compounds, would take place within the setting of listed buildings, conservation areas and upstanding non-designated heritage resources within the study area. These are detailed in ES Appendix 8.10 Impact Assessment Table (Document Reference 3.4, REP4-008). However, these works would be temporary, of limited duration and reversible. No significant impacts are expected to arise in the operational phase. Essential mitigation of construction impacts would include measures that reduce the likelihood of physical damage as well as changes to the setting that affect the significance of the heritage assets. An investigation of archaeological remains prior to construction and the analysis of artefacts and publication of results following the construction would minimise the direct impacts on archaeological remains. The type and location of mitigation required will be agreed with Historic England and the Cumbria, County Durham and North Yorkshire Archaeological Officers by means of an Historic Environment Mitigation Strategy, to be submitted as part of the EMP.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		The operational phase of the Project could lead to beneficial effects as set out at 5.130 above, and adverse effects on the setting of cultural heritage assets through traffic noise and the visibility of moving vehicles on the road. The operational effects from the Project on heritage resources have been considered and as a result the proposed design incorporates screening and noise barriers which serve to mitigate as far as possible the effects on heritage resources. These proposals are presented in Chapter 10 (Landscape and Visual) and Chapter 12 (Noise and Vibration). The need for the Project has been established and set out in the CftP (Document Reference 2.2, APP-008). Please see update to paragraph 5.131 above.
5.133	Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm, or alternatively that all of the following apply: • the nature of the heritage asset prevents all reasonable uses of the site; and • no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and • conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and • the harm or loss is outweighed by the benefit of bringing the site back into use.	The Applicant has assessed the impact of scheme design on heritage assets within Chapter 8 (Cultural Heritage) of the ES. The operational phase of the Project could lead to beneficial and adverse effects on the setting of cultural heritage assets as well as the assets themselves, through traffic noise and the visibility of moving vehicles on the road. There will be no substantial harm/total loss of designated heritage assets as per the ES Chapter 8 (Cultural Heritage) Assessment. Chapter 3 of the CftP (Document Reference 2.2, APP-008) summarises the transport, economic, environmental and social benefits that the Project will deliver. With reference to the heritage assessment and the effect of the proposed development on Rokeby Park Registered Park and Garden ('RPG') the Closing Submissions [Document Reference 7.45, REP8-074] at paragraph 4.2.3 confirm that as there will be no substantial harm to or loss of any heritage assets as a result of the Project paragraph 5.133 was not considered in any greater detail in relation to this matter during the course of the Examination. Please see update to paragraph 5.126-5.127 above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.134	Where the proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.	This Applicant has fully considered the impact of the Project on designated and non-designated heritage assets during the construction and operation phase. The CftP (Document Reference 2.2, APP-008) and NNNPS paragraph 2.9 above summarises the transport, economic, environmental and social benefits that the Project will deliver. The Applicant has avoided substantial harm through making changes to the design or the route alignment where appropriate. For those parts of the route that effect designated areas, a route alignment and sensitive design is proposed which respects the character and quality of these designations and their purpose. Section 8.9 of Chapter 8 (Cultural Heritage) of the ES presents the assessment of likely significant effects of the Project. This is confined to during the construction phase, adverse impacts during operation will be no different to the permanent impacts that have occurred as part of the construction phase, the findings of which are summarised in the response to NNNPS, paragraph 5.131 above. As presented in the Assessment of likely significant effects of Chapter 8 (Cultural Heritage) of the ES, permanent adverse effects after mitigation will impact upon the following assets: • Brougham Roman fort (Brocavum) and civil settlement and Brougham Castle Scheduled Monument and Brougham Vicus Roman settlement site Scheduled Monument • The ring ditches at Brougham as recorded on the Cumbria Historic Environment Record • Two areas of peat deposits likely associated with nearby palaeochannels • An Enclosure and other features north-west of Kirkby Thore identified during trial trenching • A Prehistoric round house drip gully and associated features identified during trial trenching • Warcop Roman Camp Scheduled Monument • Sandford Moor Barrows group, should any evidence of them remain in situ • A group of three Grade II listed buildings, Stone Bridge Farmhouse, Loose boxes, 5 metres east of Stone Bridge Farmhouse, and linked farm buildings and gin-gang attached to south of Stonebridge Farmhouse • Roman Fort and Prehistoric enclosed settlement 400m west of Carkin Moor Farm Scheduled Monument

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Additional operational significant effects expected include: • A new amenity parking area and footway access for the SM and Grade II* listed Countess Pillar and the associated Grade II* listed Alms table will offer better access to these assets. This results in a moderate beneficial effect to these assets overall. A new footway to the site of the Countess Pillar and associated Alms Table is proposed on the site of the former Llama Kama Kafe, as a new amenity parking area. This will provide better access to the site for visitors, representing a beneficial effect to both resources. • The SM of St Ninian's and the Grade II listed Church of St Ninian are situated beyond the scheme Order Limits to the North. A new accommodation overbridge will be constructed at a far distance from the Ninekirks site and it would not alter the contribution of the setting towards the significance of these heritage assets. Accessibility will be improved to the St Ninian's site which will result in a moderate beneficial effect on both heritage assets. New parking facilities are proposed, and this will be made more accessible via the creation of a new left-in / left-out junction, which will also make the turn-in easier to find. • A group of three Grade II listed buildings (high value), Stone Bridge Farmhouse, Loose boxes, 5 metres east of Stone Bridge Farmhouse impacted by increase in noise and busyness of increased traffic volume. Although it is expected to result in significant permanent adverse effects to the three heritage assets the overall impact of the Bowes Bypass scheme is considered to result in less than substantial harm to the significance of designated heritage assets and is outweighed by the public benefits of the scheme as set out below. The operational effects from the Project on heritage resources have been considered and as a result the proposed design incorporates screening and noise barriers which serve to mitigate as far as possible the effects on heritage resources. These proposals are presented in Chapter 8 (Cultural Heritage) Chapter 10 (Landscape and Visual) and Chapter 12 (Noise and Vibration). The assessment of heritage assets has found that impacts equate to less than substantial harm and where harm does exist it is outweighed by the public benefits, as set out in the CftP (Application Document 2.2). To conclude, the assessment of heritage assets has found that impacts equate to less than substantial harm and where harm does exist it is out weighted by the public benefits, as set out in the CftP (Application Document 2.2).

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		The Project will bring many benefits and will reduce congestion and improve the reliability of people's journeys between the M6 at Penrith and the A1(M) Scotch Corner and nationwide. Freight and transport businesses will benefit from improvements to journey time reliability across the A66. Faster journeys lead to less wasted time idling and waiting for congestion to clear, freeing time for more productive activities that produce economic value, or leisure activities. The increased capacity of the A66 and improved journey times will stimulate the local economy as people travel to employment centres and to community, hospitality and retail facilities. All the schemes proposed to be dualled will have some level of betterment for WCH (formerly described as NMUs) compared with the provision on the existing single carriageway lengths. For most schemes, this includes a parallel shared multi-user route segregated from the dual carriageway. This parallel provision is in the form of either a new path adjacent to the dualling or has been provided along the verge of the old de-trunked A66, where it remains. Detail on the WCH provision for each scheme is provided in Chapter 6 of this document and set out in detail within the WCH Design Proposals (Application Document 2.4). The project will Improve connectivity for people living and working nearby and create better facilities and east-west connectivity for cyclists and pedestrians. It also improves connectivity between the key employment areas of Cumbria, Tees Valley, Durham and Tyne and Wear. Chapter 4 of this document further provides the connectivity benefits of the Project. The Project improvements represent a significant opportunity to boost east-west connectivity and drive economic growth. Full detail on the economic benefits of the Project is provided in Chapter 5 of the CftP (Document Reference 2.2, APP-008). The A66 improvements are expected to boost connectivity in around 35% of the Government's priority areas (defined by the Levelling Up Fund Index), with total economic efficiency benefits of over £500m as a result of additional capacity and reduced delay, alongside over £62m of wider economic benefits. In summary, the overall impact of the Project on heritage assets is considered to result in less than substantial harm to the significance of designated heritage assets and is outweighed by the public benefits of the scheme as evidenced above and documents referenced. Please see update to paragraph 5.124 and 5.126-127 above.

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5.135	Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. The Secretary of State should treat the loss of a building (or other element) that makes a positive contribution to the site's significance either as substantial harm or less than substantial harm, as appropriate, taking into account the relative significance of the elements affected and their contribution to the significance of the Conservation Area or World Heritage Site as a whole.	The Project does not impact upon any World Heritage Sites (WHS) including the Lake District national Park World Heritage Site. The Project impacts upon Conservation Areas, such as Bowes Bypass, where it runs through the Conservation Area or indirectly at Penrith Conservation Area where the route runs within 500m from the Conservation Area (M6 Junction 40 to Kemplay Bank) However, there will be no loss of buildings or other elements as a result of the Project. Where the Project is going to impact upon a Conservation Area, the type and location of mitigation required will be agreed with Historic England and the Cumbria, County Durham and North Yorkshire Archaeological Officers by means of an Historic Environment Mitigation Strategy, to be submitted as part of the EMP (Application Document 2.7).
5.136	Where the loss of significance of any heritage asset has been justified by the applicant based on the merits of the new development and the significance of the asset in question, the Secretary of State should consider imposing a requirement that the applicant will prevent the loss occurring until the relevant development or part of development has commenced.	The Project has presented in section 8.9 of Chapter 8 (Cultural Heritage) of the ES the Assessment of likely effects. Two Cultural Heritage resources are common to more than one scheme study area - the Roman road running between Scotch Corner and Penrith (Brougham) via Bowes. Whilst individual sections of these will see impacts from the Project none are deemed to be significant following implementation of mitigation and the Roman road and its turnpiked successor are not predicted to be subject to significant effects. A new amenity parking area and footway access for the Scheduled Monument and Grade II* listed Countess Pillar (03-0006) and the associated Grade II* listed Alms Table (03-0007) will enable better access to the site. The Scheduled Monument of St Ninian's (03-0005), including the buried remains of the pre-Conquest monastic site and the deserted Medieval settlement, and the Grade II listed Church of St Ninian (03-0012) are both beyond the Order Limits to the north. The church is screened by surrounding trees from the Project, although part of the larger surrounding landscape of the Scheduled area of St Ninian's falls within the ZVI. A new accommodation overbridge will be constructed at the eastern end of this scheme, but at a far distance from the Ninekirks site and would not alter the contribution of the setting towards the significance of these assets. A new priority left-in/left-out junction will enable access to the road leading to the car park and PRoW 311/013 to St Ninian's Church from the A66 eastbound carriageway. The existing car park will be relocated within the site.

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		The EMP (Application Document 2.7) sets out the post consent determinations that are required to be made before the Project can proceed. It is required for the Project and the process by which those determinations in relation to that environmental management are to be made. It replaces the "standard" pre-commencement requirements that are typically included in National Highways' development consent orders. It does not abandon the substance of those provisions; instead, they are provided through the EMP and compliance with the substance of the EMP and the process through which post consent determinations are to be made is secured through streamlined provisions of the DCO. The Project opening year will be 2029. Construction will commence prior to this, and heritage assets will not be impacted until the construction phase begins in January 2024. Assets which will be impacted upon will remain in situ until the construction phase begins and proposed mitigation measures will be implemented. The Heritage Mitigation Strategy has been the subject of discussions with Historic England during the course of the Examination as summarised at paragraph 6.5.53 of the Closing Submissions [Document Reference 7.45, REP8-074]. In response to comments received from Historic England direct to the Applicant, the updated EMP at Deadline 8 [Document Reference 7.18, REP8-072] incorporates a number of edits and amendments aimed at clarifying the process through which the heritage mitigation will be refined, determined and ultimately consulted upon and approved.
5.137	Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.	The Project has considered opportunities to enhance or better reveal the significance of heritage assets by new development. Section 8.9 of Chapter 8 (Cultural Heritage) of the ES presents the opportunities to enhance heritage assets impacted by the Project. Additional operational significant effects expected include: • New footway and parking area for the Countess Pillar Scheduled Monument and associated Alms Table • Improved junction and parking area for St Ninian's aChurch Scheduled Monument and Listed Building. Therefore, in conclusion, the Project where possible makes a positive contribution to heritage assets.

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		One of the mattes considered during the course of the Examination was the assessment against the impacts of the Project on the Lake District World Heritage Site, as summarised at paragraph 6.5.52 of the Closing Submissions [Document Reference 7.45, REP8-074], as follows. "The Applicant provided detailed comments at pages 36 to 47 of the Response to WRs by Interested Parties [Document Reference 7.7, REP2-016] and addressed this matter under agenda item 7 of ISH3, as summarised in the ISH3 Note [Document Reference 7.30, REP5-024]. The A66 Project will give rise to no physical or setting effects to heritage resources within or the outstanding universal value ('OUV') of the World Heritage Site, including from any increased levels of traffic. The Applicant's consideration of this issue has utilised relevant UNESCO and HE guidance and demonstrates that the A66 Project would have no negative impact on the OUV of the World Heritage Site.
Landscape and visual impacts		
5.144 – 5.146	Where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment. A number of guides have been produced to assist in addressing landscape issues. The landscape and visual assessment should include reference to any landscape character assessment and associated studies, as a means of assessing landscape impacts relevant to the proposed Project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England. The applicant's assessment should include any significant effects during construction of the Project and/or the significant effects of the	The Applicant has undertaken an assessment of the likely significant landscape and visual impacts within the ES (Application Documents 3.2-3.4). In terms of reference material, paragraph 10.7.29 of Chapter 10 (Landscape and Visual Impact Assessment) of the ES lists all landscape character assessments and associated studies considered as follows: a) Cumbria Landscape Character Guidance and Toolkit (CCC, 2011) b) County Durham Landscape Character Assessment (DCC, 2008) c) Lake District National Park Landscape Character Assessment and Guidelines (Chris Blandford Associates, 2008) d) North Pennines AONB Management Plan 2019-24 (North Pennines AONB Partners, 2019) e) North Yorkshire & York Landscape Character Assessment (NYCC, 2011) Section 10.6 of Chapter 10 (Landscape and Visual Impact Assessment) of the ES includes an assessment of the existing baseline conditions and section 10.10 assesses the likely significant landscape and visual impacts of the Project both during construction and operation. The approach to this assessment follows the Scoping Report (June 2021)

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	completed development and its operation on landscape components and landscape character (including historic landscape characterisation). The assessment should include the visibility and conspicuousness of the Project during construction and of the presence and operation of the Project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation.	and the methodology set out in *DMRB LA 107, Landscape and Visual Effects* (National Highways, 2020). To avoid double counting of effects, the assessment of landscape and visual effects during the construction phase identifies and assesses only temporary effects which arise as a result of activities and elements that are unique to the construction phase. For example, the permanent removal of built form or vegetation is assessed as part of the operational phase, but the works such as the disruption cause by construction plant used during demolition and site clearance are assessed as part of the construction phase. A further example would be proposed landforms or structures, which would form permanent features and have been assessed as part of the operational phase, but the earthworks required to form them, including excavation, aggregate, earth movements and stock piling are assessed as construction effects During construction the potential impacts on views and visual amenity would be caused by construction plant used during demolition and site clearance, earthworks, including excavation, aggregate, earth movements, stock piling. Night-time lighting (year round) is assessed as a construction effect. From an operational perspective, potential impacts on views and visual amenity are likely to occur as a result of the loss of or changes to existing landscape features or characteristics, or the addition of new infrastructure or features within the landscape or view. With respect to the design changes proposed by the Applicant (of which 22 were accepted into the Examination) the ES Addendum assesses the potential for the introduction of new or different likely significant effects upon the environment when compared to Chapter 10 of the ES.
5.147-5.148	Any statutory undertaker commissioning or undertaking works in relation to, or so as to affect land in a National Park or Areas of Outstanding Natural Beauty, would need to comply with the respective duties in section 11A of the National Parks and Access to Countryside Act 1949 and section 85 of the Countryside and Rights of Way Act 2000	The Applicant has given due consideration to the Project's impact upon National Parks and Areas of Outstanding Natural Beauty ('ANOBs'). The Appleby to Brough scheme is partially located within the North Pennines AONB in a section to the north of Warcop and in a length to the east of Warcop. Paragraph 10.7.39 of section 10.7 (Baseline Conditions) of Chapter 10 (Landscape and Visual Impact Assessment) of the ES outlines the consideration given to The National Parks and Access to Countryside Act 1949 and paragraph 10.7.40 refers to the Countryside and Rights of Way Act 2000.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	For significant road widening or the building of new roads in National Parks and the Broads applicants also need to fulfil the requirements set out in Defra's English national parks and the broads: UK government vision and circular 2010 or successor documents. These requirements should also be complied with for significant road widening or the building of new roads in Areas of Outstanding Natural Beauty.	The Project complies with the duties by improving access to key tourist and recreation destinations including the AONB to the north of Warcop, encouraging more visits to these destinations and more tourist related income for local businesses. Incorporating shared cycle/footways will benefit local people and visitors to the AONB for active travel to work as well as recreational use. Defra advises in Circular 2010 that major development should not take place within a National Park except in exceptional circumstances. The Project is expected to provide wider network resilience benefits, allowing for other routes on the adjacent strategic and local road network to recover to normal operating conditions faster after an incident. Overall access for walking, horse riding or cycling will be improved with the introduction of approximately 33km of additional walking, horse riding or cycling route having been brought into the scope of the Project. All schemes have some level of betterment compared with the provision on the existing single carriageway. The overall magnitude of noise reductions outweighs noise uplifts, meaning the Project will provide a net environmental benefit, in part due to the A66 bypassing properties on the existing route but also encouraging traffic to divert on to the A66 from adjacent minor roads. As presented in section 10.7 (Baseline Conditions) of Chapter 10 of the ES, all AONB planning guidelines have been consulted in addition to engagement with relevant stakeholders. The Project Design Principles include a suite of mitigation measures to be incorporated into the design to minimise impact the Project on the AONB and its setting. These are specifically set out in Table 4-8 and 4-9 of the Project Design Principles, relating to the Appleby to Brough and Bowes Schemes that both have minor encroachments within the AONB, Although the Project Design Principles document was revised during the course of the Examination, at Deadline 3 (Document Reference 5.11, REP3-040) and at Deadline 6 (REP6-015) those Principles relevant to the design within or affecting the AONB have not been revised from the original version submitted with the Application (Document Reference 5.11, REP8-061).
5.149	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	The Applicant has fully considered the receiving environment and the Project's impacts upon it. Section 10.7 (Baseline Conditions) of Chapter 10 (Landscape and Visual Impact Assessment) of the ES describes in full the existing landscape and nature of it, with section 10.8 identifying

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	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.	the potential impacts the Project would have on the landscape, prior to mitigation being in place. Section 10.9 sets out the embedded and essential mitigation and enhancement measures. The purpose of landscape mitigation is to avoid, minimise, restore or offset potential landscape and visual impacts of the Project. The principal means of mitigation is embedded in the design of each scheme through considered alignment and associated earthworks to achieve the best fit with topography and sensitive landscape features. Additional mitigation is described in Appendix 10.7 (Landscape Mitigation Schedule) of the ES. To conclude, the Applicant has taken into consideration the receiving environment and the landscape and visual impacts of the Project and has proposed reasonable mitigation where possible and appropriate to the existing nature of the landscape, thereby meeting the aim in NNNPS paragraph 5.149. Please see update to paragraph 5.144-5.146
5.150-5.151	Great weight should be given to conserving landscape and scenic beauty in nationally designated areas. National Parks, the Broads and Areas of Outstanding Natural Beauty have the highest status of protection in relation to landscape and scenic beauty. Each of these designated areas has specific statutory purposes which help ensure their continued protection and which the Secretary of State has a statutory duty to have regard to in decisions. The Secretary of State should refuse development consent in these areas except in exceptional circumstances and where it can be demonstrated that it is in the public interest. Consideration of such applications should include an assessment of: • the need for the development, including in terms of any national considerations,	The Applicant recognises that great weight is given to conserving landscape and scenic beauty in nationally designated areas. Please note a full justification for scheme development within an AONB is presented in the CftP (Document Reference 2.2, APP-008). The following schemes impact upon the North Pennines AONB: Appleby to Brough There are limited incursions into the AONB in two locations - to the north of Warcop (referred to as the central length of 2570m in length) and to the east of Warcop (referred to as the eastern length of 1205 m in length). The assessment against NN NPS policies for these incursions into the AONB are set out in section 6.5 of the Case for the Project (Document Reference 2.2, APP-008) Bowes Bypass – there is a minor incursion into the western extents of the AONB associated with a small length of embankment and road widening (333 m) to the western outskirts of Bowes. The assessment against NN NPS policies for this incursion into the AONB are set out in section 6.6 of the Case for the Project (Document Reference 2.2, APP-008).

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	and the impact of consenting, or not consenting it, upon the local economy; • the cost of, and scope for, developing elsewhere, outside the designated area, or meeting the need for it in some other way; and • any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.	The incursions into the AONB associated with schemes Appleby to Brough and 7 require an assessment against the policy tests for development located in a nationally designated AONB as set out in paragraphs 5.151 to 5.153 of the NNNPS. The full assessment and findings in relation to the policy tests are discussed in chapter 6 of the CtfP (Document Reference 2.2, APP-008) and the findings are summarised below in relation to each element of the policy: Appleby to Brough The principal findings against each of the policy elements of paragraph 5.151 are: **i) Need for the development, including in terms of any national considerations, and the impact upon the local economy** • At a regional level supporting the economic growth objectives of the Northern Powerhouse and Government levelling up agenda. The Project supports and delivers against the aspirations and objectives of relevant plans and strategies, including transport and economic strategies at a regional level, such as the TfN Strategic Transport Plan 2019, Tees Valley Combined Authority's Strategic Economic Plan (The Industrial Strategy for Tees Valley) 2016-2026, Tees Valley Strategic Transport Plan 2020-2030 and the Cumbria Strategic Economic Plan 2014-2024. Section 3.7 of this document above contains a detailed review of regional and county policy and an assessment of the Project's conformity with this policy. • Improving strategic regional and national connectivity, particularly for hauliers and for freight. Heavy goods vehicles account for around a quarter of all traffic on the road and any delays to journeys can have an extremely negative effect on business and commerce, including lost working time and missed shipment slots. • The monetised economic impact of the Project in terms of: road safety and reduction in accidents, connectivity, capacity and economic' growth and Increasing reliability (as set out at Chapter 5 of the Case for the Project (Document Reference 2.2, APP-008)

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		• Ensuring the improvement and long-term development of the SRN through providing better national connectivity including freight. • Maintaining and improving access for tourism served by the A66. • At a local level addressing issues of severance, journey delays and road safety issues and improving access to services and jobs for local road users and the local community. • Improving access to key tourist destinations such as the North Pennines and Lake District. **Impact of not consenting the development, including upon the local economy:** If the existing A66 route is not consented and improved, it will constrain national and regional connectivity, due to its strategic importance as an east-west connection for freight and other vehicle movements and may threaten the transformational growth envisaged by the Northern Powerhouse initiative and the achievement of the Government's 'Levelling Up' agenda. In addition, the impact of not consenting the Project on the local economy would be that local benefits (some of which are described above) could not be delivered to the same level, and that the objectives, for this Project would not be achieved, to the same degree. ii) **Cost and scope: for, developing elsewhere, outside the designated area** The cost of, and scope for, developing elsewhere, outside the designated AONB, has been considered in section 6.5 of the Case for the Project, through an assessment of the routes within the AONB compared with alternative alignments outside the AONB for both the central and eastern length. The findings from this assessment is that although there is scope to develop a route outside the AONB for both the central and eastern lengths the development of these route would have significant disadvantages compared to the promoted route (that form part of the DCO application), particularly in relation to environmental criteria (including landscape and visual impacts) and stakeholder and public considerations. The drawbacks of this alternative are considered to be "exceptional circumstances" in favour of the promoted lengths of the route. In addition, the comparative assessment has been demonstrated that the promoted lengths of the route, compared to the alternative outside the AONB, are clearly in the public interest.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Meeting the Need in Some Other Way'. It has been demonstrated that the need for the project, in terms of delivering the greatest level of strategic benefits as well as making a significant contribution to the Northern Powerhouse economic growth agenda and Levelling Up agenda could only be delivered through the A66 dualling and not in 'some other way'. The clear demonstration that need cannot be met in some other way, along with the drawbacks of the alternatives (wholly outside the AONB), the limited incursion into the AONB associated with the preferred routes (totalling approx. 31 ha), taken with the benefits of the scheme and the Project as a whole, are considered to be 'exceptional circumstances' in favour of the promoted route and is clearly in the public interest. **iii) Effect on the environment, the landscape and recreational opportunities:** It has been evidenced (in the ES (Application Document 3.2) that, whilst there are residual significant adverse effects on **the environment** as a result of the scheme, National Highways has sought to avoid such effects in the first instance and moderate them wherever feasible, including through making changes to the design where appropriate. The principal findings from the **landscape** assessment is that although this scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features across the designated landscape. It has been demonstrated in the ES (chapter 10) (Document Reference 3.2, APP-053) there are no significant impacts on the stated special qualities of the AONB by the Project. The assessment of detrimental effects on the AONB are assessed as slight both during construction and operation. The effects are moderated through a sensitive design to 'reflect the existing alignment and vegetated character of the A66 in proximity to the AONB boundary'. As a consequence, the ES has concluded that by year 15 of operation 'the perception of the scheme would reflect that of the existing A66 and the effect to the Foothills character area would be neutral (no change) due to the maturing replacement roadside screen planting and intervening topography and woodland'. In terms of **recreational opportunities**, although there are impacts such as severance of footpaths there is the potential to mitigate these impacts and provide improvements to the WCH network, as reported in the Walking, Cycling and Horse Riding Design Proposals (Document Reference 2.4, APP-010). There is also the

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		potential for enhancement of recreational walking and cycling routes through new provision of a shared cycleway/footway on the north side of the dual carriageway. Overall taking all the findings from the assessments into account for each element of paragraph 1.151 demonstrates that there are "exceptional circumstances" in favour of the promoted route involving the two incursions into the AONB within this scheme and they are also in the public interest. Bowes Bypass It has been demonstrated through an assessment for each element of paragraph 5.151, as set out in section 6.6 of the Case for the Project (Document Reference 2.2, APP-008) that there are exceptional circumstances for the very limited incursion, of the Project within the NP AONB and that the proposed development is in the public interest. The exceptional circumstances relate to the very limited nature of the incursion into the AONB, which would be of a maximum of 32 metres and an average of 15 metres from the southern boundary of the AONB for a length of 333 metres. Furthermore, the land required for the development within the AONB is already characterised as being part of the A66 corridor as operational land associated with the A66, providing grass verge to the main carriageway. In operation, the alignment of the scheme would reflect that of the existing A66, such that the spatial relationship between the A66 and the AONB would remain. By year 15 of operation, the perception of the scheme would reflect that of the existing A66 and the effect to the Moor and Fringe character area would be neutral (no change), in addition to no change to the special qualities. As set out above in relation to the update for 5.144-5.146 for one of the design changes proposed (that was accepted into the Examination) for DC21 within Scheme 6 – there is a change in the effect on the AONB during construction from slight adverse to moderate adverse, which is significant (as reported in the ES Addendum [Document Reference 8.4, CR1-017]). This change in significance, which relates to a temporary construction related effect, does not materially change the conclusions in relation to the conformity with this paragraph as set out above, as it does not change the principal findings from the **landscape** assessment. This finding is that that although the scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features across the designated landscape and this moderate temporary construction related effect, as reported in the ES Addendum, would not change this finding.

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		Also please see update for paragraphs 5.147-5.148
5.152	There is a strong presumption against any significant road widening or the building of new roads and strategic rail freight interchanges in a National Park, the Broads and Areas of Outstanding Natural Beauty, unless it can be shown there are compelling reasons for the new or enhanced capacity and with any benefits outweighing the costs very significantly. Planning of the Strategic Road Network should encourage routes that avoid National Parks, the Broads and Areas of Outstanding Natural Beauty.	Sections 6.5 and 6.6 of the Case for the Project (Application Document: 2.2) sets out the assessment of costs against benefits in relation to the incursions into the AONB within the Appleby to Brough scheme and the Bowes Bypass scheme respectively. Weighing against the identified costs set out in these sections, alongside the planning balance set out in section 7.5 of the Case for the Project, has demonstrated the wider range, scale and number of benefits that this scheme and the Project would provide, when compared with the costs. The quantity of adverse effects at a scheme and Project level on the environment would reduce as the scheme progresses from construction to operation, such that at Year 15 of operation, some effects would be removed entirely due to the maturation of mitigation measures, such as planting for visual screening and habitat creation. In contrast to the majority of adverse effects occurring on a short-term basis during construction, the significant beneficial effects of the scheme are most numerous during the operation stage of the scheme, creating permanent benefit. It would, as a highways scheme, provide fundamental benefits to the road network through improving road safety; upgrading infrastructure in line with modern standards; increasing road capacity; and considerably improving the resilience of the route. These benefits of the scheme extend beyond addressing the immediate issues facing road users, by providing the infrastructure identified as being necessary to support economic growth and meet strategic growth ambitions. Finally, through high quality embedded mitigation and enhancement measures, there would be some benefits of the scheme to the surrounding environment which would represent an improvement compared to the existing conditions. This includes permanent beneficial effects to non-road users and local communities through the provision of a dedicated walking and cycling route to benefit local communities as well as visitors to the area. Furthermore, the Project will maximise biodiversity through the environmental mitigation proposed. Given the permanent nature of the suite of benefits identified, and the demonstrable need for the scheme, it is considered that the benefits of the scheme significantly outweigh both the costs of the scheme and the costs of no intervention, at both a scheme and Project level. It is therefore concluded that there is conformity with Paragraph 5.152 of the NPS. As set out above in relation to the update for 5.144-5.146 for one of the design changes proposed (that was accepted into the Examination) for DC21 within Scheme 6 – there is a

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		change in the effect on the AONB during construction from slight adverse to moderate adverse, which is significant (as reported in the ES Addendum [Document Reference 8.4, CR1-017]). This change in significance, which relates to a temporary construction related effect, does not materially change the conclusions in relation to the conformity with this paragraph as set out above, a s it does not change the principal findings from the landscape assessment. This finding is that that although the scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features across the designated landscape and this moderate temporary construction related effect, as reported in the ES Addendum, would not change this finding. Also please see update for paragraphs 5.147-5.148
5.153	Where consent is given in these areas, the Secretary of State should be satisfied that the applicant has ensured that the Project will be carried out to high environmental standards and where possible includes measures to enhance other aspects of the environment. Where necessary, the Secretary of State should consider the imposition of appropriate requirements to ensure these standards are delivered.	The Applicant has set out how the Appleby to Brough scheme will be carried out to high environmental standards. National Highways will ensure that the Project will be carried out to high environmental standards though a commitment to a set of design principles, as set out in the Project Design Principles (Document Reference 5.11, REP8-061) There is also a commitment to high environmental standards including measures to enhance the environment through adherence to the requirements set out within the EMP (Application Document 2.7). The inclusion of mixed species blocks of tree planting at Dyke Nook would contribute to the reduction in the linearity of the roadside planting and create a 'glade' environment. The species rich grassland at the detention ponds would provide additional variations that are both ecologically and visually diverse. New mixed species woodland blocks and hedgerow planting would be introduced as appropriate to create new field boundaries to visually screen the scheme. New planting areas would link with existing woodland and hedgerows to unify and link habitats in the area. The offline section, northwest of Warcop village and army camp, would bypass Wheat Sheaf Farm, Walk Mill and the other outlying buildings associated with Toddygill Hall. The route remains offline as it approaches Brough bypassing West View, Mains House, the embankments, and detention ponds of the off-line section, with south facing slopes that would be planted with species rich grasslands that are suitable for invertebrate habitat. These areas would provide additional ecological benefits and the mixed species woodland would provide seasonal variation, screening, and would break the linearity of the route.

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		Adherence to the commitments and requirements set out within the Project Design Principles and the EMP ensure conformity with the requirements of policy 5.153 *"for high environmental standards, including measures to enhance other aspects of the environment".* As set out above in relation to the update for 5.144-5.146 for one of the design changes proposed (that was accepted into the Examination) for DC21 within Scheme 6 – there is a change in the effect on the AONB during construction from slight adverse to moderate adverse, which is significant (as reported in the ES Addendum [Document Reference 8.4, CR1-017]). This change in significance, which relates to a temporary construction related effect, does not materially change the conclusions in relation to the conformity with this paragraph as set out above, as it does not change the principal findings from the **landscape** assessment. This finding is that that although the scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features across the designated landscape and this moderate temporary construction related effect, as reported in the ES Addendum, would not change this finding. Also please see update for paragraphs 5.147-5.148
5.154-5.155	The duty to have regard to the purposes of nationally designated areas also applies when considering applications for Projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such Projects should be designed sensitively given the various siting, operational, and other relevant constraints. This should include Projects in England which may have impacts on designated areas in Wales or on National Scenic Areas in Scotland. The fact that a proposed Project will be visible from within a designated area should not in itself be a reason for refusing consent.	It has been concluded in Chapter 10 (Landscape and Visual Impact Assessment) of the ES (Application Documents 3.2-3.4) that there are no significant impacts on the stated special qualities of the AONB by the Project, and at year 15 of operation "*the perception of the scheme would reflect that of the existing A66 and the effect to the Foothills character area would be neutral (no change) due to the maturing replacement roadside screen planting and intervening topography and woodland*" (paragraph 10.10.147). At Bowes Bypass the alignment avoids physical change within the AONB aside from a small area of embankment and road widening to the western outskirts of Bowes. The replacement overbridge has been positioned in a low-lying part of the landscape, so as to reduce its perception from Bowes and the NP AONB. The scheme at Bowes Bypass has sought to mirror the existing A66 as far as practicable, so as to retain the proposed scheme within a part of the landscape which is already defined by highways infrastructure. It is therefore concluded within the landscape chapter of the ES, with specific reference to NNNPS paragraph 5.154, "*the scheme avoids compromising the purpose of the AONB designation and has been designed sensitively to reflect the existing alignment and vegetated character of the A66 in proximity to the AONB boundary".* It is therefore concluded within the

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		landscape chapter of the ES, with specific reference to NNNPS paragraph 5.154, "*the scheme avoids compromising the purpose of the AONB designation and has been designed sensitively to reflect the existing alignment and vegetated character of the A66 in proximity to the AONB boundary.*" (paragraph 10.10.149). The route will be visible from the AONB, although *"the scheme avoids compromising the purpose of the AONB designation and has been designed sensitively to reflect the existing alignment and vegetated character of the A66 in proximity to the AONB boundary"* (paragraph 10.10.149 of Chapter 10 of the ES) In accordance with paragraph 5.155 of the NNNPS, the visibility of the Project from within the AONB should not in itself be a reason for refusal. In summary, the Project's design meets the aim set out in paragraph 5.154 of the NNNPS. As set out above in relation to the update for 5.144-5.146 for one of the design changes proposed (that was accepted into the Examination) for DC21 within Scheme 6 – there is a change in the effect on the AONB during construction from slight adverse to moderate adverse, which is significant (as reported in the ES Addendum [Document Reference 8.4, CR1-017]). This change in significance, which relates to a temporary construction related effect, does not materially change the conclusions in relation to the conformity with this paragraph as set out above, as it does not change the principal findings from the **landscape** assessment. This finding is that that although the scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features across the designated landscape and this moderate temporary construction related effect, as reported in the ES Addendum, would not change this finding. Also please see update for paragraphs 5.147-5.148
5.156	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	In preparing the Project, the Applicant has given due consideration to local landscapes protected through local designations. Section 10.7 of Chapter 10 (Landscape and Visual) of the ES presents the baseline conditions including local landscape designations within the schemes. The scheme sits within a series of landscape character types as defined in various local Landscape Character Assessments. The following such assessments were reviewed (as set out in Appendix 10.4 of Chapter 10 (Landscape and Visual Impact Assessment) of the ES: • Cumbria Landscape Character

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	themselves as reasons to refuse consent, as this may unduly restrict acceptable development.	• Durham Landscape Character • North Yorkshire Landscape Character • North Pennies AONB Landscape Character
5.157	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.	The Project has been designed carefully, taking account of environmental effects to avoid adverse effects on the landscape. Section 10.8 of Chapter 10 (Landscape and Visual Impact Assessment) of the ES sets out the potential impacts of the Project on the landscape prior to the implementation of embedded mitigation which is outlined in section 10.9 (Embedded and Essential Mitigation and Enhancement Measures). The purpose of landscape mitigation is to avoid, minimise, restore or offset potential landscape and visual impacts of the Project. The principal means of mitigation is embedded in the design of each scheme through considered alignment and associated earthworks to achieve the best fit with topography and sensitive landscape features. Additional mitigation is described in Appendix 10.7 (Landscape Mitigation Schedule). In summary, reasonable mitigation has been proposed where required to avoid adverse impacts from the Project on the environment. As reported in the Closing Submissions [Document Reference 7.45, REP8-074] (paragraph 6.5.33-34): The ES Addendum [CR1-017] assesses the potential for certain of the proposed design changes to introduce new or different likely significant effects upon the environment when compared to Chapter 10 of the ES [Document Reference 3.2, APP-053].. Overall, there are no new or different significant landscape effects identified other than: • DC21 – there is a change in the effect on the AONB during construction from slight adverse to moderate adverse, which is significant This change in significance, which relates to a temporary construction related effect, does not materially change the conclusions in relation to the conformity with this paragraph as set out above, as it does not change the principal findings from the **landscape** assessment. This finding is that that although the scheme infringes slightly on the southern border of the North Pennines NP AONB there would be no significant physical change to the landscape features

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		across the designated landscape and this moderate temporary construction related effect, as reported in the ES Addendum, would not change this finding.
5.158	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. Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast, especially those defined as Heritage Coast.	The Project does not have any impact upon coastal areas or areas defined as Heritage Coast. The Project has taken consideration of the impact to local character areas, residents, users of recreational sites and Public Rights of Way ('PRoWs') and road users as is presented in section 10.10 of Chapter 10 (Landscape and Visual Impact Assessment) of the ES. A receptor-based approach is used for both landscape and visual receptors. For landscape receptors this involves describing effects on landscape character units and landscape designations. For visual receptors i.e. people, this involves assessing receptors, such as residents of properties or users of public rights of way (PRoW), individually or as groups. For visual receptors, representative viewpoints have been provided, refer to ES Figure 10.4: Zone of Theoretical Visibility (ZTV 3km) and Viewpoints (Document Reference 3.3, APP-105) for locations. These viewpoints have accompanying photography presented on ES Figures 10.8 Viewpoint Photosheets (Document Reference 3.3, APP-108). Locations where there is potential for significant visual impacts are set out as follows: 1. Residences along Clifford Road and Skirsgill Lane, Ash Hill Cottages along Cliburn Road, Low Moor Park, Sandersons Croft and Sleastonhow Farm, Bowes, Boldron and Dent House Farm. 2. Recreational users of Wetheriggs Park, two PRoWs and Mayburgh Henge, two PRoWs in the area and of the junction of the B6262 and Moor Lane near Brougham Castle, eight PRoWs around Kirkby Thore and Crackenthorpe as well as the Eden Valley Cycle Route, five PRoWs in the vicinity of Warcop and the Warcop Railway Station, three PRoWs around Bowes, as well as the Pennine Way and Clint Lane, four PRoWs around Cross Lanes and Rokeby, as well as users of Rokeby Park, the Church of St Mary and nine PRoWs around Stephen Bank to Carkin Moor as well as visitors to Mainsgill Farm 3. Motorists and pedestrian users of the A6, the minor road south of High Moss Woodland leading to the properties of Lane Ends, Long Marton Road, Sleastontonhow Lane and Priest Lane, the minor road leading to Moor House Farm and of the B6259, on and adjacent to The Street, of Barnard Castle Road and of Colliers Lane 4. Rokeby Historic Park and Garden and associated Church of St Mary

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		In summary, the Applicant has fully considered the visual effects on sensitive receptors and does not consider they outweigh the benefits of the Project. As reported in the Closing Submissions [Document Reference 7.45, REP8-074] (paragraph 6.5.39-6.5.41) At ISH2 the Examining Authority requested additional visual material to understand the form and visual appearance of the Trout Beck Viaduct; Cringle Beck Viaduct; and Moor Beck Viaduct. The Applicant explained that the viewpoints used in the Environmental Statement were selected in accordance with established practice and guidance set out in the DMRB, with particular reference made to paragraphs 3.32, 3.33 and 3.34.1 of DMRB LA 107. The Applicant confirmed that the proposed viewpoints were tabled at regular focus group meetings with stakeholders, including the local planning authorities, and additional viewpoints were added based on the input received from those stakeholders. In the Applicant's ISH2 Note [Document Reference 7.3, REP1-009] it was confirmed that the Applicant would provide visualisations in the form of artist's impressions to show the position, mass and scale of the structures and how these could look and be experienced in context. The Applicant submitted the Viaduct Visualisations at Deadline 4, with the justification for providing visualisations rather than traditional photomontages being discussed at ISH3 and recorded in the ISH3 Note [Document Reference 7.30, REP5-024]. This information and visualisations has been provided to assist the Examing Authority and the Secretary of State in considering the visual effects on sensitive receptors, such as local residents, and other receptors (as set out in the policy).
5.159	Reducing the scale of a Project or making changes to its operation can help to avoid or mitigate the visual and landscape effects of a proposed Project. However, reducing the scale or otherwise amending the design or changing the operation of a proposed development may result in a significant operational constraint and reduction in function. There may, be exceptional circumstances,	The Applicant has taken account of potential adverse landscape and visual effects and has sought to minimise or avoid effects where possible through the design. Where this is not possible careful consideration has been given to a range of mitigation measures to be implemented during the operation and construction phase of each scheme. These are set out in Section 10.9 (Embedded and essential mitigation and enhancement measures) of Chapter 10 (Landscape and Visual Impact Assessment) of the ES and shown illustratively on the Environmental Mitigation Maps which show one way in which the environmental mitigation strategy for the Project could be implemented. The landscape and other environmental mitigation will also be delivered in accordance with a set of design principles, as set out in the Project Design Principles (Document Reference 5.11 (Rev 5), REP8-061) and through a

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	In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape effects outweigh the marginal loss of scale or function.	Landscape and Ecological Management Plan within the EMP (Application Document 2.7). Following the implementation of these mitigation measures, It is predicted (as set out in section 10.10 of the Landscape and visual assessment) that there will be across the study area 65 visual receptors with significant adverse effects during construction; 47 visual receptors with significant adverse effects in year 1 of operation and 13 visual receptors with significant residual adverse effects in year 15 of operation. In light of this, the Applicant considers there to be no additional mitigation options that could be (or need to be) explored in relation to reducing the scale or function of the Project that would offer any additional significant benefit in landscape and visual terms to those identified above. As set out above, in the update to 5.157, there are some new and additional significant visual effects to those set out above, associated with the proposed changes (as accepted into the Examination). The conclusion set out above in relation to this policy has not changed though, that is the Applicant considers there to be no additional mitigation options that could be (or need to be) explored in relation to reducing the scale or function of the Project that would offer any additional significant benefit in landscape and visual terms to those identified above. As set out in the response to the policy the landscape and other environmental mitigation will be delivered in accordance with a set of design principles, with the Project Design Principles, submitted with the Application.There have been changes to the design principles during the course of the Examination, as set out within a clean and tracked revisions to the Project Design Princples submitted, at the following deadlines of the Examination: • Deadline 3 PDP (Rev 1) – Clean (Document Reference 5.11, REP3-04), Tracked (REP3-05) • Deadline 6 PDP (Rev 3) – Clean (Document Reference 5.11, REP6-015), Tracked (REP6-016) Deadline 8 PDP (Rev 4)- Document Reference 5.11, REP8-061The outline Landscape and Ecological Management Plan (Document Reference 2.7, REP6-005) (which will be developed further as part of a second iteration EMP) has also been updated to include further avoidance and mitigation measures in relation to landscape and visual impacts. The Applcant confirms that the measures contained in the LEMP are considered sufficient and appropriate mitigation measures to address the effects set out within the ES (Chapter 10) [Document Reference 3.2, APP-053] and the ES Addendum, with respect to the Design Changes [Document Reference 8.4, CR1-017].

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.160	Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure, design (including choice of materials), and landscaping schemes, depending on the size and type of proposed Project. Materials and designs for infrastructure should always be given careful consideration.	The Applicant has taken account of potential adverse landscape and visual effects and has taken up the opportunity to minimise these through appropriate siting of infrastructure, design (including materials), and indicative landscaping schemes. Project design has been responsive to site context and surroundings. Where possible Project design is reflective of local requirements, such as ensuring walking, cycling and horse-riding provision within proximity to key networks and tourist and community leisure facilities. Section 10.9 (Embedded and essential mitigation and enhancement measures) of Chapter 10 (Landscape and Visual Impact Assessment) of the ES sets out the range of mitigation measures to be implemented during the operation and construction phase of each scheme, which have been given careful consideration. For example, route wide, the construction activity would be located across and in close proximity to the existing A66, to consolidate the construction phase within the existing perception of the road. The removal of vegetation and stone walls has been minimised where practicable by the alignment of the Order Limits. During operation, the landscape planting design would include a range of measures designed to complement the local landscape character using species of local provenance with appropriate consideration of climate change resilient species. Mitigation planting may also function as visual screening when it has become established and reaches a reasonable height. The landscape mitigation maps which show the environmental mitigation strategy are presented in Application Document 2.8. Therefore, to conclude, the Applicant has taken account of possible landscape and visual effects through the Project's design. Please see update to paragraph 5.159 above. As reported in the Closing Submissions [Document Reference 7.45, REP8-074] (paragraph 6.5.45) during the Examination, there has been a particular focus on the design of three structures comprised in the Project, namely the crossings of Trout Beck, Moor Beck and Cringle Beck. Whilst the Examining Authority has suggested that the design of these structures should be subject to approval by the Secretary of State, the Applicant has explained in various submissions why this is not considered proportionate or necessary. The

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Applicant remains of the view that the existing controls within article 54 and, for example, the Project Design Principles, are sufficient to secure an appropriate design of these structures. The most recent response from the Applicant on this issue, which summarises the submissions on this to date, is contained in the Response to Examining Authority's Schedule of DCO Comments and Changes [REP7-166].
5.161	Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site, although if such landscaping was proposed to be consented by the development consent order, it would have to be included within the Order Limits for that application. For example, filling in gaps in existing tree and hedge lines would mitigate the impact when viewed from a more distant vista.	The Project has considered the need for landscape mitigation, including filling in gaps in existing tree and hedge lines to mitigate the impact when viewed from a more distant vista. All of this mitigation is proposed within the Order Limits, as detailed in section 10.9 of Chapter 10 (Landscape and Visual) in the ES (Application Documents 3.2-3.4). Please see update to paragraph 5.159 above. As reported in the Closing Submissions [Document Reference 7.45, REP8-074] (paragraph 6.5.42-6.5.43): In response to a request made by the Examining Authority at ISH2 in respect of trees, the Applicant submitted a Tree Loss and Compensation Report Deadline 4 [Document Reference 7.25, REP4-012].
Land use open space, green infrastructure and green belt		
5.165-5.167	The applicant should identify existing and proposed land uses near the Project, any effects of replacing an existing development or use of the site with the proposed Project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan. The assessment should be proportionate. Existing open space, sports and recreational buildings and land should not be developed unless the land is surplus to requirements or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location. Applicants considering	The Applicant has completed a review of existing and proposed land uses along the Project's route. It has then assessed any effects of replacing an existing development or use of the site with the proposed Project and whether the Project would prevent a neighbouring use from continuing. This review included any impacts the Project may have on existing open space, sports and recreational buildings. Section 13.8 of Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4) identifies existing and proposed land uses in the vicinity of the Project and covers the potential effects of the Project on people and communities. The Project would not result in the preclusion of any new development or use within the development plan. Chapter 15 (Cumulative and Combined Effects) of the ES states the likely effect on planning allocations identified in the development plan and applications. There are several sites which have planning permission or are allocated close to all schemes except Bowes Bypass and A1(M) Junction 53 Scotch Corner. The chapter concludes that there are no significant

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	proposals which would involve developing such land should have regard to any local authority's assessment of need for such types of land and buildings. During any pre-application discussions with the applicant, the local planning authority should identify any concerns it has about the impacts of the application on land-use, having regard to the development plan and relevant applications, and including, where relevant, whether it agrees with any independent assessment that the land is surplus to requirements. These are also matters that local authorities may wish to include in their Local Impact Report which can be submitted after an application for development consent has been accepted.	cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14). The PINS Advice note 17 recommends that a wide range of future projects is included within the cumulative effects assessment which can be tiered (from Tier 1 to 3) according to how far advanced the development is within the planning system and to the level of detail that is likely to be available for each tier. This advice note was adhered to and as set out in Table 154, Tier 3 includes development identified in the relevant Development plan (and emerging Development plans). For the Project as a whole, there has been ongoing stakeholder and public engagement throughout, for details see the Consultation Report (Document Reference 4.4, APP-252). This has included engagement with local planning authorities. The report has been developed following the information presented in the DCLG pre-application guidance document and the Planning Inspectorate's '*Advice Note 14: Compiling the Consultation Report*' (Version 3, February 2021). In reference to existing open space, sports, recreational buildings and land, please see the response to NNNPS paragraph 5.174 below. Therefore, it is concluded that the Project conforms with this policy as the Applicant has taken appropriate account of any existing and proposed land uses along the Project's route and has then assessed any effects of replacing an existing development or use of the site with the proposed Project and whether the Project would prevent a neighbouring use from continuing. This includes public open space and common land where replacement land has been identified in accordance with policy. Westmorland and Furness Council have raised some issues in relation to Wetheriggs Country Park Masterplan. These comments, together with the Applicant's position on them are as set out in the SoCG with Westmorland and Furness Council (submitted at Deadline 9). The Applicant's position set out in the Table of Not Agreed Issues (at 3.27) is as follows: "The Applicant has met with W&FC to discuss the issues in relation to Wetheriggs Country Park and acknowledge the potential to improve the connection between the existing open spaces and the new proposed open space. The existing football pitch at Wetheriggs Country Park is not within the red line for the DCO and will not be required for or impacted by the construction of the A66 NTP.

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		National Highways have agreed to a Work Package with W&FC on the creation of a masterplan for Wetheriggs Country Park via the Designated Funds route as this is outside of the A66 NTP scope. The Council will be leading the preparation of the masterplan with their appointed consultants. National Highways will continue to engage with W&FC on this masterplan and work with W&FC regarding the preparation of subsequent designated funds bids for detailed design and implementation of the masterplan should this be the chosen route by W&FC to take this forward." One of the proposed design changes (DC-03) that was accepted into the Examination would impact on the playing fields at Ullswater College to the north-est of the proposed Kemplay Bank junction. The Change Application Consultation Report [CR1-007] at table DC-03 (page 22) identifies the concerns raised "about the viability of the playing fields at Ullswater Community …both in the temporary case as well as in the permanent, post construction state" The Applicant confirmed that it will continue to engage with Ullswater College and Sport England regarding the marked pitch and surrounding land (beyond the DCO Order limits) with the intention that these facilities will remain functional during and post construction. The latest agreed position is set out in the SoCG with Sport England [REP8-073] at 3-2-1 of the Agreed Issues table as follows: 'ageed that replacement playing field needs to be provided to mitigate for that lost to the development. The replacement playing field must be of equivalent or greater quantity; and of equivalent or better quality (to comply with paragraph 99 pf the NPPF and Sport England's Playing Fields Policy Exception 4 (E4)."
5.168	Applicants should take into account the economic and other benefits of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification). Where significant development of agricultural land is demonstrated to be necessary, applicants should seek to use areas of poorer quality land in preference to that of a higher quality. Applicants should also identify any effects, and seek to minimise impacts, on soil quality, taking into account any mitigation measures proposed. Where possible, developments should be on previously developed (brownfield) sites provided that it is	The Applicant has identified where it encroaches into areas to be classed as best and most versatile ('BMV') agricultural land. The Applicant has considered the requirements of paragraph 5.168 as set out in Table 9.2 of Chapter 9 (Geology and Soils) of the ES (Application Documents 3.2-3.4). Natural England Strategic Agricultural Land Classification ('ALC') Maps and Ministry of Agriculture, Fisheries and Food ('MAFF') Provisional ALC Maps have been consulted for the study areas, giving an indication of the likelihood of BMV agricultural land, that is, better quality land (Grade 1 to Grade 3a) and lower quality land (Grade 3b to Grade 5). For areas of temporary development, ALC grade as determined from the soil survey will be used to inform the restoration criteria; BMV is to be returned to the same quality as far as reasonably practicable to minimise BMV losses and limit permanent impacts. Further details

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	not of high environmental value. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination and how it is proposed to address this.	are set out at section 9.9 (Essential Mitigation and Enhancement Measures) in Chapter 9 of the ES. An assessment of likely significant effects that could arise as a result of the Project has been undertaken and is set out at section 9.10 (Assessment of likely significant effects) of Chapter 9 of the ES. This confirms that a greater amount of poorer quality land will be lost (Grade 3b, 4 and 5) at 163.5ha compared to Grade 1-3a which results in 144ha lost. The Applicant has therefore sought to use areas of poorer quality land where this has been possible in lieu of higher quality land. Where potential impacts have been identified on soil quality during construction and operation phases, design, mitigation and enhancement measures have been established to minimise these impacts. Mitigation and enhancement measures are outlined at section 9.9 of Chapter 9 of the ES. The Project is an upgrade to an existing road and therefore where online widening is feasible it utilises the previously developed land, such as the MOD, but where it is not feasible routes have been selected to minimise negative impacts to the environment. The full reasoning of these alignments is set out in the in the PDOR (Document Reference 4.1, APP-244). Throughout Options Selection and Options Identification, a core principle adopted for the Appleby to Brough scheme was the aim to develop a route that could be constructed outside of the North Pennines AONB, UNESCO Global Geopark in accordance with the NNNPS paragraphs 5.151, 5.152, 5.154, and 5.155. Following a design review from both an environmental and engineering perspective at the beginning of the Preliminary Design stage, it was determined that the Appleby to Brough scheme could not be constructed without land take within the North Pennines AONB/ UNESCO Global Geopark. Potential impacts from possible contamination sources, pathways and key receptors have been identified from a variety of information sources within the study area. The locations of potential contamination sources have been identified relative to the Order Limits. The potential impact to geodiversity, soils, human health, surface water and groundwater quality from identified potential contamination sources has been established. Further details are set out at section 9.8 (Potential impacts) of Chapter 9 of the ES. Design, mitigation and enhancement measures have been put in place to address any impacts identified arising from potential contamination sources, ensuring they are appropriately mitigated. This is set out at section 9.9 of Chapter 9 (Geology and Soils) of the

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		ES. Further explanation of how the Project is in compliance with paragraph 5.168 is set out in response to issues raised by the Trustees of Winderwath Settled Estates in their Deadline 5 Submission. The Applicant's response to these issues is set out on pages 81-82 of the Applicant's Deadline 6 Submission - Applicant's Response to Deadline 5 Submissions [REP6-021] as follows: "Taking into account the economic and other benefits of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification). The Applicant has taken into account the economic and other benefits of the best and most versatile agricultural land through the stages of project development. For example, at PCF stage 1 the assessment of shortlisted route alignment, were considered against a number of criteria including BMV. This assessment found that the magnitude of effect for loss of BMV is similar if not the same for all of the route options evaluated for the Project. The potential loss of BMV was therefore taken into account but was not a clear differentiating factor between options. In addition, the design development and consideration of alignment options at PCF stage 3 (as reported in the Route Development Report – Appendix 3 of the Project Development Overview Report (APP-244)) took account of the impacts on farming business and agricultural land, through the environmental, social and economic appraisal criteria used to assess the options considered for different schemes. Throughout the consideration of different route options and design development there has been on-going engagement and consultation, with farmers and other parties with an interest in agricultural land, which has taken account of the economic and other benefits of BMV to agricultural businesses. Through engagement and consultation with agricultural businesses the applicant has sought to use areas of poorer quality land in preference to that of a higher quality and to minimise or mitigate impacts where higher quality land use cannot be avoided. Regard has been had to the issues raised by agricultural businesses at consultation and through engagement and changes were made to the design in response to the issues raised, associated with impact and potential loss of higher quality land, as reported in the Consultation Report (APP-252). Table 3.2 of the Consultation Report sets out on a scheme-by-scheme basis the principal changes made in response to issues raised by landowner, including agricultural businesses. For example, changes were made to access tracks and other elements of the project to ensure that they are located on less productive land to minimise the impact on agricultural businesses.

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		As demonstrated through the reporting of the soils and geology assessment (chapter 9) (APP-052) and the population and human health (chapter 13) (APP-056) of the ES the applicant has identified any effects and has identified the measures to minimise and mitigate impacts, on soil quality. The identification of measures to minimise and mitigate the impact on BMV where temporary possession is required during construction and other measures to mitigate the impact on agricultural businesses, as set out in the ES, are to be secured through a register of commitments set out in the Environmental Management Plan (REP3-004). Measure to manage and minimise impact on soil quality are set out within Annex B9 of the EMP Soil Management Plan (REP3-013)."
5.169	Applicants should safeguard any mineral resources on the proposed site as far as possible.	The Applicant has assessed whether the Project would encroach into any areas where there are mineral resources and has taken adequate measures to safeguard mineral resources within the Project as far as is possible. Chapter 11 (Materials and Waste) of the ES (Application Documents 3.2-3.4) identifies the location of mineral consultation areas and/or Mineral Safeguarding Areas within the Order Limits. These designations largely occur to some extent within each scheme. See Figure 11.1 of Chapter 11 of the ES (Application Document 3.3) for a visual representation of such locations. The safeguarding of mineral resources is a key element of the assessment and methodology of the ES. This is set out further at sections 11.3, 11.7.8 and section 11.1.1 of Chapter 11 (Materials and Waste) of the ES. This chapter concludes that out of the eight schemes forming part of the Project, sterilisation of minerals would only occur at one location (Cross Lanes to Rokeby), and this has been minimised as far as is possible through the scheme's design evolution as detailed in the PDOR (Document Reference 4.1, APP-244). As such, during the construction phase, this results in a significant adverse effect to the Carboniferous Limestone in this location, however, no significant effects are concluded at the operational stage of the Project. Based upon the above, the Project has taken all relevant measures to safeguard mineral resources in the vicinity of the DCO limits as far as possible. The Applicant's Comments on LIR [REP2-018] pages 62 and 130 respond to the Council's comments on topics including aggregates assessment data and outlining the position taken for assessment of minerals safeguarding sites.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
5.170-5.171	The general policies controlling development in the countryside apply with equal force in Green Belts but there is, in addition, a general presumption against inappropriate development within them. Such development should not be approved except in very special circumstances. Applicants should therefore determine whether their proposal, or any part of it, is within an established Green Belt and, if so, whether their proposal may be considered inappropriate development within the meaning of Green Belt policy. Metropolitan Open Land, and land designated as Local Green Space in a local or neighbourhood plan, are subject to the same policies of protection as Green Belt, and inappropriate development should not be approved except in very special circumstances. Linear infrastructure linking an area near a Green Belt with other locations will often have to pass through Green Belt land. The identification of a policy need for linear infrastructure will take account of the fact that there will be an impact on the Green Belt and as far as possible, of the need to contribute to the achievement of the objectives for the use of land in Green Belts.	The Project does not extend into any designated Green Belt land, Metropolitan Open Land or Local Green Space. The Project does encroach into areas of designated open space, and these are considered at paragraph 5.174 of this Appendix.
5.173	Where the Project conflicts with a proposal in a development plan, the Secretary of State should take account of the stage which the development plan document has reached in deciding what weight to give to the plan for the purposes of determining the planning significance of what is replaced, prevented or precluded. The closer the	At Chapter 3 of this document the Applicant has reviewed and assessed the relevant host authorities adopted and emerging local plans and considers weight should to be given to them by the SoS. As part of the cumulative assessment (Chapter 15 (Cumulative and Combined Effects) of the ES (Document Reference 3.2, APP-058) an assessment of cumulative effects with other existing development and/or approved development sites was undertaken, which included the likely effects on planning allocations identified in the development plan and applications. The

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	development plan document is to being adopted by the local plan, the greater the weight which can be attached to the impact of the proposal on the plan.	assessment found that there are several sites which have planning permission or are allocated close to all schemes except Bowes Bypass and A1(M) Junction 53 Scotch Corner. Chapter 15 concluded that there are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (Chapters 5-14). An assessment of the Project's accordance with relevant county and local plan policies has been completed at Appendices C and D of this document below.
5.174	The Secretary of State should not grant consent for development on existing open space, sports and recreational buildings and land, including playing fields, unless an assessment has been undertaken either by the local authority or independently, which has shown the open space or the buildings and land to be surplus to requirements, or the Secretary of State determines that the benefits of the Project (including need) outweigh the potential loss of such facilities, taking into account any positive proposals made by the applicant to provide new, improved or compensatory land or facilities.	The assessment within Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4) considers the Project's likely significant effects on green space and community sports facilities. Meetings have taken place with Sport England to discuss the proposals affecting Ullswater College rugby pitch at Penrith and the Ministry of Defence ('MoD') playing pitch and Replacement at Warcop, which is part of a permanent land acquisition from the MoD. The loss of the playing pitch, taken together with the loss of a helipad on the same land, represents a major adverse impact, which would be significant. However, the embedded mitigation within the scheme design means that both the playing field and helipad will be relocated to the south of the scheme, off Castlehill Road. The replacement facilities will be fully operational before the closure of the existing provisions due to the potential use as an emergency services helipad. As such the residual impact will be no change which will be a neutral effect The Kirkby Thore Primary School sports pitch will be temporarily required to facilitate the diversion of a utility and will be returned to its existing use upon completion of the diversion works. The temporary land take equates to approximately 0.15ha which is approximately 35% of the outdoor space available to the school. This represents a major adverse temporary impact on a very high sensitivity receptor, which will be a very large adverse significant effect. The benefits of the project and the benefits of the Temple Sowerby to Appleby scheme (as set out in the Case for the Project (Document Reference 2.2, APP-008) outweigh this temporary adverse effect. Under section 131 of the PA 2008, National Highways will provide replacement land in exchange for the Common Land being compulsorily acquired. "Replacement land" is defined in section 131(12) as land which is:

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		• Not less in area than the order land (the area proposed to be acquired). • No less advantageous to the persons, if any, entitled to rights of common or other rights. • No less advantageous to the public. The following areas of replacement land are required in order to conform with the section 131 of the PA 2008: • 0.9ha of replacement Common Land at Wetheriggs Country Park and the loss of land at the Ullswater Community College rugby Field. It should be noted that the rugby field itself is not affected and suitable spectator areas are maintained. • 1.12ha of replacement Common Land at Ketland Common. Both areas of mitigation will be operational prior to land take of the existing sites. Given the compensatory (replacement) land, and the wider transport, economic and environmental benefits arising from the Project and set out in the CftP at Chapter 3 (Document Reference 2.2, APP-008), it is considered that the loss of the small amount of open space would be outweighed by the benefits which the Project would deliver. For full details of the above assessments please see Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4). Please see update to paragraph 5.165-5.167 above
5.175	Where networks of green infrastructure have been identified in development plans, they should normally be protected from development, and, where possible, strengthened by or integrated within it. The value of linear infrastructure and its footprint in supporting biodiversity and ecosystems should also be taken into account when assessing the impact on green infrastructure.	The assessment within the ES has accounted for open spaces and also any green infrastructure such as National Trails or PRoWs, within the study area. This is set out in section 13.7 (Baseline conditions) and section 13.9 (Potential impacts) of Chapter 13 (Human Health and Population) of the ES (Application Documents 3.2-3.4). The assessment has taken also taken account of development plans and planning applications as part of the cumulative impact assessment Chapter 15 (Cumulative Effects) of the ES (Application Documents 3.2-3.4). Section 13.3 (Legislation and Policy Framework) of Chapter 13 (Human Health and Population) of the ES (Application Documents 3.2-3.4) details the range of legislation which is applicable to the assessment and in turn which role is to protect green infrastructure. For example:

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		• The Commons Registration Act 1965 concerns the registration of rights to Common Land, town greens, and village greens in England and Wales. • The Countryside and Rights of Way Act 2000 improves rights of way legislation by encouraging the creation of new routes and clarifying uncertainties about existing rights, whilst obliging the highway authority to recognise the needs of the mobility impaired when undertaking improvements. • The National Parks and Access to the Countryside Act 1949 sets out the protection for national trails (including the Pennine Way) and the mechanism by which they can be diverted. Mitigation and enhancement measures have also been included in the design including the re-provisioning of any common land which is lost as a result of the Project. This includes 0.9ha of replacement Common Land at Wetheriggs Country Park and replacement of the loss of land at the Ullswater Community College Rugby Field (open access land). 1.12ha of common land at Ketland Common will also be re-provided. Full details are set out at section 13.9 (Essential mitigation and enhancement measures) and section 13.10 (Assessment of likely significant effects) of Chapter 13. The Applicant would create a network of green infrastructure and subsequent habitat creation along the Project route. Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4) provides details of such habitat creation and implementation of green bridges and greening of overbridges to provide connectivity. Please see update to paragraph 5.165-5.167 above
5.176	The decision-maker should take into account the economic and other benefits of the best and most versatile agricultural land. The decisionmaker should give little weight to the loss of agricultural land in grades 3b, 4 and 5, except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy.	The Applicant has assessed and reviewed any possible encroachment into land which is considered BMV agricultural land. See the response to NNNPS paragraph 5.168 above. Each scheme within the Project route has been subdivided into discrete sections allow the appraisal of local BMV classification. This is set out in further detail at section 9.8 (Potential impacts) at Chapter 9 (Geology and Soils) of the ES (Application Documents 3.2-3.4). Potentially adverse impacts are characterised, and suitable design and mitigation measures have been defined for implementation. This is defined at section 9.9 (Essential mitigation and enhancement measures) at Chapter 9 of the ES. Significant impacts to the ALC and BMV are anticipated. Due to the surrounding environment and the nature of the Project comprising online improvements to an existing road, there is limited opportunity to avoid such impacts to

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		soil. The EMP (Application Document 2.7) has been developed to contain measures to ensure compliance with relevant standards and legislation. Section 13.10 of Chapter 13 (Population and Human Health) of the ES [Document Reference 3.2, APP-056] identifies the likely significant effects on agricultural land holdings at the construction and operational phases. This section sets out the impact on a scheme-by-scheme basis. In terms of agricultural land in grades 3b, 5 and 5, a total of 163.5ha of soils will be lost. On a route-wide basis, with temporary land take returned to the farm holding post construction, it is considered that the majority of agricultural holdings would continue to operate, particularly given mitigation measures such as new overbridges which seek to provide ongoing access between land and key infrastructure. Overall, during operation it is therefore considered that there would be neutral effects on agricultural holdings. Agricultural holdings within the wider 500m study area would experience no loss or alteration of characteristics, features, elements or accessibility during operation (no change) which when combined with their low sensitivity would lead to a neutral effect. Please see update to paragraph 5.168 above.
5.180	Where green infrastructure is affected, applicants should aim to ensure the functionality and connectivity of the green infrastructure network is maintained and any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space, including appropriate access to new coastal access routes, National Trails and other public rights of way.	The assessment has accounted for open spaces and also any green infrastructure such as Nationals or PRoWs, within the study area. See the response to NNNPS paragraphs 5.174 and 5.175 above. Please see update to paragraph 5.165-5.167 above.
5.181	The Secretary of State should also consider whether mitigation of any adverse effects on green infrastructure or open space is adequately provided for by means of any planning obligations, for example, to provide exchange	Section 131 of the PA 2008 applies to this Project. As such, the applicant will provide replacement land in exchange for the Common Land being compulsorily acquired. See the response to NNNPS paragraph 5.174 above. Please see update to paragraph 5.165-5.167 above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	land and provide for appropriate management and maintenance agreements. Any exchange land should be at least as good in terms of size, usefulness, attractiveness, quality and accessibility. Alternatively, where sections 131 and 132 of the PA 2008 apply, any replacement land provided under those sections will need to conform to the requirements of those sections.	
5.182	Where a proposed development has an impact on a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to safeguard mineral resources.	The Applicant has taken account of its surrounding site context, considered whether the Project would have any impact on a Mineral Safeguarding Area (MSA) and put forward appropriate mitigation to safeguard mineral resources. See the response to NNNPS paragraphs 5.169 above and 5.183 below. Please see update to paragraph 5.169 above.
5.183	Where a project has a sterilising effect on land use there may be scope for this to be mitigated through, for example, using the land for nature conservation or wildlife corridors or for parking and storage in employment areas.	The Applicant has assessed whether it is likely to have a sterilising effect on MSAs crossing or close to the Project at section 11.9 of Chapter 11: Materials and Waste of the ES [Document Reference 3.2, APP-054]. Sterilisation of an MSA has been identified for the Cross Lanes to Rokeby scheme only. The design follows the existing carriageway and would only impact a small portion of the wider resource. Encroachment into the MSA is due to new adjacent eastbound carriageway to the south between the B6277 junction at Cross Lanes and the existing Tutta Beck Cottage access and will include significant engineering interventions. The scheme has been refined to reduce the overall footprint of the Cross Lanes and Rokeby junctions, thus minimising encroachment into the MSA. Please see update to paragraph 5.169 above.
5.184	Public rights of way, National Trails, and other rights of access to land (e.g. open access land) are important recreational facilities for walkers, cyclists and equestrians. Applicants are expected to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other public rights of way	The Applicant has considered the Project's possible effects on any existing PRoW, National Trails, and other right of access to land which are used by walkers, cyclists and equestrians ('WCH') and relevant mitigation measures have been incorporated into to the Project design to address any adverse effects. Section 13.8 of Chapter 13 (Population and Human Health) of the ES (Application Documents 3.2-3.4) describes the mitigation and enhancement measures that are proposed. These would

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	and open access land and, where appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way consideration needs to be given to the use, character, attractiveness and convenience of the right of way. The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements in respect of these measures might be attached to any grant of development consent.	involve enhancements to existing PRoWs to improve connection across the A66 and prevent severance of communities. As defined in the Project Design Principles (Document Reference 5.11, REP8-061), the Project will be guided by Theme AT1, under the wider Theme B umbrella of '*Designs to enhance experience for all users and serve the local community'.* This means that where PRoWS and non-motorised user routes are to be provided or re-aligned to accommodate the Project, consideration must be given to both the utility and the aesthetic qualities of the detailed design of such routes (e.g. surface and boundary treatment, visual outlook and interface), to maximise their potential use for sustainable travel and commuting. This design principle will be secured as part of the DCO. Amongst the Design Principles of the Project Design Report (Document Reference 2.4, APP-010) within the section 'Good Road Design is Inclusive', it is noted that the principle for WCH is to integrate the needs of walkers, cyclists and horse riders within designs, incorporating the network of PRoW around the A66 that designs tie in with. The network comprises mainly of footpaths and a small number of bridleways and restricted byways. Where the Project proposals could affect the existing PRoW, appropriate mitigation measures are being integrated into designs, including safe crossing points where necessary. Full details are set out within the Walking, Cycling and Horse Riding Proposals (Document Reference 2.4, APP-010). In considering these enhancements and revisions, the use, character, attractiveness and convenience of the PRoW has been considered. Baseline data gathering is presented in section 13.4 of Chapter 13 (Population and Human Health) of the ES [Document Reference 3.2, APP-056] which identifies that the type, location and extent of WCH provision (for example PRoWs) within the study area and their frequency of use was all reviewed and considered. The mitigation measures proposed for PRoW would be attached to a grant of development consent and are specified within the draft DCO (Document Reference 5.1, REP8-028).
Noise and vibration		
5.186	Excessive noise can have wide-ranging impacts on the quality of human life and health (e.g. owing to annoyance or sleep disturbance), use and	The Applicant has considered the impacts of noise and vibration. This is set out at Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4). An assessment of likely significant effects from construction noise and vibration and operational noise has been undertaken and is presented in the ES at Chapters 10 (Landscape

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	enjoyment of areas of value (such as quiet places) and areas with high landscape quality. The Government's policy is set out in the Noise Policy Statement for England. It promotes good health and good quality of life through effective noise management. Similar considerations apply to vibration, which can also cause damage to buildings. In this section, in line with current legislation, references below to "noise" apply equally to assessment of impacts of vibration.	and Visual Impact Assessment) and Chapter 13 (Population and Human Health) (Application Document 3.2). The Project has duly considered the Noise Policy Statement for England as presented in paragraphs 12.3.2 and 12.3.3 of section 12.3 Legislation at Chapter 12 (Noise and Vibration) of the ES. During the construction phase, there are expectant significant temporary adverse effects to residents along the entire route. The operation of the Project is predicted to give rise to beneficial effects at 408 residential and 46 non-residential receptors where the existing A66 is by-passed and where the traffic volume on the by-passed roads decreases. There are three NIAs predicted to be subject to significant beneficial effects. Conversely, there are 128 residential and 6 non-residential receptors which are predicted to experience significant adverse effects as a result of noise increase arising from the Project. Noise reduction measures have been embedded within the Project such as the selection of the vertical and horizonal alignment and the use of road surfacing (where appropriate) with lower noise generating characteristics than standard hot rolled asphalt road surfacing. Noise barriers in the form of earth bunds have been implemented, as far as it is practicable, to minimise any adverse impacts arising from noise emissions. Additional noise barriers have been proposed, where sustainable, in locations where change in noise levels is expected to be significant in order to lessen impacts. Furthermore, the Principal Contractor (PC) will determine whether applications under Section 61 of the Control of Pollution Act 1974 are appropriate or required in relation to noise management. Within this application, a detailed construction assessment will be undertaken using the most up to date construction information to enable further noise and vibration predictions to be completed in line with the latest working method(s) and construction program. An Environmental Statement Addendum (Document Reference 8.3, CR1-017) was submitted at Deadline 7. This reported on the environmental assessment of the 22 Project design changes accepted into the examination and whether they gave rise to any new or different likely significant effects on the environment when compared to those reported in the Environmental Statement. DC. As set out in Change Application – Application Report (Document Reference 8.1, CR1-002) Design Change - 01 has been assessed as resulting in one less significant effect in noise and vibration when compared to the DCO design. The Skirsgill Lodge receptor is predicted to experience a non-significant minor adverse impact in

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		Noise and Vibration in the operational phase with the design change rendering the proposed noise barrier unnecessary. This is an improvement on the DCO design, as the proposal assessed and reported in the ES Chapter 12 (APP-55) resulted in a significant adverse effect on the named receptor. The final draft of the Environmental Management Plan (Document Reference 2.7, [**REP8-005**]) secures the various mitigation measures to environmental impacts identified in the ES and the ES addendum. This includes noise mitigation in the form of noise barriers (fence type), to avoid and minimise significant adverse effects arising from operational noise. The final draft of EMP Annex B5 Noise and Vibration Management Plan [**REP8-013**] was also updated during the Examination and submitted at Deadline 8.
5.187	Noise resulting from a proposed development can also have adverse impacts on wildlife and biodiversity. Noise effects of the proposed development on ecological receptors should be assessed in accordance with the Biodiversity and Geological Conservation section of this NPS.	The Applicant has considered the noise effects of its proposed development on wildlife and biodiversity. Ecology is considered a sensitive receptor that could be affected by changes to noise and vibration. Effects of impacts on wildlife and biodiversity from noise have been assessed in Chapter 6 (Biodiversity) of the ES (Application Documents 3.2-3.4). This identifies that construction activities including vehicle and personnel movements, noise and vibration may have potential impacts on sensitive species such as breeding and over-wintering birds, roosting bats and other mammals such as otters. Essential mitigation and enhancement as outlined in Chapter 6 (Biodiversity) of the ES presents measures to ensure no significant effects are anticipated on Biodiversity. Such measures include: • Adherence to the EMP (Application Document 2.7) in which avoidance and mitigation measures have been included to minimise the effects of construction on biodiversity features. Measures include, but are not limited to, the following: • Construction works will need to be undertaken sensitively in proximity to identified bat roosts and established flight lines, with particular emphasis on key seasonal timings for bats, namely the maternity period and the weeks before and after the hibernation period. These key periods extend from May to August and November to March respectively. Protection zones around roosts are dependent on the type of work being undertaken. For light works using handheld tools, a 10m protection zone is recommended. For works generating noise and vibration, a minimum 30m protection zone should be applied.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		• instream works resulting in species fragmentation will be undertaken outside of the key salmonid breeding season; construction activities resulting in excess noise and vibration will be sensitively timed to reduce disturbance impacts on migrating fish; night working will be avoided where practicable adjacent to watercourses and will only be implemented where traffic management on a road necessitates it for safety; • construction activity in the area surrounding Monks Rest Farm (Roost 35) will require consultation with the ECoW to determine requirement for restrictions to work activities to prevent direct and indirect roost disturbance effects. These may include, but are not limited to, timing of works within certain months of the year, lighting plans to reduce overnight light spill, limitation of works generating noise and vibration within 30m of the roost and further surveys, for example endoscope or thermal imaging checks. Noise effects of the proposed development on ecological receptors have been assessed in accordance with the Biodiversity and Geological Conservation section of the NPS. EMP Annex B5 Air Noise and Vibration Management Plan was updated during the Examination and the final draft submitted at Deadline 8 (Document Reference 2.7, [REP8-013]). EMP Annex B1 Outline Landscape and Ecology Management Plan was also updated during the Examination and the final draft submitted at Deadline 8 (Document Reference 2.7, REP8-008).
5.189	Where a development is subject to EIA and significant noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment, which should form part of the environment statement: · a description of the noise sources including likely usage in terms of number of movements, fleet mix and diurnal pattern. For any associated fixed structures, such as ventilation fans for tunnels, information about the noise sources including the identification of any distinctive	A noise assessment was completed as part of the ES for the Project. This is detailed in full at Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4) and identifies that the Project has the potential to cause likely significant noise and vibration impacts. Noise assessment was also undertaken as part of the Change Application - ES Addendum. This is detailed in Chapter 2, 5, and 8 of the Environmental Statement Addendum Volume 2, Rev 2 (Document Reference 8.3, REP7-169). The methodology for the noise and vibration assessment in the Change Application - ES addendum is the same as in the original ES. As presented in the ES, during construction the Project has the potential to cause likely significant noise and vibration impacts Taking each of the points denoted in paragraph 5.189 in turn: • There is no relevant plant associated with the operation of the Project and traffic noise sources are addressed within the calculation of road traffic noise. Details are provided

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	tonal, impulsive or low frequency characteristics of the noise. identification of noise sensitive premises and noise sensitive areas that may be affected. the characteristics of the existing noise environment. a prediction on how the noise environment will change with the proposed development: O In the shorter term such as during the construction period; O in the longer term during the operating life of the infrastructure; O at particular times of the day, evening and night as appropriate. · an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive areas. · measures to be employed in mitigating the effects of noise. Applicants should consider using best available techniques to reduce noise impacts. · the nature and extent of the noise assessment should be proportionate to the likely noise impact.	in the TA (Document Reference 3.7, REP2-003) for operational noise and in Appendix 12.2 (Construction Assessment Assumptions) of the ES (Document Reference 3.4, APP-212) for construction noise and vibration. • Noise sensitive receptors have been identified through the study area and have been used to inform the assessment of likely significant effects from construction and operational noise. The method for identifying likely significant effects of noise and vibration from construction and operation of the Project, within an identified study area (as defined within section 2.6: Study Area), is aligned with DMRB LA 111 and Government noise policy. • In regard to the characteristics of the existing noise environment, baseline noise surveys were undertaken to inform the understanding of the existing noise environment. This is detailed in section 12.7 of Chapter 12 and Appendix 12.1 (Baseline Noise Survey Results) of the ES (Document Reference 3.4, APP-211). • An assessment of likely significant effects from operational noise has been undertaken and is presented within the ES and in the Change Application ES Addendum. This includes an assessment of both the short term and long term. All construction and operational noise changes are also presented in this section. This is referenced in section 12.10 (Assessment of likely significant effects) of Chapter 12 of the ES. The approach to the assessment itself and methodology is presented in section 12.4 (Assessment methodology). This section also presents how change in noise levels during the daytime and night-time effect dwellings or sensitive receptors. • Mitigation measures on options to mitigate noise effects have been considered and referenced in section 12.9 (Essential Mitigation and Enhancement measures) of Chapter 12 of the ES. • All construction and operational noise changes are presented in section 12.10 (Assessment of likely significant effects) of Chapter 12 and in Chapter 2, 5, and 8 of

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		volume 2 of the Environmental Statement Addendum (Document Reference 8.3, REP7-169). The assessment has been undertaken in a proportional manner to the likely noise impact. • Following *DMRB LA 111*, road links with potential to experience a short-term BNL change of more than 1dB (A) as a result of the Project have been included within the study area which is provided at section 12.6 of Chapter 12 of the ES. In summary, the Applicant has taken the relevant steps and completed a noise assessment forming part of the ES which is summarised above. The Issue Specific Hearing 1 (ISH1) Post Hearing Submissions – Response to Examining Authority Question Under Agenda Item 2.1: The Sills – Scope for Complementary Environmental Consideration (Document Reference 7.15, REP3-044) considered through a more granular approach the effects and impacts of additional traffic on The Sills as requested by the ExA on matters including noise. The outcome of this more granular assessment concluded the noise levels at sensitive receptors near to and along the Sills are predicted to increase by less than 3dB as a result of the operation of the Project. These noise levels are predicted to remain below the SOAEL (except at two properties that are currently above SOAEL but only very small changes are calculated) and therefore an adverse likely significant effect is unlikely to occur at any of the properties along The Sills or the pedestrian walkways, consistent with the aims of the NPSNN. The increase in traffic flows provided in December 2022 is calculated to change the modelled noise levels by less than 1dB and therefore it does not change the conclusions made in the DCO application. An Environmental Statement Addendum (Document Reference 8.3, CR1-016) was submitted at Deadline 7. This reported on the environmental assessment of the 22 Project design changes accepted into the Examination and whether they gave rise to any new or different likely significant effects on the environment when compared to those reported in the Environmental Statement. As set out in the Change Application Report (Document Reference 8.1, CR1-002) Design Change - 01 has been assessed as resulting in one less significant effect in noise and vibration when compared to the DCO design. The Skirsgill Lodge receptor is predicted to experience a nonsignificant minor adverse impact in Noise and Vibration in the operational phase with the design change rendering the proposed noise barrier unnecessary. This is an

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		improvement on the DCO design, as the proposal assessed and reported in the ES Chapter 12 (APP-55) resulted in a significant adverse effect on the named receptor. The final draft of the Environmental Management Plan (Document Reference 2.7) secures the various mitigation measures to environmental impacts identified in the design change ES addendum. This includes noise mitigation in the form of noise barriers (fence type), to avoid and minimise significant adverse effects arising from operational noise. The final draft of EMP Annex B5 Noise and Vibration Management Plan [**REP8-014**] was updated and submitted at Deadline 8.
5.190	The potential noise impact elsewhere that is directly associated with the development, such as changes in road and rail traffic movements elsewhere on the national networks, should be considered as appropriate.	The Applicant has considered all relevant noise receptors which have the potential to be impacted by noise that is directly associated with the development. The details of potential noise impacts are provided in section 12.6 (Study area) of Chapter 12 (Noise and Vibration) of the ES (Document Reference 3.4, APP-216). The study area of these potential noise receptors has been determined using the guidance provided within DMRB LA 111. Construction traffic can have a temporary impact on sensitive receptors located along existing roads. The potential for such impacts is dependent on the volume and route of construction traffic. During construction, it may be occasionally necessary to divert traffic off the A66 to allow works to be undertaken. DMRB LA 111 states that any receptor within 25m of a diversion route at night would be subject to a major noise impact. Where this major noise impact would exceed 10 or more nights in any consecutive 15 nights or 40 nights in any six consecutive months, this would be considered to cause a potential temporary significant effect. Having regard to changes in road and rail traffic movements elsewhere on the national networks, diversion routes when construction works on the A66 take place, have the potential to give rise to adverse impacts upon receptors in close proximity to such routes. These diversion routes are only likely to be required for limited activities and unlikely to be for significant durations. There is likely to be temporary significant effects to any receptor within 25 metres of a diversion route. At this stage diversion routes are yet to be confirmed. The selection of diversion routes will be conducted in line with the EMP and respective NVMP (Application Document 2.7) and Construction Traffic Management Plan (CTMP) (Application Document 2.7). Following the routewide assessment, which includes those areas between schemes, a scheme-by-scheme assessment has been completed where all sensitive residential and non-

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		residential receptors (within the study area) are presented. There are 109 receptors located in-between schemes or close to roads predicted to experience a significant permanent beneficial effect as a result of the operation of the Project. These receptors are located around Cliburn and Bolton (alongside Wetheriggs and Chapel Street to the south-east of Penrith), Barnard Castle (alongside A67 and Newgate), Ravensworth (alongside Waitlands Lane and Stonygate Bank) and Richmond (alongside Gallowgate) 28 non-residential receptors are predicted to experience a significant permanent beneficial effect as a result of the operation of the Project. These receptors are located in Barnard Castle and Richmond. Noise Important Areas ('NIAs') are locations in England where the top 1% of the population that are affected by the highest noise levels are located. 11 NIAs have been identified adjacent to the existing A66 within the study area. During operation, two NIA's are predicated to experience a significant permanent beneficial effect (Temple Sowerby to Appleby and Stephen Bank to Carkin Moor). The Issue Specific Hearing 1 (ISH1) Post Hearing Submissions – Response to Examining Authority Question Under Agenda Item 2.1: The Sills – Scope for Complementary Environmental Consideration (Document Reference 7.15, REP3-044) considered through a more granular approach the effects and impacts of additional traffic on The Sills as requested by the ExA. The outcome of this more granular assessment concluded the noise levels at sensitive receptors near to and along the Sills are predicted to increase by less than 3dB as a result of the operation of the Project. These noise levels are predicted to remain below the SOAEL (except at two properties that are currently above SOAEL but only very small changes are calculated) and therefore an adverse likely significant effect is unlikely to occur at any of the properties along The Sills or the pedestrian walkways, consistent with the aims of the NPSNN. The increase in traffic flows provided in December 2022 is calculated to change the modelled noise levels by less than 1dB and therefore it does not change the conclusions made in the DCO application.
5.191	Operational noise, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance. The prediction of road traffic noise should be based on the method described in Calculation of Road Traffic Noise. The	The Applicant has assessed construction and operational noise in respect of human receptors using the principles of the relevant British Standards and other guidance in section 12.4 of Chapter 12 (Noise and Vibration) of the ES (Document 3.4, APP-216). Please see the response to NNNPS paragraph 5.189 within this Appendix. Section 12.3 of Chapter 12 (Noise and Vibration) of the ES (Application Document 3.4, APP-216) confirms that the assessment has been compiled in accordance with relevant standards and guidance

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	prediction of noise from new railways should be based on the method described in Calculation of Railway Noise. For the prediction, assessment and management of construction noise, reference should be made to any relevant British Standards and other guidance which also give examples of mitigation strategies.	including, Calculation of Road Traffic Noise (CRTN) 1988 (Department for Transport, 1988). Furthermore, paragraph 12.4.18 identifies that the magnitude of impact of construction traffic noise is determined using Construction Basic Noise Level (BNL) impact magnitudes. The BNL is calculated using the principles defined in the *Calculation of Road Traffic Noise (CRTN) 1988* (Department for Transport, 1988), as required by *DMRB LA 111* and *NNNPS*. As reported in the Closing Submissions (Document Reference 7.45, REP8 – 074) further modelling and analysis have been undertaken as requested by Westmorland and Furness Council in CCC and EDC's Principal Issues to be addressed with the ES. A technical note was provided to respond to the request on 20 April 2023, which concluded that the proposed design of the Kirkby Thore earth bunds submitted for DCO is optimised in terms of balancing the needs of the Project as a whole including noise and landscape and visual impacts. A meeting was then held on 21 April 2023 to discuss the outcomes of the technical note. The Council consequently sent further comments via e-mail on 27 April 2023, which were responded to via e-mail on 10 May 2023. Following this, Westmorland and Furness Council and WSP, consultants to Westmorland and Furness Council advised verbally on 15 May 2023 that there are additional opportunities in respect of noise which will be shared with National Highways, and, as set out in the SoCG with Westmorland and Furness Council, the Applicant considers that all noise queries have been effectively responded to and the project provides appropriate noise mitigation measures. Furthermore, the Applicant will continue to work with Westmorland and Furness Council through detailed design. An updated Statement of Common Ground with Westmorland and Furness District Council (Document Reference 4.5, REP8-025) was submitted at Deadline 8.
5.192	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 Applicant team and Applicant have consulted with Natural England with regard to assessment of noise of designated nature conservation sites, protected landscapes and protected species or other wildlife. Details of this consultation are set out in ES Chapter 6 (Biodiversity). Chapter 6 also includes an assessment of the effects of noise and vibration on ecological receptors based on the results presented in Appendix 12.6 (Noise and Vibration Results at Ecology Receptors) of the ES (Application Document 3.3). The locations of the ecological receptors are shown in Figure 12.8 (Noise and Vibration Assessment – Location of Ecology Receptors) of the ES (Document Reference 3.4, APP-216). This identifies that construction activities including vehicle and personnel movements, noise and vibration may have potential impacts on sensitive species such as breeding and over-

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		wintering birds, roosting bats and other mammals such as otters. Essential mitigation and enhancement as outlined in Chapter 6 (Biodiversity) of the ES presents measures to ensure no significant effects are anticipated on Biodiversity. There are no matters still under discussion or not yet agreed with Natural England in relation to noise. The Statement of Common Ground with Natural England was updated during the Examination and the final draft submitted at Deadline 9 (Document Reference 4.5). The final draft of the Environmental Management Plan (Document Reference 2.7) secures the various mitigation measures to environmental impacts. The final draft of EMP Annex B5 Noise and Vibration Management Plan [**REP8-014**] was also updated during the Examination and submitted at Deadline 8.
5.193	Developments must be undertaken in accordance with statutory requirements for noise. Due regard must have been given to the relevant sections of the Noise Policy Statement for England, National Planning Policy Framework and the Government's associated planning guidance on noise.	The Project has been assessed in accordance with the relevant statutory requirements for noise. Equally, due regard has been given to the relevant sections of the Noise Policy Statement for England ('NPSE'), NPPF, NNNPS and related policy and guidance documents. Details of Government policies and guidance used in the assessment are provided in section 12.3 of Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4).
5.194	The Project should demonstrate good design through optimisation of scheme layout to minimise noise emissions and, where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission. The Project should also consider the need for the mitigation of impacts elsewhere on the road and rail networks that have been identified as arising from the development, according to Government policy.	The Applicant has incorporated mitigation measures which are proportionate and reasonable. Good design of these measures is considered throughout Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4) and discussed in full detail at section 12.9 of that chapter. Measures include Best Practicable Means during construction and low-noise surfacing, alignment, landscaping bunds and cutting for operation. Measures also include noise mitigation measures for the operation of the Project which include reflective barriers proposed for a number of properties and a proposed embankment on the north end of the village at Kirkby Thore. Impacts elsewhere along the route will be mitigated and enhanced through measures such as installation of 2-4m barriers along the perimeter of the receptor and earthworks embedded into the design such as combinations of cutting and earth bund. There are 109 receptors located in-between schemes or close to roads predicted to experience a significant permanent beneficial effect as a result of the operation of the Project. These receptors are located around

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		Cliburn and Bolton (alongside Whetheriggs and Chapel Street to the south-east of Penrith), Barnard Castle (alongside A67 and Newgate), Ravensworth (alongside Waitlands Lane and Stonygate Bank) and Richmond (alongside Gallowgate). A further 28 non-residential receptors are predicted to experience a significant permanent beneficial effect as a result of the operation of the Project. These receptors are located in Barnard Castle and Richmond. Please see update to paragraph 5.169 above
5.195	The Secretary of State should not grant development consent unless satisfied that the proposals will meet, the following aims, within the context of Government policy on sustainable development: · avoid significant adverse impacts on health and quality of life from noise as a result of the new development; · mitigate and minimise other adverse impacts on health and quality of life from noise from the new development; and · contribute to improvements to health and quality of life through the effective management and control of noise, where possible.	Assessments have been conducted in conformity with the NPSE and related policy and guidance documents. The Project meets the aims listed with the paragraph as defined within Chapter 12 (Noise and Vibration) (Document Reference 3.2, APP-055) and is shown to meet the stated aims at Table 12-46 of that Chapter. This is as follows: ***Aim 1: Avoid significant adverse impacts on health and quality of life from noise (NPSE describes this aim in relation to impacts above the SOAEL)*** The road alignment, design and implementation of mitigation measures aim to avoid significant adverse effects from construction noise and vibration. In instances where significant adverse effects cannot be avoided further measures have been considered to mitigate and minimise such effects. The methods to control noise and vibration are provided in the EMP and the NVMP (Application Document 2.7). Construction Residual significant adverse effects have been reported in this assessment for construction noise and vibration. Where it is practicable and sustainable, further mitigation will be considered to avoid significant effects as part of the NVMP and Section 61 applications that will be prepared as required by the EMP (Application Document 2.7) following engagement with local authorities and stakeholders. Operation Residual significant adverse effects are also predicted for operational noise. A total of 17 residential receptors and 5 non-residential receptors will experience significant adverse effects above the SOAEL. Four residential receptors are identified as potential qualifiers for noise insulation.

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		Operational significant adverse effects will be minimised as far as practicable and sustainable through scheme design and embedded mitigation, including scheme alignment and the use of lower noise road surface and noise screening where it is sustainable to do so. For receptors with a predicted operational significant adverse effect, the viability has been assessed of providing a noise barrier in the form of a fence to avoid these significant effects. Details of the process are presented in section 12.9.6 - 12.9.10. Table 12 20: Noise mitigation measures for operation of the scheme, summarises the essential mitigation assessed to be practicable and sustainable. Where appropriate, the potential fence noise barriers set out in Table 12 20: Noise mitigation measures for operation of the scheme and identified within the EMP (Application Document 2.7), and in the Application Change ES Addendum will need to be discussed with relevant stakeholders (including, where appropriate, property owners) before they can be implemented as the decision to install a barrier needs to consider the potential visual and aesthetic impacts as well as the noise benefits. The significant effects identified in the assessment are likely to be avoided if the barrier was implemented (where sustainable to do so). Noise insulation will be offered to eligible properties where appropriate to avoid indoor significant adverse effects, however, this does not alter the assessment of overall significance of effect at these receptors. ***Aim 2: Mitigate and minimise other adverse impacts on health and quality of life from noise (NPSE describes this aim in relation to impacts between the LOAEL and SOAEL)*** Adverse noise and vibration impacts during the construction phase will be mitigated and minimised through BPM as detailed within the EMP and NVMP (Application Document 2.7). Adverse impacts from operational noise have been identified at sensitive receptors which will be subject to noise levels between LOAEL and SOAEL. Impacts are minimised as far as practicable and sustainable through scheme design and embedded mitigation, including scheme alignment and the use of lower noise road surface and noise screening. Where sustainable to do so, the viability of providing a noise barrier in the form of a fence has been assessed. Details of the process are presented in section 12.9.6 - 12.9.10. Table 12 20: Noise mitigation measures for operation of the scheme summarises the essential mitigation assessed to be practicable and sustainable.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		The potential barriers set out in Table 12 20: Noise mitigation measures for operation of the scheme and identified within the EMP (Application Document 2.7), will need to be discussed and agreed with relevant stakeholders (including, where appropriate, property owners) before they can be implemented as the decision to install a barrier needs to consider the potential visual and aesthetic impacts as well as the noise benefits. Some residual adverse effects for operational noise between the LOAEL and SOAEL have been identified in this assessment in spite of the proposed mitigation measures. ***Aim 3: Contribute to improvements to health and quality of life through the effective management and control of noise where possible. (This applies to all noise levels)*** As a result of the Project's alignment selection and decrease in traffic flows on bypassed roads, significant beneficial effects have been identified at 408 residential receptors and 46 non-residential receptors. Noise levels within three NIAs are predicted to experience a reduction in noise as a result of the Project. Of the 408 residential receptors, the Project will reduce the operational noise levels at 140 properties from above the SOAEL to between LOAEL and SOAEL. 18 residential receptors are predicted to be subject to beneficial significant effects but noise levels will remain above SOAEL. 250 residential receptors between LOAEL and SOAEL are predicted to be subject to significant beneficial effects. For non-residential receptors, there are 34 receptors above SOAEL and with the operation of the Project are predicted to be subject to noise levels between LOAEL and SOAEL. Two non-residential receptors are predicted to be subject to beneficial significant effects but noise levels will remain above SOAEL. There are 10 non-residential receptors between LOAEL and SOAEL which are predicted to experience a significant beneficial effect. Based upon the above, the Project meets the aims of paragraph 5.195 of the NNNPS. Matters relating to noise were discussed at Issue Specific Hearings 1 (ISH1) and Issue Specific Hearing 2 (ISH2). See Issue Specific Hearing 1 (ISH1) Post Hearing Submissions - Response to Examining Authority's Request Under Agenda Item 2.1: The Sills Complementary Environmental Consideration (REP3-044) and Issue Specific Hearing 2 (ISH2) Post Hearing Submissions (Document Reference [REP1-009]).

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		As part of consideration of the impact of additional traffic on the Sills, including noise impact, ISH1 Note - Response to Agenda Item 2.1 - The Sills, concluded that an adverse significant effect is unlikely to occur at any of the properties along the Sills or the pedestrian walkways, consistent with the aims of the NNNPS.
5.196	In determining an application, the Secretary of State should consider whether requirements are needed which specify that the mitigation measures put forward by the applicant are put in place to ensure that the noise levels from the Project do not exceed those described in the assessment or any other estimates on which the decision was based.	Mitigation measures form part of the DCO submission. Section 12.9 of Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4) sets out the essential mitigation for construction and operational noise, also specified in the EMP forming part of the Appendices of the ES (Application Documents 3.2-3.4). This document is secured as part of the DCO application and will be used by the Principal Contractor during the detailed design phase. During the Examination, various clarifications have been added to the noise and vibration mitigation measures specified in the REAC table for EMP Annex B5 Noise and Vibration Management Plan (Document Reference 2.7, REP8-013) though no fundamental changes have been made. The final version of the EMP was issued at Deadline 9 (Document Reference 2.7).
5.197	The Examining Authority and the Secretary of State should consider whether mitigation measures are needed both for operational and construction noise over and above any which may form part of the Project application. The Secretary of State may wish to impose requirements to ensure delivery of all mitigation measures.	As per NNNPS paragraph 5.196 above.
5.198	Mitigation measures for the Project should be proportionate and reasonable and may include one or more of the following: · engineering: containment of noise generated; · materials: use of materials that reduce noise, (for example low noise road surfacing); · lay-out: adequate distance between source and noise-sensitive receptors; incorporating good	As per the response to NNNPS paragraph 5.194 above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	design to minimise noise transmission through screening by natural or purpose built barriers; · administration: specifying acceptable noise limits or times of use (e.g., in the case of railway station PA systems).	
5.199	For most national network Projects, the relevant Noise Insulation Regulations will apply. These place a duty on and provide powers to the relevant authority to offer noise mitigation through improved sound insulation to dwellings, with associated ventilation to deal with both construction and operational noise. An indication of the likely eligibility for such compensation should be included in the assessment. In extreme cases, the applicant may consider it appropriate to provide noise mitigation through the compulsory acquisition of affected properties in order to gain consent for what might otherwise be unacceptable development. Where mitigation is proposed to be dealt with through compulsory acquisition, such properties would have to be included within the development consent order land in relation to which compulsory acquisition powers are being sought.	The Project has considered noise insulation measures. Section 12.3 (Legislation) of Chapter 12 (Noise and Vibration) of the ES (Application Document 3.2-3.4) confirms that the Noise Insulation Regulations 1975 have been considered. Noise insulation is considered in paragraphs 12.9.5, 12.9.10 and 12.9.11 with likely eligible properties identified at paragraph 12.10.23 at Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4). Best Practicable Means ('BPM') is assumed as essential mitigation and will be implemented to control construction noise, including in the form of low noise emission plant and processes (as specified in *BS 5228-1 Annex B - Noise sources, remedies and their effectiveness*) If situations arise where, despite the implementation of BPM, the noise exposure exceeds the criteria defined in the EMP, the Principal Contractor(s) may offer noise insulation to affected properties or ultimately, temporary re-housing. However, it is not anticipated that the latter will be required for this Project. The DCO will secure these measures as part of the EMP to ensure that all noise controls are implemented which will also include verification of the effectiveness of any installed mitigation measures.
5.200	Applicants should consider opportunities to address the noise issues associated with the Important Areas as identified through the noise action planning process.	The Project has reviewed and considered opportunities to address any noise issues associated with the NIAs as identified through the noise action planning process. NIAs are discussed in section 12.10 of Chapter 12 (Noise and Vibration) of the ES (Application Documents 3.2-3.4). All but one of the NIAs identified are shown to experience a decrease in noise levels from the unmitigated Project. The exception being the NIA at M6 Junction 40 to Penrith Kemplay Bank. The Project has been designed to avoid and minimise potential adverse noise and vibration effects through the process of design development and consideration of good design

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		principles. All design and embedded mitigation measures for noise and vibration impacts, for example, the road alignment, cuttings, low noise road surfacing and landscaped earthworks to mitigate visual impact and reduce noise, are reported within Chapter 4 (Environmental Assessment Methodology) of the ES (Application Documents 3.2-3.4). As such, the Project has addressed noise issues through the noise action planning process.
Impact on transport networks - MS		
5.203-5.205	Applicants should have regard to the policies set out in local plans, for example, policies on demand management being undertaken at the local level. Applicants should consult the relevant highway authority, and local planning authority, as appropriate, on the assessment of transport impacts. Applicants should consider reasonable opportunities to support other transport modes in developing infrastructure. As part of this, consistent with paragraph 3.19-3.22 above, 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.	The Applicant has had regard to the policies set out in the relevant host authorities local plans. Equally, the applicant has engaged in discussions with the relevant highways authorities (NYCC, DCC and CCC) at all stages of the development of the Project. The relevant policies set out within these local plans have been set out at Appendix B of this document. The Project's design has incorporated all reasonable opportunities to support other transport modes in developing its infrastructure. This includes public transport users and WCH users. Full details regarding WCH provision for each scheme has been set out in the Walking, Cycling and Horse Riding Proposals report (Application Document 2.4). These proposals ensure that severance issues have been addressed and incorporated into the Project's design – resulting in an east to west WCH connection along the A66 schemes. Any matters not agreed between National Highways and the LAs and SEBs in relation to traffic impact are identified within the Statements of Common Ground with the relevant local authority (see Statements of Common Ground submitted at Deadline 8)), These are limited to two issues with Westmoreland and Furness Council which the applicant considers can be addressed through provision of the CTMP or through the detailed design process, as set out below: - Traffic Management for Appleby Horse Fair. This will be addressed through the CTMP, which in turn will enable W&FC to update their Appleby Horse Fair Traffic Management Plan during the Construction period should this be required..(Issue 3-2-3 of Issues not Agreed within the Westmoreland & Furness Council SoCG - REP8-025) - North-South Connectivity - Brougham Castle and Eamont Bridge. The Applicant has set out what is considered to be the optimal solution for traffic management on these road and junctions with the aim of improving road safety. The Applicant will continue to engage with W&FC on this issue of traffic impact and management at Brougham Castle and Eamont

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Bridge (Issue 3-2-1 of Issues not Agreed within the Westmoreland & Furness Council SoCG - REP8-025) The Council's issues on Brougham Castle and Eamont Bridge are also set out at paragraphs 4.11-4.13 of the Council's LIR (REP1-019) and are addressed in the Applicant's Comments on Local Impact Report (Document Reference 7.9, REP2-018), at paragraphs 2.3.8-2.3.10. The Applicant is also aware that Westmorland and Furness Council has some outstanding comments regarding connection at Coupland Beck at the western end of Scheme 6. These comments, together with the Applicant's position on them, are as set out in the SoCG with Westmorland and Furness Council [Document Reference 4.5, REP8-025] (see 3-2.4 ot Table 3.2 – Record of Issues Not Agreed of the SoCG). Other issues on WCH proposals are agreed with the Councils and/or addressed through commitments within the SoCGs. For example within the SoCG with W&FC it states at 3-2.9 of Table 3-2 (Record of Issues Not Agreed) that the Applicant ."... have also discussed with the Councils some localised opportunities to work together on 'designated funds' opportunities to address particular issues on the existing A66 where sections may be de-trunked. These particular requests are outside of the scope of the A66 NTP. We would welcome the possibility of submitting joint applications* wherever possible." * relates to applications for designated funds
5.206	For road and rail developments, if a development is subject to EIA and is likely to have significant environmental impacts arising from impacts on transport networks, the applicant's environmental statement should describe those impacts and mitigating commitments. In all other cases the applicant's assessment should include a proportionate assessment of the transport impacts on other networks as part of the application.	The Project is accompanied by an ES (Application Documents 3.2-3.4), whereby any environmental impacts arising from the Project have been described and the required mitigation impacts considered and outlined. In addition, the Project is supported by a TA (Application Document 3.7), which considers the transport impacts of the Project on other networks. A number of issues were raised during the course of the Examination which related to traffic and transport issues [These have been considered by the Applicant during the examination and addressed as necessary. A summary of the Applicant's responses to these various issues is set out at paragraph 6.2.10. of the Closing Submissions [Document Reference 7.45, REP8-074].] None of these issues diminish or materially change the positive impact of the Project, as modelled and presented in the Transport Assessment [Document Reference 3.7, REP2-003].

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		A Construction Traffic Management Plan (CTMP) (Annex B13 of the EMP) has been updated during the Examination and the final draft submitted at Deadline 8 [REP8-015] Maters to be included in the CTMP are traffic management measures to be implemented and routes to be used by construction vehicles to access the Project.
5.208	Where appropriate, the applicant should prepare a travel plan including management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport and sustainable modes where relevant, to reduce the need for any parking associated with the proposal and to mitigate transport impacts.	The Project has considered management measures in order to mitigate transport impacts. Traffic Management Plans ('TMPs') that will be part of the EMP (Application Document 2.7) will be developed as detailed design progresses to enable the safe and smooth delivery of the Project. Key traffic management principles which will be reflected in the TMPs. Key principles include: • Formation of access points • Offline works • Traffic navigation in traffic management areas • Traffic navigation on new road lengths • Online working during less busy periods • Large activity road closures • Traffic management at junctions • Keeping traffic moving. It is likely that a Construction Worker and Accommodation Travel Plan will form part of the EMP (Application Document 2.7) and will be developed during detailed design and then managed through the construction process. This plan would determine how the construction teams manage worker travel and accommodation where required, within agreed limits to prevent impacts on stakeholders and local businesses. No operational Travel Plan is required, as the Project itself is not a source of transport impacts which would need to be addressed within a Travel Plan. The measures set out in the REAC table of the EMP for Construction Traffic Management Plan (CTMP) (Annex B13) and the Contrurction Worker Accommodation Travel Plan (CWATP) have been updated during the Examination.
5.209	For schemes impacting on the Strategic Road Network, applicants should have regard to DfT Circular 02/2013 The Strategic Road Network	The Project obviously impacts the SRN. As referenced in the TA (Document Reference 3.7, REP2-003), the applicant has had regard to DfT Circular 02/2013 in delivering sustainable

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	and the delivery of sustainable development (or prevailing policy) which sets out the way in which the highway authority for the Strategic Road Network, will engage with communities and the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the Strategic Road Network.	development. This is set out in further detail in chapters 3 and 10 of the TA. It is noted that DfT circular 02/2013 is no longer current and has been replaced by circular 01/2022 Stakeholder and public consultation has also been carried out during the development of the Project design, see the Consultation Report (Document Reference 4.4, APP-252). The design has continued to evolve following consultation feedback in order to bring forward sustainable development. The host local authorities in their Local Impact Report acknowledged the transport and economic benefits the project will bring, see update provided for paragraph 2.1 above.
5.210	If new transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by Government for any third-party benefits. Guidance has been issued in England which explains the circumstances where this may be possible. The Government cannot guarantee in advance that funding will be available for any given uncommitted scheme at any specified time and cannot provide financial support to a scheme that solely mitigates the impacts of a specific development. Any decisions on co-funded transport infrastructure will need to be taken in the context of the Government's wider policy of transport improvements.	The Funding Statement (Document Reference 5.6, APP-289) sets out the funding arrangements for the Project. The Project will be fully funded by the DfT and consequently the Project is not dependant on funding contributions from other parties. As referenced at paragraph 9.7.3 of the Closing Submissions [Document Reference 7.45, REP8-074] "…the Applicant notes the Ministerial Statement on 9 March 2023 which states that "in terms of major road investments, Road Investment Strategy (RIS) 2 schemes will continue to progress". One of the "major commitments to schemes for delivery" in RIS2 is "dualling the A66 between the A1(M) and the M6"
5.211	The Examining Authority and the Secretary of State should give due consideration to impacts on local transport networks and policies set out in local plans, for example, policies on demand management being undertaken at the local level.	This document at Appendices B, C, and D* provides a high-level assessment of the Project's strategic alignment with current planning policies as set out in the relevant local plans of NYCC, DCC, CCC, EDC and RDC. *Document referred to is the submitted version of the Legislation and Policy Compliance Statement [APP-242] The host local authorities in their Local Impact Reports [REP1-019, REP1-021, REP1-042] acknowledged the transport and economic benefits the Project will bring and how these align

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		with the transport and economic objectives and policies of strategies and plans of these authorities. Please see update provided for paragraph 2.1 above.
5.212	Schemes should be developed, and options considered in the light of relevant local policies and local plans, taking into account local models where appropriate, however the scheme must be decided in accordance with the NPS except to the extent that one or more of sub-sections 104(4) to 104(8) of the PA 2008 applies.	The Project has been designed and takes account of relevant local policies, local plans and local models where appropriate. These are considered in the policy conformity tables within Appendices C and D of this document. In addition, local models have been taken into account at section 7 (Forecast local network performance) of the TA (Document Reference 3.7, REP2-003) The Project has been reviewed against the NNNPS and is considered to be in accordance with the policies contained therein. A review of sub-sections 104(4) to 104(8) of the PA 2008 as they apply to the Project is set out in chapter 2 of this document and at chapter 7 of the CftP (Document Reference 2.2, APP-008). Please see update to paragraph 5.211 and 2.1 above.
5.215	Mitigation measures for schemes should be proportionate and reasonable, focussed on promoting sustainable development.	The ES (Application Documents 3.2-3.4) contains a full and robust assessment of the relevant impacts that are likely to arise from the Project, and where significant impacts are identified, sets out ways in which it is proposed that those impacts are avoided, reduced or mitigated. Those mitigation measures also take account of relevant policy, including the promotion of sustainable development. The measures set out in the REAC table of the EMP for Construction Traffic Management Plan (CTMP) (Annex B13) and the Contrurction Worker Accommodation Travel Plan (CWATP) have been updated during the Examination.
5.216	Where development would worsen accessibility, such impacts should be mitigated so far as reasonably possible. There is a very strong expectation that impacts on accessibility for non-motorised users should be mitigated.	The Project has incorporated the necessary mitigation measures to ensure that accessibility for non-motorised users has not worsened as a result of the Project. These are set out at section 9.5 of the TA (Document Reference 3.7, REP2-003). Please also see responses to paragraphs 3.16-3.17 and 3.22 of this Appendix in reference to severance for WCH users. Where PRoW are severed by or converge at the upgraded A66 carriageway, they have been gathered and redirected to the nearest grade-separated crossing facility in order to provide a safe place to cross the dual carriageway. The nearest crossing may be a new grade-separated junction, an accommodation underpass or overbridge, or a designated WCH underpass or bridge. All schemes have some level of betterment compared with the provision

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		on the existing single carriageway sections. For most schemes, this includes a parallel shared multi-user route segregated from the dual carriageway. This parallel provision is in the form of either a new path adjacent to the dualling or has been provided along the verge of the old de-trunked A66, where it remains. Please see Table 9-13 of the TA for full proposals referencing individual schemes. Issues on WCH proposals are agreed with the Councils and/or addressed through commitments within the SoCGs. For example within the SoCG with W&FC it states at 3-2.9 of Table 3-2 (Record of Issues Not Agreed) that the Applicant .".. have also discussed with the Councils some localised opportunities to work together on 'designated funds' opportunities to address particular issues on the existing A66 where sections may be de-trunked. These particular requests are outside of the scope of the A66 NTP. We would welcome the possibility of submitting joint applications wherever possible." Please see update to paragraph 5.203-5.205 above.
Water quality and resources		
5.220	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.	The Project crosses between three river basin management plan areas: the Solway Tweed, Northumbria and Humber, as referenced and described in Annex B of Appendix 14.1 (WFD Compliance Assessment) of Chapter 14 (Road Drainage and Water Environment) of the ES (Document Reference 3.4, APP-220). The Project has taken account of guidance relating to water quality, waste water and water quality as referenced at section 14.3 of Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4). These include, inter alia, the following: • Environment Agency (2021e). *Pollution prevention for businesses.* • Environment Agency (2021c). *Check if you need permission to do work on a river, flood defence or sea defence* • Environment Agency (2015). *Manage water on land: guidance for land managers* Essential mitigation and enhancement measures relating to pollution are set out within chapter 14 of the ES to ensure that water pollution is prevented. This include pollution mitigation measures to be incorporated within the drainage design. These measures are intended to ensure that both new and existing development doesn't contribute to or is put at unacceptable risk from water pollution.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		The effects of the design changes on the water environment (if any) were considered in the ES Addendum. The EMP identifies actions to ensure water quality, and this includes a water quality monitoring programme taking place prior to and during construction ot the Project (Ref M-RDWE-01). The Ground and Surface Water Management Plan is a commitment from the EMP as set out in the Environmental Actions and Commitments (which must be developed as part of a second iteration EMP). Agreement has been reached with the Environment Agency which led to updates to the EMP on road drainage and water environment and Annex B7 (the outline Ground and Surface Water Management Plan) (see SoCG – Application Document 4.5, Rev 5). Agreement has been reached with Westmorland and Furness Council that the assessment of effects on the water environment as submitted meets the technical requirements (see SoCG – Application Document 4.5, Rev 5). See the response to NNNPS paragraph 5.226 below as to consideration of River Basin Management Plans.
5.221	Applicants should make early contact with the relevant regulators, including the Environment Agency, for abstraction licensing and with water supply companies likely to supply the water. Where a development is subject to EIA and the development is likely to have significant adverse effects on the water environment, the applicant should ascertain the existing status of, and carry out an assessment of the impacts of the proposed Project on water quality, water resources and physical characteristics as part of the environmental statement.	The Applicant has made contact with the Environment Agency, and this is referenced within the Statement of Common Ground between National Highways and the Environment Agency (Application Document 4.5).The latest version was submitted at Deadline 8. Given the Project is subject to EIA, an assessment has been undertaken to ascertain whether the Project is likely to have significant adverse effects on the water environment as set out at Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4). With the implementation of mitigation, Chapter 14 of the ES concluded that with one exception, there would be no likely significant effects on the receiving water environment as a result of the Project during both construction and operation. The one exception noted is a residual significant effect during operation on the Flitholme Fen and Flitholme Woodland groundwater-dependent terrestrial ecosystems due to a loss or degradation of potential supporting habitats. Whilst mitigation will be implemented to seek to reduce this effect (through the creation of new habitat, as secured in the EMP), due to the nature of the design of the Project at this location, it is not currently possible to guarantee that impacts can be avoided.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		An assessment of the impacts of the proposed Project on water quality, water resources and physical characteristics is set out in the ES (sections 14.7, 14.8 and 14.10) and the following Appendices: • 14.1 WFD compliance assessment (Application Document 3.4) • 14.2 Water Quality Assessment (Application Document 3.4) • 14.4 Hydromorphology Assessment (Application Document 3.4) • 14.6 Hydrogeological Impact Assessment (Application Document 3.4) Mitigation measures to protect the water environment will be secured in the Project's EMP (Application Document 2.7).
5.222	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.	The Project involves improvements to existing infrastructure and has carefully considered opportunities to improve the quality of existing discharges as set out in Chapter 14 (Road Drainage and Water Environment) (Document Reference 3.2, APP-057) of the ES. The mitigation measures detailed in Appendix 14.1 (WFD Compliance Assessment) of the ES (Document Reference 3.4, APP-220) include new drainage outfalls to appropriately manage surface water and sediment run off prior to discharge to the watercourse, amongst other measures. This represents such an improvement opportunity. As reported in the Closing Statement, the Applicant also submitted the WFD Compliance Assessment (Document Reference 3.4, APP-220) with the application and with the Change Application Environmental Statement Addendum (Document Reference 8.3, REP7-169). The WFD Compliance Assessment concluded there would be no WFD compliance issues remaining following the implementation of mitigation. The relevant mitigation measures, including the parameters of the drainage design, are secured in the first iteration EMP and, to an extent, in the Project Design Principles.
5.223	Any environmental statement should describe: · the existing quality of waters affected by the proposed Project; · existing water resources affected by the proposed Project and the impacts of the proposed Project on water resources;	Chapter 14 (Road Drainage and the Water Environment) of the ES (Application Documents 3.2-3.4) and its accompanying appendices meet the requirements of NNNPS paragraph 5.223 as follows: Existing quality of waters, water resources and assessment of impact on these is included at sections 14.7, 14.8 and 14.10 of Chapter 14. Existing physical characteristics of the water environment are included in Appendix 14.1 (WFD Compliance Assessment) (Application Document 3.4), Appendix 14.4 (Hydromorpology

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	· existing physical characteristics of the water environment (including quantity and dynamics of flow) affected by the proposed Project, and any impact of physical modifications to these characteristics; · any impacts of the proposed Project on water bodies or protected areas under the Water Framework Directive and source protection zones (SPZs) around potable groundwater abstractions; and · any cumulative effects.	Assessment) (Application Document 3.4) and Appendix 14.6 (Hydrogeological Impact Assessment) (Application Document 3.4) of Chapter 14 (Road Drainage and Water Environment) of the ES. Impacts on WFD waterbodies/protected areas is considered in the WFD Compliance Assessment and impacts on SPZs are considered in the Hydrogeological Impact Assessment. Chapter 15 (Cumulative Effects) of the ES (Application Documents 3.2-3.4) addresses the cumulative effects of the Project. In reference to water quality, there are no significant cumulative effects anticipated which would result in any new or materially different significant effects to those identified in each environmental factor chapter of the ES (chapters 5-14).
5.224	Activities that discharge to the water environment are subject to pollution control. The considerations set out in paragraphs 4.48-4.56 on the interface between planning and pollution control therefore apply. These considerations will also apply in an analogous way to the abstraction licensing regime regulating activities that take water from the water environment, and to the control regimes relating to works to, and structures in, on, or under a controlled water.	The Project has considered activities that discharge into the water environment. The Consents and Agreements Position Statement (Application Document 5.4) identifies the separate water related consents that will be pursued separate from and subsequent to the DCO application. These include: • Discharge to controlled waters as a water discharge activity under the Environmental Permitting (England and Wales) Regulations 2016. • Abstraction under section 24 of the Water Resources Act 1991. The Applicant has been discussing protective provisions for inclusion in the DCO with the EA and Lead Local Flood Authorities. The Expanatory Memorandum submitted at Deadline 9 which provides an update on the protective provisions and consents under section 150 Planning Act 2008.
5.225	The Secretary of State will generally need to give impacts on the water environment more weight where a Project would have adverse effects on the achievement of the environmental objectives established under the Water Framework Directive.	The WFD Compliance Statement (Appendix 14.1 of the ES) (Application Document 3.4) concludes that the Project has the potential to have an adverse effect on 9 surface waterbodies with the potential to cause a deterioration in the current status of those waterbodies. Therefore, additional mitigation has been identified with the aim to ensure no residual risk of status deterioration within the surface water bodies identified at section 14.1.17 of the WFD Compliance Statement. This includes measures identified in Appendix 14.11 (Non-Significant

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		Effects) (ES Volume 3, Application Document 3.4) and Appendix 6.17 (Fish Habitat Assessment and Modular River Physical Survey 'MoRPh') (ES Volume 3, Application Document 3.4) and WFD additional mitigation comprising low flow channel creation, bank reprofiling, removal of existing structures, wetland habitat creation/improving floodplain connectivity and buffer strips. These details are set out at section 14.1.19 of the WFD Compliance Statement (Appendix 14.1) (Application Document 3.4). The additional mitigation measures identified following the WFD assessment are considered appropriate to mitigate the identified potential adverse effects. As such, the potential for residual adverse overall effects associated with the risk of preventing the future achievement of status objectives of these surface water bodies is not considered to remain at this stage. The WFD assessment should be reviewed and updated at the detailed design stage to ensure all scheme component details are assessed and their potential affects identified and mitigated where necessary. This will be undertaken in consultation with the Environment Agency. As such, the Project would not have adverse effects on the achievement of the environmental objectives under the WFD. The Statement of Common Ground between National Highways and the Environment Agency (Application Document 4.5, Rev 5) show that there are no matters not agreed or under discussion relating to water quality and resources.
5.226	The Secretary of State should be satisfied that a proposal has had regard to the River Basin Management Plans and the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. The specific objectives for particular river basins are set out in River Basin Management Plans. In terms of Water Framework Directive compliance, the overall aim of Projects should be no deterioration of ecological status in watercourses, ensuring that Article 4.7 of the Water Framework Directive Regulations does not need to be applied. The Secretary of State should also consider the interactions of the	The Project has considered River Basin Management Plans as part of the Baseline Conditions reviewed in section 14.7, Chapter 14 (Road Drainage and Water Environment) of the ES (Application Documents 3.2-3.4). A WFD Assessment has been carried out and is included at Appendix 14.1 of the ES (Application Document 3.4) as discussed in paragraph 5.225 of this appendix above.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	proposed Project with other plans such as Water Resources Management Plans, Shoreline/Estuary Management Plans and Marine Plans.	
5.227	The Examining Authority and the Secretary of State should consider proposals put forward by the applicant to mitigate adverse effects on the water environment and whether appropriate requirements should be attached to any development consent and/or planning obligations. If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of impacts on water quality/resources, the Secretary of State can grant consent, but will need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try to resolve the concerns, and that the Environment Agency is satisfied with the outcome.	As set out within Appendix 14.1 (WFD Compliance Assessment) of the ES (Application Document 3.4), the additional mitigation measures identified are considered appropriate to mitigate the identified potential adverse effects. Please see the response to NNNPS paragraph 5.225 above for a summary of potential adverse effects on waterbodies and the additional ecological and WFD additional mitigation measures proposed. The additional mitigation measures identified are considered appropriate to mitigate the identified potential adverse effects. As such, the potential for residual adverse overall effects associated with the risk of preventing the future achievement of status objectives of these surface water bodies is not considered to remain at this stage. The Environment Agency does not object to the proposed development as at the date of drafting and the Applicant will continue to liaise with the Environment Agency as the Project progresses, as set out in Statement of Commonality and Statements of Common Ground between National Highways and the Environment Agency (Application Document 4.5), including in reviewing the WFD Compliance Assessment and updating it at the detailed design stage.
5.229	The Secretary of State should consider whether the mitigation measures put forward by the applicant which are needed for operation and construction (and which are over and above any which may form part of the Project application) are acceptable. A construction management plan may help codify mitigation.	An EMP (Application Document 2.7) forms part of the DCO application which defines the necessary operational and construction mitigation measures proposed to be implemented as part of the Project. These mitigation measures are considered acceptable in allowing the Project to come forward.
5.230	The Project should adhere to any National Standards for sustainable drainage systems (SuDS). The National SuDS Standards will introduce a hierarchical approach to drainage	Appendix 14.2 (Flood Risk Assessment and Outline Drainage Strategy) of the ES (Application Document 3.4) confirms that the relevant guidance relating to National Standards for SuDs have been considered in the design of the Project.

NPS paragraph	Requirement of NPS	Compliance with NNNPS
	design that promotes the most sustainable approach but recognises feasibility, and use of conventional drainage systems as part of a sustainable solution for any given site given its constraints.	These standards include: • Design Manual from Roads and Bridges ('DMRB') *LA 113 Road drainage and the water environment (DMRB LA 113)* (National Highways, 2020) • CCC Development Design Guide (CCC, 2017) • DCC Sustainable Drainage System Adoption Guide 2016 (DCC, 2016) • NYCC SuDS Design Guidance (NYCC, 2018) • Construction Industry Research and Information Association (CIRIA) The SuDS Manual (C753) (Construction Industry Research and Information Association, 2015)
5.231	The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution control practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be marked clearly.	Section 14.9 of Chapter 14 (Road Drainage and Water Environment) of the ES sets out the essential mitigation and enhancement measures to be implemented during the construction and operation of the Project. These measures ensure that the risk of impacts upon the water environment have been reduced through the necessary design measures. Further operation and construction mitigation is included in the EMP at Annex 7, Ground and Surface water management plan (Application Document 2.7) and secured by a requirement of the DCO. Further details regarding design principles are set out in the Project Design Principles report (Application Document 5.11). In reference to drainage strategy and highways design, highway drainage for trunk and side roads has been designed in conformity with the DMRB. The A66 mainline and slip road drainage systems will be adopted and maintained by National Highways. The side road drainage systems will be adopted and maintained by the local highway authority. Road drainage for the Project for both the mainline and side roads will be managed using a series of attenuation basins. Proposed locations and layouts of ponds are shown on Figures 2.1 (M6 Junction 40 to Kemplay Bank) to Figure 2.8 (A1(M) Junction 53 Scotch Corner) (Application Document 3.3). The design of the ponds will be refined through detailed design within the limitations set out in the DCO. The Applicant has also updated the wording the Project Design Principles (Document Reference 5.11, Rev 5) submitted into the Examination to address concerns and comments

NPS paragraph	Requirement of NPS	Compliance with NNNPS
		from the Environment Agency on water quality and resources See SoCG between with the Environment Agency (Application Document 4.5, Rev 5)).

Abbreviations

Abbreviation	In full
AD	Anno Domini (in the year of our Lord)
ADMS	Advanced Dispersion Modelling System
ALC	Agricultural Land Classification
AM	Ante meridiem (morning)
AONB	Area of Outstanding Natural Beauty
ARN	Affected Route Network
AQMA	Air Quality Management Area
BCA	Broad Character Areas
BCR	Benefit Cost Ratio
BCT	Bat Conservation Trust
BLT	Broad Landscape Types
BMV	Best and Most Versatile
BNG	Biodiversity Net Gain
BNGO	Biodiversity Net Gain Objective
BNL	Basic Noise Level
BPM	Best Practice Measures
BS	British Standard
CCC	Cumbria County Council
CCR	Climate Change Risk
CHER	Cumbria's Historic Environment Record
CIRIA	Construction Industry Research and Information Association
CO2	Carbon Dioxide
COBALT	Cost and Benefit to Accidents – Light Touch
ComMA	Combined Modelling and Appraisal
CftP	Case for the Project
CWS	County Wildlife Site
DCC	Durham County Council
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
DfT	Department for Transport
DHER	Durham's Historic Environment Record
DMRB	Design Manual for Roads and Bridges
EC	European Commission
ECoW	Ecological Clerk of Works
EDC	Eden District Council
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
EMP	Environmental Management Plan
EPSL	European Protected Species Licensing
EqIA	Equality Impact Assessment
ES	Environmental Statement
EU	European Union
EV	Electric Vehicle
FRA	Flood Risk Assessment
GB	Great Britain
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIR	Ground Investigation Report
GVA	Gross Value Added
GWDTE	Groundwater Dependant Terrestrial Ecosystems
ha	Hectare

Abbreviation	In full
HER	Historic Environment Record
HEWRAT	Highways England Water Risk Assessment Tool
HGV	Heavy Goods Vehicle
HM	Her Majesty's
HRA	Habitats Regulations Assessment
ICCI	In Combination Climate Impacts
IPD	Infrastructure Planning (Decisions) Regulations 2010/305
IROPI	Imperative Reasons of Overriding Public Interest
km	Kilometre (Unit of Measurement)
LA	Local Authorities
LCA	Landscape Character Assessment
LEP	Local Enterprise Partnership
LEMP	Landscape and Ecological Management Plan
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LOAEL	Lowest Observed Adverse Effect Level
LPA	Local Planning Authority
LSOA	Lower-layer Super Output Area
LV	Air Quality Directive Limit Values
LWS	Local Wildlife Site
m	Metres (Unit of Measurement)
MAFF	Ministry of Agriculture Fisheries and Food
MCA	Minerals Consultation Atea
mm	Millimetres
MoD	Ministry of Defence
MoRPh	Modular River Physical Survey
mph	Miles per hour
MSA	Mineral Safeguarding Areas
MyRIAD	Motorway Reliability Incidents and Delays
NCA	National Character Areas
NCN	National Cycle Network
NERC	Natural Environment and Rural Communities Act
NHLE	National Heritage List England
NIA	Noise Important Area
NIDP	National Infrastructure Delivery Plan
NMU	Non-Motorised Users
NN NPS	National Networks National Policy Statement
NNR	National Nature Reserve
NO	Nitrogen Oxide
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NPSE	Noise Policy Statement for England
NRTM	Northern Regional Traffic Model
NSIP	Nationally Significant Infrastructure Project
NTEM	National Trip End Model
NTP	Northern Trans-Pennine
NTPR	Northern Trans-Pennine Routes
NTPRSS	Northern Trans-Pennine Routes Strategic Study
NTS	Non-Technical Summary
NVMP	Noise and Vibration Management Plan
NYCC	North Yorkshire County Council

Abbreviation	In full
NYHER	North Yorkshire's Historic Environment Record
OBC	Outline Business Case
PA 2008	The Planning Act 2008
PC	Principal Contractor
PCF	Project Control Framework
PCM	Pollution Control Mapping
PCPA 2004	Planning and Compulsory Purchase Act 2004
PDOR	Project Development Overview Report
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PM2.5	Particulate Matter 2.5 micrometres or less in diameter
PM10	Particulate Matter 10 micrometres or less in diameter
PRA	Preferred Route Announcement
PRoW	Public Rights of Way
PSED	Public Sector Equality Duty
PSSR	Primary Sources Study Report
RCP	Representative Concentration Pathways
RDC	Richmondshire District Council
RIGS	Regionally Important Geological Sites
RIS	Road Investment Strategy
RIS1	Road Investment Strategy Period 1
RIS2	Road Investment Strategy Period 2
RSPB	Royal Society for the Protection of Birds
RTM	Regional Traffic Model
RRRA	Roman Roads Research Association
RSA	Road Safety Audit
SAC	Special Area of Conservation
SEP	Strategic Economic Plan
SoS	Secretary of State
SOAEL	Significant Observed Adverse Effect Level
SPA	Special Protection Area
SPD	Supplementary Planning Documents
SPZ	Source Protection Zone
SRN	Strategic Road Network
SSSI	Site of Special Scientific Interest
STP	Strategic Transport Plan
SuDS	Sustainable Drainage Strategy
SWMP	Site Waste Management Plan
TA	Transport Assessment
TAG	Transport Analysis Guidance
TCPA 1990	Town and Country Planning Act 1990 (as amended)
TfN	Transport for North
TMP	Traffic Management Plan
TTV	Travel Time Variability
TVCA	Tees Valley Combined Authority
UK	United Kingdom
UKCP18	United Kingdom Climate Projections 18
UNESCO	United National Educational, Scientific and Cultural Organization
WEEE	Waste Electrical and Electronic Equipment
WebTAG	Transport Analysis Guidance
WEI	Wider Economic Impact
WCA	Wildlife and Countryside Act 1981
WCH	Walkers, Cyclists and Horse-Riders

Abbreviation	In full
WCHAR	Walking, Cycling Horse Riding Assessment and Review
WFD	Water Framework Directive
WHS	World Heritage Site
WTA	Warcop Training Area
ZoI	Zone of Influence

Glossary

Term	Definition
Accommodation overpass/underpass /structure	A bridge under or over the A66 that serves an affected area of land or property, not considered a public highway.
Accommodation/access road or track	A new or altered access road or track serving an affected area of land or property, not considered a public highway.
(The) Act	The Planning Act 2008
Affected Road Network (ARN)	Those roads within the traffic reliability area which, in the opening year of the project, meet specific criteria set out in DMRB.
Agricultural Land Classification (ALC)	A relative measure of agricultural land quality in England and Wales. In practice, the ALC grades are defined by reference to the land's physical characteristics. The most productive and flexible land falls into Grades 1 & 2 and Subgrade, 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. The remainder is very poor-quality land in Grade 5, which mostly occurs in the uplands.
Air quality limit value	A maximum concentration to be achieved in the atmosphere, either without exception or with a permitted number of exceedances. Limit values are defined in European Union Directives and implemented in UK legislation.
Air Quality Management Area (AQMA)	An area within a local authority boundary where the air quality objectives are not likely to be achieved. The local authority is required to declare the area as an air quality management area and to prepare a local air quality action plan.
Air quality objectives (AQO)	Policy targets generally expressed as a maximum ambient pollutant concentration to be achieved. The objectives are set out in the UK Government's Air Quality Strategy (Department for Environment Food & Rural Affairs, 2007)1 for the key air pollutants.
Air quality standard	Air quality limit values and objectives.
Alluvial deposits	Natural materials deposited within and adjacent to rivers.
Amenity	The relative pleasantness of a journey, or the ability of communities to achieve enjoyment and/or quality of life.
Ancient Trees	One that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species
Ancient woodland (AW)	Land that has been continually wooded since at least 1600 AD.
Applicant	National Highways
Application	This refers to an application for a Development Consent Order. An application consists of a series of documents and plans which are submitted to the Planning Inspectorate and published on its website.
Appraisal	A process that looks at the worth of a course of action.
Appropriate Assessment	An assessment required by the Habitats Directive and Regulations where a project (or plan) would be likely to have

[1] Department for Environment Food & Rural Affairs (2008) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf [accessed 9 September 2021]

Term	Definition
	a significant effect on a European site, either alone or in combination with other plans or projects (part of the Habitats Regulations Assessment process).
Area of Outstanding Natural Beauty (AONB)	An area designated under Section 82(1) of the Countryside and Rights of Way Act 2000 for the purpose of conserving and enhancing its natural beauty.
Assessment	A process by which information about effects of a proposed plan, project or intervention is collected, assessed and used to inform decision-making.
Attenuation	The term used in drainage design to indicate a reduction in the rate of flow or flooding risk, for example, by means of a pond to hold back water.
Balancing pond	Part of a drainage system that is used to temporarily store, and thereby attenuate, the flow of surface water run-off.
Baseline	Existing environmental conditions present on, or near a site, against which future changes can be measured or predicted.
Benefit Cost Ratio (BCR)	The benefit cost ratio is a presentation of the amount of benefit being bought for every £1 of cost to the public purse – the higher the BCR the greater the benefit for every £1 spent.
Best and most versatile (BMV) land	Land defined as grade 1, 2 or 3a of the Agricultural Land Classification. This land is considered the most flexible, productive and efficient and is most capable of delivering crops for food and non-food uses.
Best Practicable Means (BPM)	Defined in the Control of Pollution Act 1974 and Environmental Protection Act 1990. Used to describe measures that are 'reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications'.
Biodiversity	Biological diversity: The variety of life forms in a given area, includes all species of plants and animals, their genetic variation and the complex ecosystems of which they are part.
Biodiversity Action Plan (BAP)	A nationally established programme that seeks to protect and restore threatened species, habitats and biological systems.
Borehole	A hole bored into the ground, usually as part of investigations, typically to test the depth and quality of soil, rock and groundwater. A borehole can also be used to dewater the ground or for a water supply.
Buildability advisors	Provide buildability advice on all aspects of construction and delivery and inputting into the scheme estimates.
Bund	An embankment structure
Carbon Budget	A carbon budget places a restriction on the total amount of greenhouse gases the UK can emit over a 5-year period
Compensation	Measures taken to offset or compensate for residual adverse effects that cannot be mitigated, or for which mitigation cannot entirely eliminate.
Conformity Table	Table demonstrating the Project's conformity with the NNNPS.
Common Land	Common land is owned, for example by a local council, privately or by the National Trust.
Consent	A statutory permission given to an applicant by a statutory authority, such as the local planning authority or the Secretary of State, that allows a development to be carried out within a specific area of land.

Term	Definition
Conservation Area	Defined at Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 as those parts of a local planning authority area of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance.
Consultation	A process by which regulatory authorities, statutory and non-statutory bodies, local authorities, local communities, and those with an interest in the land are approached for information and opinions regarding a development proposal.
County	England is divided into 48 ceremonial counties, which are also known as geographic counties, used for the purposes of administrative, geographical and political demarcation.
Countryside Act 1949	An Act to make provision for National Parks and the establishment of a National Parks Commission; to confer on the Nature Conservancy and local authorities powers for the establishment and maintenance of nature reserves; to make further provision for the recording, creation, maintenance and improvement of public paths and for securing access to open country, and to amend the law relating to rights of way; to confer further powers for preserving and enhancing natural beauty; and for matters connected with the purposes aforesaid.
Cumulative effects	The combined residual effects of a project in its entirety (all schemes), and the combined effects with other projects.
Cutting	A section of road where the surrounding land is at a higher level and the ground has been dug away to put in the road.
Design Manual for Roads and Bridges (DMRB)	A set of documents that provide a comprehensive manual system which accommodates all current standards, advice notes and other published documents relating to the design, assessment and operation of trunk roads.
Detailed Design	The process of taking on and developing the preliminary design.
Development Consent Order (DCO)	The means of obtaining permission for developments categorised as nationally significant infrastructure projects.
Department for Transport (DfT)	DfT is a ministerial department, supported by 23 agencies and public bodies plan and invest in transport infrastructure to keep the UK on the move.
Disposal	Any operation which is not recovery, even where the operation has as a secondary consequence the reclamation of substances or energy.
Draft DCO boundary	The site boundary used for the purpose of consultation. It includes the land anticipated at this stage likely to be required temporarily and/or permanently for the construction, operation and maintenance of the project.
Earthworks	The process of excavating or increasing level of soil.
Effect	Term used to express the consequence of an impact (expressed as the 'significance of effect'), which is determined by correlating the magnitude of the impact to the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria. For example, land clearing during construction results in habitat loss (impact), the effect of which is the significance of the habitat loss on the ecological resource.

Term	Definition
Embankment	Artificially raised ground, commonly made of earth material, such as stone.
Embedded mitigation	Design measures which are integrated into a project for the purpose of minimising environmental effects.
Enhancement	A measure that is over and above what is required to mitigate the adverse effects of a project.
Environment Agency	The Environment Agency is responsible for environmental protection and regulation in England and plays a central role in implementing the government's environmental strategy. The Environment Agency is the main body responsible for managing the regulation of major industry and waste, treatment of contaminated land, water quality and resources, fisheries, inland river, estuary and harbour navigations and conservation and ecology. They are also responsible for managing the risk of flooding from main rivers, reservoirs, estuaries and the sea.
Environmental assessment	A method and a process by which information about environmental effects is collected, assessed and used to inform decision-making.
Environmental Assessment Report	Documents the findings of an Environmental Assessment.
Environmental designation	A defined area which is protected by legislation that is threatened by change from manmade and natural influences (for example Ramsar sites, Sites of Special Scientific Interest and Special Areas of Conservation).
Environmental Impact	Any change to the environment, whether adverse or beneficial
Environmental Impact Assessment (EIA)	DMRB LA 104 Environmental assessment and monitoring (DMRB LA 104) (Highways England, 2020)2 defines EIA as: Statutory process consisting of: 1) preparation of an Environmental Statement 2) consultation 3) examination by the competent authority of the information contained within the Environmental Statement 4) the reasoned (justified or evidenced) conclusion by the competent authority on the significant effects of the project on the environment 5) the reasoned (justified or evidenced) decision by the competent authority to grant or refuse development consent
Environmental Management Plan (EMP)	Provides the framework for recording environmental risks, commitments and other environmental constraints and clearly identifies the structures and processes that will be used to manage and control these aspects. The EMP also seeks to ensure compliance with relevant environmental legislation, government policy objectives and scheme specific environmental objectives. It also provides the mechanism for monitoring, reviewing and auditing environmental performance and compliance.

[2] Highways England (2020) Design Manual for Roads and Bridges LA 104 Environmental assessment and monitoring, available at:

[redacted] [accessed 9 September 2021]

Term	Definition
Environmental Masterplan	The plans which illustrate the mitigation measures integrated into the design of the scheme.
Environmental Statement (ES)	A statutory report produced by the applicant including: 1) a description of the project 2) a description of the likely significant effects of the project on the environment 3) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment 4) a description of the reasonable alternatives 5) a non-technical summary 6) any additional information relevant to the characteristics of a project.
Essential mitigation	Mitigation critical for the delivery of a project which can be acquired through statutory powers. These are measures required to reduce and if possible offset likely significant environmental effects, in support of the reported significance of effects in the environmental assessment.
Examining authority	The person(s) appointed by the Secretary of State (SoS) to assess the DCO application and make a recommendation to the SoS.
Floodplain	A floodplain or flood plain is an area of land adjacent to a stream or river which stretches from the banks of its channel to the base of the enclosing valley walls and which experiences flooding during periods of high discharge.
Future baseline	An outline of the likely evolution of the current state of the environment without implementation of the project.
Flood Risk Assessment	An assessment of the likelihood of flooding in a particular area so that development needs and mitigation measures can be considered
Flood zones	Flood Zones refer to the probability of river and sea flooding. They are available to view on the Environment Agency's website.
Flood Zone 1	Land having a less than 1 in 1,000 annual probability of river or sea flooding.
Flood Zone 2	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Flood Zone 3	Land having a 1 in 100 or greater annual probability of river flooding; or land having a 1 in 200 or greater annual probability of sea flooding.
Geodiversity	The diversity of rocks, fossils, minerals and soils, landforms and geological processes that constitute the topography, landscape and the underlying structure of the Earth.
Green Belts	A buffer between towns, and between town and countryside. The green belt designation is a planning tool and the aim of green belt policy is to prevent urban sprawl by keeping land permanently open.
Greenhouse Gas (GHG)	A gas that contributes towards global warming by trapping heat given off from the earth's surface. Under the United Nations' Kyoto Protocol, the 6 GHG gases are carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride.

Term	Definition
Government	The Government of the United Kingdom
Groundwater	Groundwater is the water present beneath Earth's surface in soil pore spaces and in the fractures of rock formations.
Ground investigation	To obtain information on the physical properties of soil and rock around a site.
Gypsies and Travellers	Persons of nomadic habit of life whatever their race or origin, including such persons who on grounds only of their own or their family's or dependants' educational or health needs or old age have ceased to travel temporarily, but excluding members of an organised group of travelling showpeople or circus people travelling together as such.
Habitat Regulations Assessment (HRA)	A HRA is required where a project may have significant effects on a site by affecting its function to support protected habitats or species. Its purpose is to assess the implications of the proposal in respect of the site's conservation objective. The assessment is undertaken by the competent authority, in this case the Secretary of State.
Heavy Goods Vehicle (HGV)	A goods vehicle over 3.5 tonnes, including rigid and articulated lorries.
Heritage Resources	Heritage Resources are those resources, both human and natural, created by activities from the past that remain to inform present and future societies of that past
Historic Environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
Historic Environment Record (HER)	Information services that provide access to comprehensive and dynamic resources relating to the archaeology and historic built environment of a defined geographic area.
Impact	Change that is caused by an action (for example land clearing (action) during construction which results in habitat loss (impact)).
International Obligations	An obligation created or arising by or under any international convention, treaty or agreement.
Key characteristics (landscape)	The combination of elements that are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.
Landscape character area (LCA)	Distinct, recognisable and consistent patterns of elements and activity that make one landscape different from another. Note these can be a combination of landscape, biodiversity, geodiversity and economic activity that follow natural, rather than administrative boundaries.
Landscape Elements	Broad classification types of component parts of the landscape with specific requirements or management needs to achieve their longer-term objectives. These can be subdivided according to their detailed design or management needs relating to their function.
Land Use	What land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.
Legislation	A law or set of laws proposed by a government and given force/made official by a parliament.

Term	Definition
Levelling Up	Levelling Up White Paper sets out how we will spread opportunity more equally across the UK.
Listed Building	A structure which has been placed on the Statutory List of Buildings of Special Architectural or Historic Interest to protect its architectural and historic interest.
Light Detection and Ranging (LIDAR)	A remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.
Local Authority	An administrative body of local government.
Local Development Plan	The set of documents and plans that sets out the local authority's policies and proposals for the development and use of land in their area.
Local Green Space	Local Green Space designation is a way to provide special protection against development for green areas of particular importance to local communities
Local Impact Report	A report produced by a local authority which gives details of the likely impact of the proposed development on the local authority's area (or any part of that area). As part of the examination process, the Planning Inspectorate will invite relevant local authorities to submit local impact reports by a given deadline.
Local Nature Reserve	Local Nature Reserves (LNRs) are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities.
Lowest Observed Adverse Effect Level (LOAEL)	This is a level of noise exposure above which adverse effects on health and quality of life can be detected.
Mainline	The carriageway carrying the main flow of traffic, generally traffic passing straight through a junction or interchange.
Materials Management Plan (MMP)	A Materials Management Plan is a mechanism by which those who are developing a site can comply with Environment Agency regulations for excavated ground materials.
Matters Prescribed	Prescribed matter means a matter referred to in sub-paragraph
Metropolitan Open Land	Land designated as Metropolitan Open Land in London Borough is afforded the same level of protection as Green Belt. The designation is intended to protect areas of landscape, recreation, nature conservation and scientific interest.
Mineral sites	Operational sites or sites identified within strategic planning documents for the extraction of minerals.
Mitigation	Measures including any process, activity, or design to avoid, reduce, remedy or compensate for negative environmental impacts or effects of a development.
Mitigation measures	Methods employed to avoid, reduce, remedy or compensate for significant adverse impacts of development proposals.
Monitoring	A continuing assessment of the performance of the Project, including mitigation measures. This determines if effects occur as predicted or if operations remain within acceptable limits, and if mitigation measures are as effective as predicted.
National Character Area (NCA)	Areas of England defined by their unique combination of landscape, biodiversity, geodiversity, history and cultural and economic activity.

Term	Definition
National Cycle Network (NCN)	The National Cycle Network is a series of safe, traffic-free paths and quiet on-road cycling and walking routes that connect to every major town and city.
National Highways	National Highways operates, maintains and improves England's motorways and major A road
National Infrastructure Delivery Plan (NIDP)	A national policy document issued by the government which describes how the government will support the delivery of key infrastructure projects and programmes to the end of this Parliament.
National Parks	National Parks are parts of the countryside protected for their landscape
National Planning Policy Framework (NPPF)	The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied.
National Parks	National Parks are parts of the countryside protected for their landscape
National Trails	National Trails are long distance walking, cycling and horse riding routes through the best landscapes in England and Wales. Long distance walking, cycling and horse riding routes through the best landscapes in England and Wales
Nationally Significant Infrastructure Project (NSIP)	Large scale developments which require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008.
National Networks National Networks National Policy Statement 2014 (NN NPS)	A national policy document issued by the government which sets out the need for and the government's policies for the development of nationally significant infrastructure projects on road and rail networks in England. The NNNPS. It is the basis for the examination of a Development Consent Order application by the Planning Inspectorate and decisions by the Secretary of State. It was adopted designated as national policy by the UK Parliament Secretary of State in March January 2015.
Natural England	Natural England was established by the Natural Environment and Rural Communities Act 2006. Their purpose is to help conserve, enhance and manage the natural environment for the benefit of present and future generations, thereby contributing to sustainable development.
Nature Improvement Area	Nature Improvement Areas are areas of the country where partnerships have been set up to enhance the natural environment. Nature Improvement Areas embody an integrated, holistic approach that was signalled in Natural Environment White Paper (Department for Environment Food & Rural Affairs, 2014)3 and England Biodiversity Strategy (Department for Environment Food & Rural Affairs, 2020)4, joining up objectives for biodiversity, water, soils, farming and

[3] Department for Environment Food & Rural Affairs (2014) Natural Environment White Paper, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/366526/newp-imp-update-oct-2014.pdf [accessed 9 September 2021]
[4] Department for Environment Food & Rural Affairs (2020) Biodiversity 2020: A strategy for England's wildlife and ecosystem services, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf [accessed 9 September 2021]

Term	Definition
	the low-carbon economy to improve the functioning of ecosystems.
Noise Barrier	A solid construction that reduces unwanted sound. It may take many forms including: engineering cutting; retaining wall; noise fence barrier; landscape earthworks; a 'low-level' barrier on a viaduct; a parapet barrier on a viaduct; or any combination of these measures. Also called an attenuation barrier.
Noise Important Areas (NIA)	These areas provide a framework for the local management of the Important Areas.
Non-hazardous waste	Waste that is neither classified as inert nor hazardous
NOX	Oxides of Nitrogen – which encompasses all nitrogen species although mainly NO and NO2.
Northern Powerhouse	The Northern Powerhouse is the government's vision for a super-connected, globally competitive northern economy with a flourishing private sector, a highly-skilled population, and world-renowned civic and business leadership
Opening Year	In the case of the A66 project, assumed to be 2029.
Operational	The functioning of a project on completion of construction.
Order limits	The extent of land required for the Project
Peat resource	Existing or potential peat extraction sites.
Planning Act 2008 (PA 2008)	The Planning Act 2008 (as amended). Act of Parliament which sets out the statutory requirements and planning application process for nationally significant infrastructure projects, such as energy, water, transport and waste. Applications for Development Consent Order are submitted following the processes set out in the Planning Act. The Act has subsequently been amended.
Planning Inspectorate (PINS)	The government agency responsible for operating the planning process for nationally significant infrastructure projects and for examining applications for development consent under the Planning Act 2008, on behalf of the Secretary of State.
PINS Advice Note	The Planning Inspectorate published series of advice notes that are intended to inform applicants, consultees, the public and others about a range of process matters in relation to the Planning Act 2008 (PA2008).
Planning Permission	Planning Permission formal permission from a local authority for the erection or alteration of buildings or similar development.
PM10	Particulate matter with a diameter of 10 microns or less.
Preliminary design	The design on which the application for development consent is based.
Preliminary Environmental Information (PEI)	PEI is defined in the EIA Regulations as 'information referred to in Part 1 of Schedule 4 (information for inclusion in environmental statements) which – (a) has been compiled by the applicant; and (b) is reasonably required to assess the environmental effects of the development (and of any associated development).'
Prescribed Matter	A matter referred to in sub-paragraph.
Programme	A series of steps that have been identified or series of projects that are linked by dependency.

Term	Definition
Project	This Project comprises of eight individual schemes. Scheme names are (west to east): M6 Junction 40 to Kemplay Bank Penrith to Temple Sowerby Temple Sowerby to Appleby Appleby to Brough Bowes Bypass Cross Lanes to Rokeby Stephen Bank to Carkin Moor A1(M) Junction 53 Scotch Corner
Protected Characteristic Groups (PCGs)	A protected group is a group of people sharing a common trait who are legally protected from being discriminated against on the basis of that trait. Under the Equality Act 2010 this includes: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation.
Public Rights of Way (PRoW)	A way over which the public have a right to pass and repass. The route may be used on foot, on (or leading) a horse, on a pedal cycle or with a motor vehicle, depending on its status. Although the land may be owned by a private individual, the public may still gain access across that land along a specific route
Receptor	A defined individual environmental feature usually associated with population, fauna and flora that has potential to be affected by a project.
Recovery	Any operation, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
Recycling	Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes
Re-use	Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.
Registered Parks and Gardens (RPG)	Parks and gardens listed on a register that includes sites of particular historic importance and of special historic interest in England. The main purposes of the register is to celebrate designed landscapes of note and to encourage appropriate protection.
Regulations	Official rules or acts to control something, generally made in relation to legislation.
Residual impact	Effects on the environment that occur after mitigation of potential impacts has been implemented.
Resource	A defined but generally collective environmental feature usually associated with soil, water, air, climatic factors, landscape, material assets, including the architectural and archaeological heritage that has potential to be affected by a project
Road Investment Strategy (RIS)	The Road Investment Strategy outlines a long-term programme for England's motorways and major roads supported by stable funding needed to plan ahead.

Term	Definition
Scheduled Monument	Historic building or site included in the Schedule of Monuments kept by the Secretary of State for Culture, Media and Sport under the regime set out in the Ancient Monuments and Archaeological Areas Act 1979.
Scheme	This project comprises of eight schemes. Scheme names are (west to east): M6 Junction 40 to Kemplay Bank Penrith to Temple Sowerby Temple Sowerby to Appleby Appleby to Brough Bowes Bypass Cross Lanes to Rokeby Stephen Bank to Carkin Moor A1(M) Junction 53 Scotch Corner
Scoping Opinion	A written opinion of the relevant consenting authority, following a request from the applicant, as to the information to be provided in the Environmental Statement.
Secretary of State (SoS)	The Secretary of State for Transport.
Sensitivity	The extent to which the receiving environment can accept and accommodate change without experiencing adverse effects.
Setting	DMRB LA 106 defines setting as the surroundings in which a cultural heritage resource is experienced.
Significant Observed Adverse Effect Level (SOAEL)	This is the level of noise exposure above which significant adverse effects on health and quality of life occur.
Significance (of effect)	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Site of Special Scientific Interest (SSSI)	A conservation designation denoting a protected area in the UK, designated due to special interest in its flora, fauna, geological or physiographical features. They are protected by law to conserve their wildlife or geology.
Site Waste Management Plan (SWMP)	A management plan to encourage the effective management of materials and ensure waste is considered at all stages of a project - from design through to completion. Although no longer a regulatory requirement in England, SWMPs are still considered to be good practice.
Source Protection Zone (SPZ)	Area of groundwater protected by the Environment Agency.
Special Area of Conservation (SAC)	A site designated under the Habitats Directive as internationally important sites for threatened habitats and species. Following the UK's exit from the European Union, SACs now form part of the UK's National Site Network.
Special Protection Area (SPA)	A site designated under the European Union Directive on the Conservation of Wild Birds. Following the UK's exit from the European Union, SACs now form part of the UK's National Site Network.
Stakeholder	An organisation or individual with an interest in the Project.
Statutory	Related to legislation or prescribed in law or regulation.
Statutory consultees	Organisations that must be consulted on relevant projects. Statutory Consultees are listed in Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.
Statutory Environmental Bodies (SEB)	Environment Agency, Historic England and Natural England.

Term	Definition
Sterilise	Substantially constrain / prevent existing and potential future use and extraction of materials
Study Area	The spatial area within which environmental effects are assessed i.e. extending a distance from the DCO boundary in which significant environmental effects could occur (this may vary between the topic areas).
Sustainable drainage systems (SuDS)	Drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses.
Traffic modelling or forecasting	The process used to estimate the number of vehicles using a specific section of road or defined network of roads.
Unitary Authority	A unitary authority is a local authority responsible for all local government functions within its area or performing additional functions that elsewhere are usually performed by a higher level of sub-national government or the national government.
Veteran Trees	All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value.
Visual Amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Visual Receptor	People who may have a view of a proposed development during construction or operation.
Walkers, cyclists and horse riders	Walkers, cyclists and horse riders using the network.
Waste (general)	Any substance or object which the holder disposes or intends / is required to dispose.
Waste hierarchy	The waste hierarchy ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).
Waste Infrastructure	Facilities that handle, treat/prepare for reuse, recycle and dispose (landfill) of waste.
Waste Local Plan	Provides further information in support of the implementation of waste planning policy.
Water Framework Directive (WFD)	The Water Framework Directive (2000/60/EC) (WFD) is a wide- ranging piece of European environmental legislation for the protection of water resources that is being transposed into UK Law.
White Paper	White papers are policy documents produced by the Government that set out their proposals for future legislation.
Working Days	A day other than a Saturday or Sunday which is not Christmas Day, Good Friday or a bank holiday under section 1 (bank holidays) of the Banking and Financial Dealings Act 1971.
World Health Organisation (WHO)	The World Health Organization is a specialised agency of the United Nations that is concerned with international public health.

Term	Definition
World Heritage Site (WHS)	A World Heritage Site is a landmark or area with legal protection by an international convention administered by the United Nations Educational, Scientific and Cultural Organization (UNESCO). World Heritage Sites are designated by UNESCO for having cultural, historical, scientific or other form of significance.