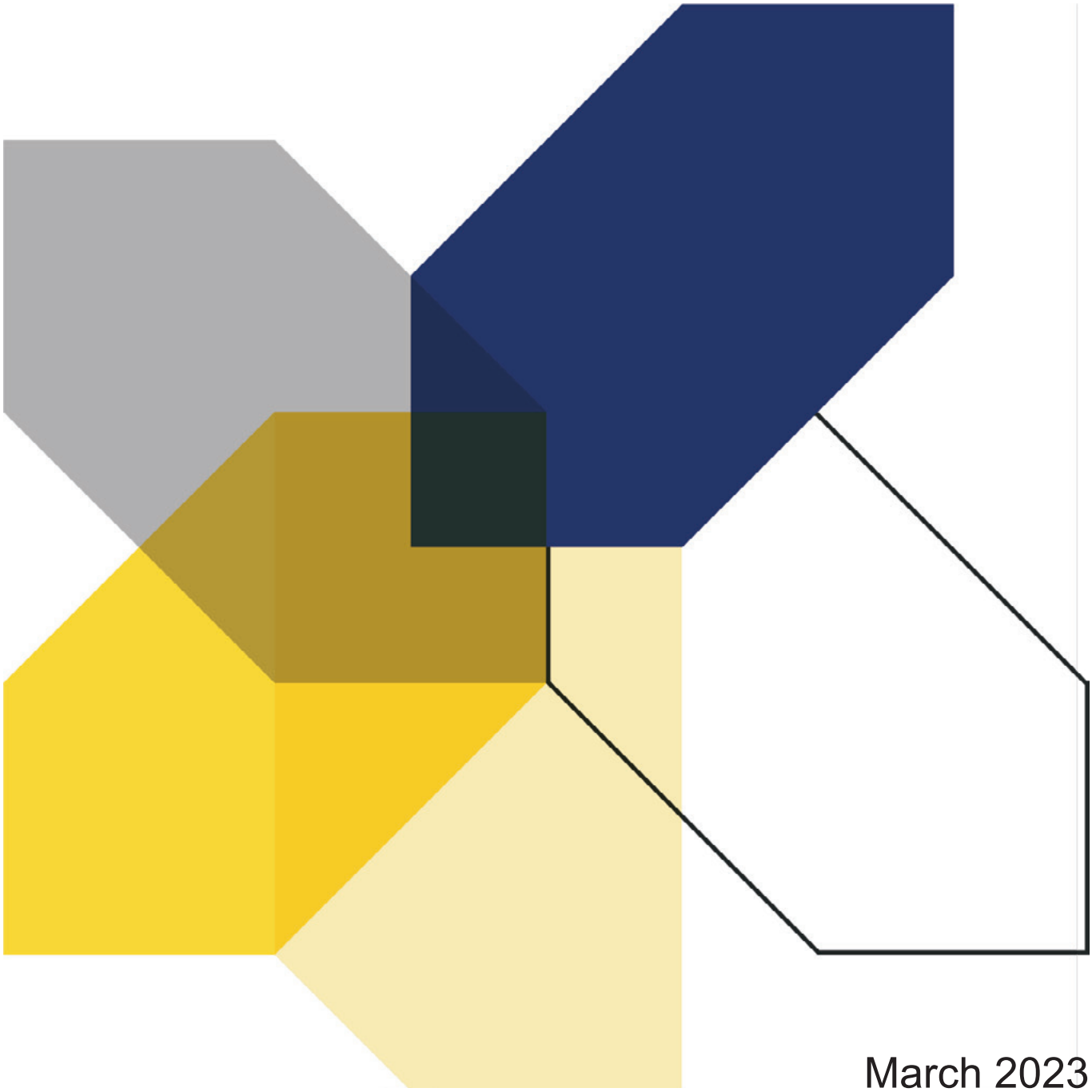
Department for Transport

Draft National Policy Statement for National Networks



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Draft National Policy Statement for National Networks

Presented to Parliament pursuant to section 104 of the Planning Act 2008

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Contents

Status of this document – draft for consultation

This is a draft of the revised National Networks Planning Policy Statement for consultation.

We are gathering feedback on this draft through public consultation. Feedback received through public consultation and parliamentary scrutiny will be used to inform further amendments.

1. Introduction

Overview

1.1 The National Networks National Policy Statement, hereafter referred to as 'NPS', sets out the need for, and government's policies to deliver, development of nationally significant infrastructure projects (NSIPs) on the national road and rail networks in England. For the purposes of this NPS these developments are referred to as national road, rail, and strategic rail freight interchange[a] (SRFI) developments.

1.2 It also provides planning guidance for promoters of NSIPs on the national road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.

Scope

1.3 The Secretary of State will use this NPS as the primary basis for making decisions on development consent applications for NSIPs on the national road and rail networks in England.

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a Section 26 of the Planning Act 2008 sets out the threshold for the construction of a Rail Freight Interchange that is considered within the NSIP regime. These are referred to as SRFIs. Rail Freight Interchange is used to refer to developments which fall below the Planning Act threshold.

1.4 Under section 104 of the Planning Act 2008 the Secretary of State must decide an application for a NSIP in accordance with this NPS unless he/she is satisfied that to do so would:

- lead to the UK being in breach of its international obligations
- be unlawful
- lead to the Secretary of State being in breach of any duty imposed by or under any legislation
- result in adverse impacts of the development outweighing its benefits
- be contrary to legislation about how the decisions are to be taken[1]

1.5 The thresholds for nationally significant road, rail and strategic rail freight infrastructure projects are defined in Part 3 of the Planning Act 2008 ("the Planning Act") as amended (for highway and railway projects) by The Highway and Railway (Nationally Significant Infrastructure Project) Order 2013 ("the Threshold Order")[2]. In this NPS the 'national road network' refers to the Strategic Road Network (SRN)[b].

1.6 Where a development does not meet the current requirements for a NSIP set out in the Planning Act

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b The Strategic Road Network covers trunk roads and motorways in England where National Highways or the Secretary of State is the highway authority.

2008 (as amended), but is considered by the Secretary of State to be nationally significant, there is a power in the Planning Act for the Secretary of State, on receipt of a qualifying application, to direct that a development should be treated as development for which development consent is required[3]. This NPS is likely to be the primary policy for Secretary of State decision making on projects in the field of national networks for which such a direction has been given.

Geographical coverage

1.7 The geographic scope of this NPS is limited to England. In Scotland, and Northern Ireland, the planning consent requirements of all national network projects is devolved to the respective devolved administrations.

1.8 In Wales, planning consent requirements for roads is devolved. While the UK government funds rail infrastructure development in Wales, the planning regime is devolved to the Welsh Government, which is why this NPS does not apply to Welsh railways.

Relationship to the National Planning Policy Framework and other planning guidance

1.9 The majority of road and rail developments in England are consented through routes other than the NSIP regime, such as the Highways Act 1980, Transport

and Works Act 1992 and the Town and Country Planning Act 1990. Where schemes come forward under these alternative consenting routes, this NPS may be a material consideration in decision making. Whether, and to what extent, this NPS is a material consideration, will be judged on a case-by-case basis.

1.10 Under s104(2) there may be other important and relevant considerations, including other plans or frameworks (with a statutory footing as required by legislation outside of the Planning Act or otherwise) which are capable of being important and relevant considerations. The National Planning Policy Framework may be an important and relevant consideration in decisions on NSIPs, but only to the extent relevant to that project. The National Planning Policy Framework makes clear that it does not contain specific policies for NSIPs. This NPS will assume that function and provide transport policy which will guide individual development brought under it, taking precedence over the National Planning Policy Framework in areas of overlap.

1.11 The NPS provides policy and guidance on matters such as good scheme design, transport decarbonisation, avoidance and mitigation of environmental effects and environmental enhancement. In this way, both the National Planning Policy Framework and the NPS seek to achieve sustainable development, by ensuring the right infrastructure is delivered in the right place and at the right time to support sustainable growth, and it recognises that different approaches, interventions and

measures will be necessary to achieve this. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs[4].

1.12 The Road Investment Strategies, the Integrated Rail Plan and Plan for Rail, together with the business plans prepared by the relevant delivery bodies, provide detailed articulation of the government's strategy for the strategic road and rail networks and investment priorities over specified periods, which may guide the infrastructure interventions that are likely to come forward under this NPS.

1.13 This NPS does not cover ports or airports, which are covered by separate NPSs. Other NPSs, such as the ports NPS, may be a relevant consideration for some decisions on development consent applications for national networks NSIPs.

Period of validity and review

1.14 This NPS will remain in force in its entirety unless withdrawn or suspended in whole or in part by the Secretary of State. It will be subject to review by the Secretary of State approximately every 5 to 10 years or earlier if necessary, in order to ensure that it remains appropriate. Following the review, the Secretary of State can amend the NPS, withdraw its designation as an NPS or retain it unamended. Information on the review

process is set out in paragraphs 10 to 12 of the Annex to Department for Communities and Local Government's letter of 9 November 2009[5] and the Department for Levelling Up, Housing and Communities guidance on Review of NPSs[6].

1.15 It should be noted that where the NPS refers to other documents, these other documents may be updated or amended over the time span of the NPS, so successor documents should be referred to.

Transitional provisions following review

1.16 The Secretary of State has decided that for any application accepted for examination before designation of the 2023 amendments, the 2015 NPS should have effect in accordance with the terms of that NPS. The 2023 amendments will therefore have effect only in relation to those applications for development consent accepted for examination after the designation of those amendments.

1.17 However, any emerging draft NPSs (or those designated but not having effect) are potentially capable of being important and relevant considerations in the decision-making process. The extent to which they are relevant is a matter for the relevant Secretary of State to consider within the framework of the Planning Act 2008 and with regard to the specific circumstances of each Development Consent Order application.

Appraisal of Sustainability

1.18 The NPS has been subject to an Appraisal of Sustainability, which has been published alongside it. The Appraisal of Sustainability also incorporates the analysis required under the Environmental Assessment of Plans and Programmes Regulations 2004[7].

1.19 The Appraisal of Sustainability examines the likely social, economic and environmental effects of designating an NPS and the reasonable alternatives to the NPS. It also sets out measures to mitigate and monitor any uncertain or significant negative effects and enhancements for all effects. In undertaking the appraisal and identifying recommendations and mitigation measures, it seeks to promote sustainable development within the NPS.

1.20 The Appraisal of Sustainability found no significant adverse effects of the policy set out in this NPS. The Appraisal of Sustainability identified uncertain effects related to greenhouse gas and air quality emissions and significant positive effects on the economic impacts, user experience and safety. It acknowledged that the nature of the effects will depend upon the exact locations of development and the sensitivity of the receiving environment.

Habitats Regulation Assessment

1.21 The NPS has been assessed under the Conservation of Habitats and Species Regulations 2017[8] (as amended) (the 'Habitats Regulations').

1.22 The Habitats Regulation Assessment has been undertaken at a strategic level, as the NPS is setting the high-level policy rather than specifying locations for enhanced or new infrastructure.

1.23 An initial screening exercise concluded that projects brought forward under the NPS could lead to impacts on European Sites, and the potential for likely significant effects could not be excluded. Therefore, it was necessary to complete an Appropriate Assessment. Following the Appropriate Assessment and consideration of alternatives, it was determined that there were no feasible alternative solutions to the NPS and adverse effects to the integrity of European Sites remained possible. It was therefore necessary to consider Imperative Reasons of Overriding Public Interest and compensatory measures.

1.24 The Imperative Reasons of Overriding Public Interest is of an economic/social nature and therefore regulation 107 of the Habitats Regulations will apply to the NPS.

1.25 The Habitats Regulation Assessment conclusions are only applicable at the NPS level and are without prejudice to any project-level Habitats Regulation

Assessment, which may result in the refusal of consent for a particular application. Equally, a particular application may be determined to have no Likely Significant Effects on any European Site, notwithstanding the findings of the Habitats Regulation Assessment for the NPS itself.

2. National Networks

2.1 National networks provide critical long-distance links between places, offering fast and reliable journey times and in doing so enable connectivity between people and communities, which in turn supports and stimulates economic growth. As recognised through the government's economic growth and levelling up agenda, improved connectivity and accessibility, both locally and inter-regionally, facilitates deeper labour markets giving individuals better access to jobs and education, and businesses better access to skills. Improved connectivity can increase the economic density of an area, leading to increased productivity. National networks can also create opportunities for growth and the development of new communities. They facilitate passenger, business and leisure journeys across the country, and support tourism. They connect vital infrastructure such as ports and airports to people and markets. They enable the effective movement of goods and freight into, out of, and across the country, which is vital to UK prosperity, health, wellbeing, and security. Well-functioning networks allow people and goods to flow more freely and reduce direct costs to individuals and businesses.

Freight

2.2 There is a need to recognise the important role that all modes play in the transportation of freight across our transport networks, which is vital in achieving

our economic goals domestically and internationally through facilitating effective and efficient movement of freight. 95% of UK imports and exports by tonnage are transported by sea. This trade is a vital enabler of the UK economy and a driver of a significant amount of primary and secondary freight transport. Cost effective and efficient freight transport to and from such international hubs with seamless modal interchanges offers productivity benefits and boosts competitiveness for the domestic economy and international trade.

2.3 There is a need for long-term strategic action through government and industry collaboration, to bolster the operation of the freight network as a whole through improvements to infrastructure with multi-modal impacts. Working with industry, government have published a Future of Freight plan_which sets out the long-term vision for the freight sector. As part of this, a National Freight Network will be identified across road, rail, maritime, aviation, inland waterway and logistics infrastructure. This will help to understand the needs of the freight industry, identifying the infrastructure needed to support an integrated network that facilitates modal shift, prioritises decarbonisation and improves air quality outcomes, and supports the continuous improvement of the economic efficiency and reliability of end-to-end freight journeys with greater resilience built into the system.

2.4 The infrastructure that supports our hauliers is essential to the effective and resilient supply chains we need. This includes last mile journeys for Heavy

Goods Vehicle, and providing the facilities our Heavy Goods Vehicle drivers need to keep our country moving. Government is committed to addressing the strategic national need for more lorry parking and better services in lorry parks in England, ensuring all delivery partners including planning authorities, roadside facilities operators and National Highways all play their part in achieving this objective and that the freight and logistics industry are empowered to continue to innovate within the sector.

Roads

2.5 Roads are a critical part of the national transport framework in facilitating connectivity. Every year, road users travel more than 485 billion passenger miles by road in Great Britain, with roads accounting for 84% of passenger miles[9] and 77% of freight by volume[10].

2.6 Roads facilitate active travel, such as walking, wheeling, and cycling. In 2021, 33% of personal journeys were taken by bike or walking[11]. It is a government commitment for more than half of personal journeys in our towns and cities to be made by active travel by 2030s. £2bn investment has been committed to help enable half of journeys in towns and cities to be cycled or walked by 2030. Updates to Local Transport Plan Guidance and the 'The Strategic Road Network and the delivery of sustainable development' Circular advocate a vision-led approach to local transport planning that prioritises sustainable transport interventions, alongside

pedestrians and other vulnerable road users, in all plans to improve the local transport network.

2.7 In addition to enabling a broad range of active travel, roads are also crucial for our public transportation. Buses are a key form of public transport that rely on roads. In 2019/20, local bus services travelled 1.13 billion vehicle miles in England and the road network users that collectively undertook 4.07 billion journeys in England in 2019-2020[12] rely on such networks to continue connecting with other people, communities, and economic opportunities.

2.8 The Strategic Road Network (SRN) consists of motorways and trunk roads and is essential to these connections. In England (in 2021), the SRN was 4,500 miles long. Despite the SRN only comprising 2% of the total roads in England by length[13], almost one-third of all motor vehicle miles and over two-thirds of Heavy Goods Vehicle miles are made on the SRN[14]. Whilst the vast majority of road schemes that require development consent will be on the SRN, this National Policy Statement (NPS) recognises the complementary role the SRN provides to the major road networks and local roads. The strategic and long-distance nature of the SRN provides long distance traffic with a safe and efficient route, freeing up local roads for genuinely local journeys and active travel, and keeping traffic away from principal centres of population. In turn, the better use of the local road network to improve the environment for active travel, increase accessibility by public transport, and the

creation of better connections to the places people want to go, can also reduce pressures on the SRN. The SRN is also critical for supporting the movement of freight. In 2020, 77% of domestic freight moved in the UK by road[15] and 68% of Heavy Goods Vehicle miles were run on the SRN[16]. In 2019, the road freight sector contributed £13.6 billion to the UK economy[17]. Some of the UK leading sectors – logistics, freight, retail, construction, and manufacturing – rely on the SRN to move their products through the country[18].

2.9 The SRN also has an important role in facilitating the movement of goods and people between England and other nations of the UK. The UK government is committed to improving connectivity between the nations of the UK and will formally respond to Sir Peter Hendy's independent review as soon as practicable.

Railways

2.10 Railways are a vital part of the country's transport infrastructure and play a crucial role in growing the economy and meeting the connectivity needs of customers and business.

2.11 Rail journeys are made for many reasons, including to get to work and education, access healthcare services, visit family and friends, and for leisure trips. Even with the impact of the COVID-19 pandemic, 795 million passenger journeys took place on the network in 2021, compared

to the 1,790 million that took place in 2019 before the pandemic[19].

2.12 In 2020/21, the rail network in Great Britain consisted of 15,935km (9,902 miles)[20] of route open to services and 2,569 stations[21].

2.13 In addition to the track and stations, the rail network also covers related infrastructure necessary for the provision of rail services such as depots, maintenance services, marshalling yards and service facilities. Each of these play an important role in the effective running of the railways.

Rail freight

2.14 The rail network is also used to move freight across a number of key commodities including goods, which would be difficult to move by others means such as construction materials and fuel and power supplies. It also acts as an important link in ensuring both the resilience of the UK supply chain as well as an effective supply chain, which supports lean, competitive business. Rail's market share in 2019 was 9% of freight moved[22]. In contrast to passenger rail, freight moved by rail has recovered to a comparable pre-pandemic level. Freight moved in 2021 was 16.9 billion net tonne kilometres against 16.6 billion net tonne kilometres in 2019[23].

2.15 For many freight movements, rail is unable to undertake a full end-to-end journey for the goods concerned. The aim of a strategic rail freight interchange

(SRFI) is to optimise the use of rail in the freight journey by maximising rail trunk haul and minimising some elements of the secondary distribution leg by road, through co-location of other distribution and freight activities. SRFIs need to be supported at both ends by connections to rail infrastructure and logistics terminals. SRFIs are also typically associated with intermodal traffic. A fully effective network of SRFIs, supported by smaller-scale rail freight interchanges[24], will help to enable the sector to reach its full potential.

National networks in a greener world

Conserving and enhancing the natural environment

2.16 The environment is a complex system of cause and effect that connects the human, built and natural elements of the environment. Rather than a series of unrelated components, changes to one part of the system may affect others. Applicants should look for opportunities to take a holistic approach to avoiding, reducing or mitigating multiple impacts on the natural or built environment, on landscapes and on people by using nature-based solutions.

2.17 Putting sustainability at the forefront of how our national road, rail and strategic rail freight interchange (SRFI) developments grow and adapt, presents

opportunities for the environment and the health and wellbeing of people, now and in the future.

Reducing carbon emissions

2.18 Transport is currently the largest contributor to UK domestic greenhouse gas emissions, producing 99 $MtCO_2e$ of carbon in 2020[25].

2.19 Through a series of policies set out in the Transport Decarbonisation Plan, the Government is ensuring the fastest possible transition to a zero-emission vehicle fleet. It is clear on the need to develop a mutually supportive policy framework that actively promotes sustainable forms of travel by offering genuine modal choice to change behaviours and to provide the infrastructure we need to support a shift to alternative fuels and to decarbonise our vehicles.

2.20 In June 2021, the Government set the sixth carbon budget covering 2033-37, setting a level representing an approximate 77% reduction in greenhouse gas emissions (including international aviation and shipping) compared to 1990. These carbon budgets are set to ensure the UK keeps to a trajectory consistent with meeting its 2050 net zero emissions target as set out in the Climate Change Act 2008 (as amended).

2.21 Government's Transport Decarbonisation Plan demonstrates how we will deliver transport's contribution to emissions reductions in line with net zero, much of which has already been delivered or is in progress.

2.22 The government is already taking action to tackle road emissions at the tailpipe with its Zero Emission Vehicle Mandate, by setting targets requiring a percentage of manufacturers' new car and van sales to be zero emission each year from 2024. This will help deliver on our 2030 commitment to end the sale of new petrol and diesel cars, and 2035 commitment that all new cars and vans must be zero emission at the tailpipe. This will guarantee a greater number of zero emission vehicles on our roads, addressing the largest source of transport greenhouse gas emissions. Related to this, a phase-out date for the sale of new, non-zero emission Heavy Goods Vehicles less than or equal to 26 tonnes will also be introduced from 2035 and, from 2040, all new Heavy Goods Vehicles sold in the UK must be zero emission. This means new Heavy Goods Vehicles will no longer produce harmful tailpipe emissions, including greenhouse gases and pollutant emissions while operating on our roads.

2.23 Building on this, the government has published its electric vehicle infrastructure strategy, "Taking Charge" with significant investment in zero emission vehicle grants and EV Infrastructure, as well as using the Automotive Transformation Fund to support the electrification of UK vehicles and their supply chains.

2.24 Carbon emissions from construction and operation of the strategic road network represented around 2% of the total emissions that year, with the vast majority generated by the vehicles that travel on them. The

National Road Traffic Projections 2022 provide a strong analytical basis for understanding the potential evolution of traffic growth, congestion, and emissions under a wide range of plausible future scenarios. In all scenarios carbon dioxide tailpipe emissions are projected to fall significantly due to the anticipated uptake of EVs. This assumption reflects recent developments in the electric car and van market, in particular lower battery prices and a recent acceleration in sales.

2.25 Choosing rail can also help reduce transport's carbon emissions, particularly during the transition to electric vehicles, as well as providing wider environmental, transport and economic benefits. Currently, rail is the cleanest public transport service contributing around 1% of the total UK transport emissions, despite carrying almost 10% of all passenger miles and nearly 9% of freight moved before the pandemic[26].

2.26 However, to meet net zero, the rail sector must decarbonise further. At present, 38% of the rail network is electrified[27]. Further electrification, together with use of alternative technologies to phase out the use of diesel-only trains by 2040, will be needed to reduce air and noise pollution and enable a net zero railway by 2050.

2.27 The Future of Freight Plan reaffirms government's commitment to a freight and logistics sector that is cost-efficient, reliable, resilient, environmentally sustainable and valued by society.

2.28 Rail freight is estimated to reduce emissions on average by 76% per tonne km travelled when compared to road freight, equating to around 1.4m tonnes of carbon dioxide emissions saved each year. Rail is one of the most carbon efficient ways of moving goods over long distances and can also reduce congestion – depending on its load, each freight train can remove up to 76 Heavy Goods Vehicles from the road[28]. The rail freight industry resulted in 6.35 million fewer lorry journeys in 2019/20[29].

2.29 In addition to the commitments above, the Future of Freight Plan sets out plans to introduce a rail freight growth target and incentivise the early take up of low carbon traction. The effective development of strategic rail freight interchanges (and other rail freight interchanges) and other key enablers in the right places, will also help realise the full range of environmental benefits that rail freight can offer.

2.30 While climate change mitigation is essential in minimising the most dangerous impacts of climate change, previous global greenhouse gas emissions have already committed us to some degree of continued climate change into the future. Our detailed plans to enhance resilience to climate change risks across national networks are contained in the UK's National Adaptation Programme[30].

Reducing Air pollutant emissions

2.31 Transport is also a contributor to emissions of air pollutants. The UK has national emission reduction

commitments for overall UK emissions of five key air pollutants (particulate matter2.5, nitrogen oxide, sulphur dioxide, ammonia, and non-methane volatile organic compounds) by 2030[31].

2.32 The most significant air pollutants from the road transport sector are nitrogen oxides and particulate matter. Air pollutants from transport have decreased since 1990, largely because newer vehicles emit less nitrogen oxide. This reduction in nitrogen oxide emissions among cars is driven primarily by the introduction of legislative vehicle emission standards. Exhaust particulate matter emissions have also decreased markedly since 1996 due to stricter vehicle emissions standards.

2.33 However, emissions are also dependent on vehicle type: in the decade 2009 to 2019, cars reduced nitrogen oxide emissions by 19% despite increases in car mileage, while total nitrogen oxide emitted by vans increased by 59% alongside increases in van mileage[32].

2.34 By contrast and related to increases in vehicle mileage, non-exhaust particulate matter (2.5 and 10) has proved more difficult to reduce. Non-exhaust particulate matter from brake and tyre wear has increased by 35% since 1990, and non-exhaust particulate matter from road abrasion has increased by 34% in the same period. These two sources together represent 61% of particulate matter (10) emissions from transport in 2019[33].

2.35 Rail also contributes to poor air quality, contributing around 2% of total nitrogen oxide emissions nationally,

from the combustion process of diesel engines exhausts as well as less than 1% of total particulate matter from diesel engine exhausts, and non-exhaust emissions such as brake and track wear[34].

3. The need for development of the national networks (Statement of Need)

Drivers of need for development of the national networks

3.1 There are a range of challenges which national networks face, and which may lead to the need to develop national networks further through infrastructure interventions:

Maintaining network performance and meeting customer needs

3.2 Population growth and economic growth are the most critical influences on travel demand. There has been a steady growth in the population of Great Britain over the last 20 years and the population is projected to increase further by 4% between 2025 and 2060. Continuing growth in the economy and the population will increase the demands placed upon the SRN. Without investment and infrastructure interventions, increasing demand will lead to decreasing network performance for users, for example, poorer journey time reliability, which comes with economic and social costs.

3.3 Evidence that development on the network leads to induced demand is limited. A recent literature review[35]

suggested that the scale of any induced demand is likely to vary depending on circumstances. Under Department for Transport's Transport Appraisal Guidance[36], government-funded investments in transport schemes need to consider the effects of variable demand (and the resultant induced or suppressed traffic) on the justification for intervention.

3.4 On roads, poor network performance, in the form of congestion or unexpected delays undermining reliability, has many costs. These costs include constraining economic activity by increasing costs to businesses and can constrain job opportunities if they limit access to labour markets. It causes frustration and stress for users.

3.5 Network performance can impact upon satisfaction levels for users of the Strategic Road Network (SRN). Transport Focus Strategic Road Users Survey showed that journey times were one of the key concerns for users. As of July 2022, 69% of SRN users were very/fairly satisfied with journey times[37]. For freight users, the average level of satisfaction with motorways and major 'A' roads when it came to meeting business needs was 46%[38] in 2021-22.

3.6 For rail, network performance has a large impact on the customer experience, as punctuality is a key concern for users. Passenger satisfaction has improved over time, remaining around 80% for several years and was 82% in 2020, still below Network Rail's target of 83.5%[39]. Freight customers also report barriers to transition to rail, with

costs of additional journey legs for door-to-door journeys with a rail leg being noted as a key barrier to growth[40]. There is, therefore, a clear need for rail infrastructure to be expanded whilst taking into account the need to secure value for money for customers.

Supporting economic growth

3.7 The government's Levelling up the United Kingdom White Paper recognises the role that transport can play in boosting productivity, by connecting people to jobs, and businesses to each other, and sets out an ambition to level up transport connectivity. It recognises the role that specific projects on national networks can play in improving connectivity between towns and cities to boost growth.

3.8 Transport infrastructure is a catalyst and key driver of growth, and it is important that the planning and development of infrastructure fully considers the role it can play in delivering sustainable growth, how it can support local and regional development plans and the growth aspirations of local authority areas. This will include exploring options to unlock sites for housing and employment growth made accessible by sustainable transport and the regenerative impact major infrastructure can play in driving urban renewal, increasing density, as well as creating new places and communities.

Ensuring resilience in networks

3.9 Resilience in the networks is about responding to risks and taking opportunities to enable transport networks to perform as expected. But importantly, resilience is also about ensuring the network remains fit for purpose, meeting the needs of the country for the movement of goods and people by anticipating, responding and being able to quickly adapt to those changing needs, and ensuring the network continues to evolve as technology advances.

3.10 The latest climate change projections show that by the 2050s, annual temperatures will rise, rainfall will increase, and the frequency and intensity of extreme temperature and rainfall events may also increase[41].

3.11 The UK Climate Change Risk Assessment has identified some of the key risks faced by the transport sector and transport infrastructure networks as a result of climate change, including risks from river, surface water and groundwater flooding, coastal erosion and flooding, slope and embankment failure, risks to bridges, and cascading failures[42]. These have the potential to negatively impact network performance, including road user safety, journey time reliability, and disruption to supply chains.

3.12 While the path to net zero forms part of the response to climate change risks on the transport network, resilience measures, including maintenance and adaptation of the network and further development,

will be critical to future-proof against these wide-ranging risks. National Highways and Network Rail have published reports under the third round of the Climate Change Adaptation Reporting Power, which asks organisations to report on the effects of climate change on their organisation and their proposals for adapting to climate change.

3.13 In 2023, the government will also publish the Third National Adaptation Programme, which will set out how the government plans to address risks identified in the Climate Change Risk Assessment.

3.14 As we place more demands on the network through increases in the volume of traffic and greater expectations on its performance in underpinning efficient supply chains, our reliance on the technology that supports its smooth operation has increased. The ability of our network to accommodate and support advances in technology is ever more critical. Delivering the infrastructure needed to support innovation, including facilitating greater digital connectivity and supplying the energy needed to support the evolution of vehicle technologies using the network, is key to ensure our networks remain resilient both now and in the future. The resilience of the technology itself, its maintenance and upgrade, and its continuity of service is essential, particularly as the connected and autonomous vehicles place new demands on real time information.

3.15 Resilience in networks, therefore, also includes accommodating changes in technology, including the infrastructure needed to support the use of alternative fuels, and digital connectivity will also require our national networks to evolve and adapt in order to utilise the benefits that technology can bring.

3.16 Interventions can also help to address the strategic resilience of the network, responding to the changing needs of the economy and the underlying imperative set out in chapter 2 to ensure goods, people and services can traverse the network safely and efficiently through, for example, the provision of a reliable alternative or complementary strategic route. Network resilience also means optimising the outcomes of transport infrastructure delivery at a local, regional and national level, taking opportunities to improve connectivity and capitalising on all of the benefits infrastructure delivery brings.

Supporting the Government's environment and net zero priorities

3.17 Any national network Nationally Significant Infrastructure Project (NSIP) should seek to improve and enhance the environment irrespective of the reasons for developing the scheme. However, there may be instances where infrastructure interventions are required to bring about improvements to environmental outcomes. Such outcomes might include contributing to net zero target through, for example, electrification of rail, improvements to air quality through reductions

in congestion, or delivering localised environmental improvements to cultural heritage, landscape, or biodiversity.

Maintaining and enhancing the safety of national networks

3.18 Safety is of paramount importance in the development of our transport network and contributes to achieving a resilient network. Incidents on the network lead to increased unreliability, pressure on emergency services and delay for other users.

3.19 Although the UK's roads are amongst the safest roads in the world, road safety remains a key priority for the government. 1,857 people were killed or seriously injured in reported collisions on the SRN in 2021[43].

3.20 The second Road Investment Strategy (RIS2) sets out an ambition to create a safer and more reliable network, including a 'Zero Harm' goal of bringing the number of people killed or seriously injured on the network to a level approaching zero by 2040'. Achieving this will take a combination of improvements to the existing network, further development to the safety features of vehicles and a continued focus of driver behaviour.

3.21 Rail is one of the safest modes of transport, and the UK has one of the safest railway networks in Europe[44]. Between 2016-2020, passenger and workforce fatalities per billion train kilometres in the UK (4.0 fatalities) were

well below the European average (11.2)[45]. The frequency of train accidents with passenger or workforce fatalities is very low and this has been achieved against a pre-pandemic backdrop of a significant rise in the number of passengers and rail kilometres travelled. Maintaining these high standards of safety for passengers and workers requires continuous improvement, including the adoption of new technologies. Government continues to invest considerably in rail safety, as well as supporting a strong independent safety regulatory regime, which has been key to the UK having one of the safest railway networks in Europe. The Plan for Rail continues the government's strong emphasis on rail safety, with a clear commitment to maintain safe and secure railways for all.

Conclusion

3.22 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 a fully integrated system. The Examining Authority and the Secretary of State should, therefore, start their consideration of applications for development consent for the types of infrastructure covered by this National Policy Statement (NPS) on this basis. The Secretary of State should give substantial weight to considerations of need where these align with those set out in this NPS.

3.23 The following sections set out more detail on some of the specific drivers of the need for development across the modes.

The drivers of need for development of the national road network

3.24 Paragraphs 3.1 to 3.23 above set out the challenges that national networks face and the need to develop infrastructure in order to respond to those challenges. This section provides more details on these challenges for development of the national road network.

Network performance and meeting users' needs

3.25 Britain has seen a significant increase in the use of SRN. By 1993, motorway traffic was 42.2 billion vehicle miles, and in 2019 motorway traffic was 70.5 billion vehicle miles. This growth in traffic has not led to the equivalent provision of capacity; while motorway traffic has increased by two-thirds in this time (66%), motorway lengths have increased by less than a fifth (16%, 325 miles)[46]. To counter some of the associated deterioration in network performance, National Highways has focussed more resources on responding to the incidents and actively managing traffic conditions.

3.26 Users have a wide range of needs arising from using the SRN, from good management of roadworks, and maintaining road surface quality, many of which are outside the scope of this NPS. These aspects all contribute to the key priorities for road users of

reduced delays and improved journey time predictability consistently highlighted by Transport Focus research into road user priorities[47]. A report prepared for National Highways shows that delays are one of the main sources of annoyance on the network[48].

3.27 Congestion is the largest contributor to delay on the road network. With more vehicles on the road in 2021-22, average delay rose substantially. The average delay on the SRN in 2021-22 was 8.8 seconds per vehicle mile. This was higher than the 6.7 seconds per vehicle mile average delay in 2020-21, but still below the amount of delay in March 2019 to February 2020 of 9.5 seconds per vehicle mile[49]. Correspondingly, the average speed on the SRN was 58.6mph in 2021-22 down from 60.7mph, but higher than the average speed seen in 2019-20 prior to the COVID-19 pandemic – which was 58mph with a downward trend from 2018-19.

3.28 Increases in vehicle miles undertaken can lead to worsening performance of the network. The main drivers of traffic growth are population growth, economic growth, and the actual and perceived costs of motoring. The National Road Traffic Projections[50] projects road traffic between 2025 and 2060. The National Road Traffic Projections have modelled a range of scenarios, which explore uncertainties in demographic change, economic growth, regional redistribution, behavioural and technological change, and decarbonisation. As a result of these uncertainties, a range of possible outcomes have been identified. However, all scenarios

have projected a growth of traffic between 2025 and 2060 for England and Wales[51], with forecasts ranging from 12% to 54%. The Core scenario, which represents a world in which deviation from historic trends in the key drivers of demand and current Government policies is minimal, projects a 22% increase in traffic between 2025 and 2060.

3.29 This projected growth impacts different road types differently and varies across the different scenarios. The Core Scenario projects an increase in the distance travelled on motorways (measured as billion vehicle miles) of 27% between 2025 and 2060.

3.30 The National Road Traffic Projections also show that the pattern of traffic growth and congestion across regions may vary. Under the Core scenario, growth in the number of vehicle miles between 2025 and 2060 travelled on motorways varies between regions from 24.2% to 30%. Increases in the number of seconds of time lost due to congestion on motorways also varies under the Core scenario; from 81.8% in one region to 215.5% in another. This may have differing impacts on the user experience of motorways, especially if the largest increases in congestion are experienced in regions where lost time is currently low. Similarly, congestion may not increase in a linear way to traffic growth.

3.31 These projections are not definitive predictions of what will happen in the future and are not a predictor of the level of expansion required on the national

road network. They also do not reflect how transport demands may vary by mode or how road space may need to be distributed to better facilitate mass transit options (such as guided buses, trams, light rail and coaches), pressures on our road and give greater modal choice for journeys. They do, however, demonstrate that continued absolute traffic growth is likely under all scenarios, and therefore enhancements on the national road network will be necessary in order to ensure the national road network operates effectively in the face of growing demand. Infrastructure interventions can include measures such as addressing pinch points and improving flow aimed at addressing localised issues to help address reliability, predictability, and capacity issues at specific locations, which can in turn improve overall performance of the wider network of local roads and the SRN in that location. Equally interventions could include measures to reallocate road space to systems for journeys addressing traffic growth via a vision-led approach to that plans for modal shift.

3.32 The Road Investment Strategy outlines the government's 5-year strategy for investment in, improvement of, and management of the strategic road network. User needs and performance of the network are critical considerations in the preparation of the Road Investment Strategy. The Road Investment Strategy identifies the balance between large-scale infrastructure interventions covered by this NPS, and smaller-scale enhancements and maintenance. The Road Investment

Strategy also identifies individual schemes that meet the corridor of localised benefits and which collectively deliver strategic benefits from a programmatic approach.

Connectivity and economic growth

3.33 The SRN facilitates economic development. Sectors that rely on the SRN enable £409.7 billion of gross value added to be created within the economy[52]. It connects businesses – 91% of businesses in England are located within 9 miles of the SRN[53]. The SRN also connects key economic infrastructure – on average, an SRN junction is located 0.1 miles away from six of the seven biggest English ports and 1.6 miles away from the 10 biggest English airports[54]. As set out in chapter 2, in connecting places, it unlocks economic activity. This economic growth may be at a national level, for instance through strengthening the connectivity of the Union and supporting the development of the UK Freight Network, or at an international level through enhanced access to international markets through ports/airports, with the benefits that will bring to the logistics and freight sector, as well as wider business. It may be at the regional or local level, where a SRN enhancement may unlock land for development, the creation of new employment centres, opportunities for large-scale logistics or for the creation of new communities underpinned by sustainable transport, with the additional social benefits that this brings. For example, National Highways facilitated the delivery of 25 Growth and Housing Fund schemes

between 2015 and 2020 – this supported 37,000 homes and 43,000 jobs[55].

Resilience and adaptation to climate change

3.34 The SRN needs to adapt in order to become more resilient to a range of impacts from climate change (see paragraphs 4.30 to 4.41). Road Investment Strategy 2 has outlined the long-term vision for the SRN to be resilient to climate change and incidents, such as flooding, poor weather conditions, and blockages on connecting transport networks.

3.35 National Highways has published its third adaption report[56] under the Climate Change Act which outlines some of its adaptation actions, including maintenance programmes.

3.36 With winter rainfall expected to increase by approximately 6% by the 2050s, there is a risk of flooding, waterlogging of pavement surfaces and ground saturation affecting roads. The report includes a case study on the M6 Junction 10 Improvements, which prepares for future increases in rainfall and mitigates against surface water flooding through the drainage design which includes an additional capacity allowance of 30%.

3.37 Temperature changes can result in the deformation of asphalt leading to uneven road surfaces, expansion of concrete pavements at joints and failure of expansion joints and bridge bearings on structures.

3.38 The SRN will also need to respond to and utilise technological changes. Technology such as self-driving vehicles, access to alternative fuels and greater use of digital infrastructure may have a significant impact on how our roads are used, operated, and managed, including enabling better use of the existing network, safety improvement, and improved data on which to base network planning.

Environment

3.39 Developments on the SRN need to be sensitive to, respond to, and contribute to their environmental context. Changing legislation through, for example, the Environment Act 2021 has introduced more stringent environmental protection, and opportunities for enhancement of the natural environment.

3.40 Any scheme needs to address this emerging legislative and policy context appropriately. Infrastructure improvements may help to facilitate a reduction in emissions (such as carbon, air pollution, noise or discharges to water resources), improvements to the natural and built environment (such as landscapes or cultural heritage improvements) or increased accessibility for non-motorised users and reduced severance. For example, reducing the time vehicles spend in congestion may reduce carbon and air quality emissions at that particular location.

Safety

3.41 The government's overall vision and approach to road safety is set out in the Road Safety Strategic Framework. Ensuring the safety of users on the SRN is critical. The number of people killed or seriously injured on the SRN has decreased over the past ten years and casualty rates are lower on motorways than on other road types[57]. However, there remains a need to continue to address safety issues on the network, which may generate the need for specific enhancements to address particular locational problems or enhance safety measures across the SRN. Safety interventions are to reduce the number and severity of road traffic collisions.

Government's policy for addressing need of the national road network

3.42 There are interdependencies between the efficient operation of the SRN and its impact on the local road network and vice versa. Effective operation and optimisation of both the SRN and the local road network are essential to achieve the outcomes set by the Transport Decarbonisation Plan. There are a range of measures that can be employed to make the best use of all road capacity (not just the SRN) which may impact upon demand for the SRN. These include:

- Enabling more active travel and public transport (including buses, coaches and rail) in urban areas. This is at the heart of the Transport Decarbonisation

Plan and the government has introduced many policies intended to support this. The creation of mobility hubs and improving integration between modes through park-and-ride services, cycle parking provision at rail stations, and the coordination of bus / rail timetables, can all contribute.

- Providing genuine choice in transport mode by increasing accessibility to public transport, connecting places and by improving the environment for journeys by active travel will offer an alternative to the use of private vehicles. The government has committed to transforming local transport systems through Bus Back Better strategy and the City Region Sustainable Transport Settlements. In addition, Bus Back Better sets out measures enabling buses to be used by all thereby enhancing levels of accessibility.
- Integrating with spatial planning can support walking, wheeling and cycling or public transport as the natural first choice for journeys. Where developments are located, how they are designed and how well public transport services are integrated has a huge impact on whether people's natural first choice for short journeys is on foot or by cycle, by public transport or by private car. The Strategic Road Network and the delivery of sustainable development Circular 01/2022 establishes how additional spatial considerations in transport decisions can help tackle congestion and support better journeys for all road users.

- Greater deployment of technology can support more effective use of the network. Such technological interventions might include greater use of digital signalling, greater provision of route information to drivers, alternative fuels, self-driving vehicles or digital connectivity.
- Bringing forward maintenance schemes and small-scale enhancements to ensure that the SRN is operating as effectively as possible.

3.43 These interventions all have an important role to play in making effective use of the SRN and the government fully intends to make use of them. However, they will not be sufficient to address all the challenges of the SRN and may require specific interventions brought forward under the NSIP regime in specific locations in order to address those challenges.

3.44 The TDP commits to moving away from transport planning based on predicting future demand to provide capacity ('predict and provide') to planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (vision-led approaches including 'vision and validate,' 'decide and provide' or 'monitor and manage'). While vision-led approaches to minimise demand on the SRN are essential, there are varying challenges that will be presented by certain sites based on their land use, scale and/or location. In some cases, they will not always offset the need to increase capacity as modal shift

does not always mean less road use. The competing demands for road space will remain or even increase with diversification in the type and number of users, the vehicle they use or where alternative sustainable modes are prioritised.

3.45 While the long-distance nature of many journeys on the SRN limits the scope of potential interventions to support active travel, the transport corridors created by the SRN can support public transport by facilitating coach journeys and park-and-ride schemes, providing vital connections to jobs, international gateways and between our towns and cities. In addition, safe links and movements across the SRN can be incredibly valuable to support better accessibility and connectivity and enhance the local active travel and public transport offer.

3.46 The government's wider policy is to bring forward improvements and enhancements to the existing SRN where necessary to address the needs set out earlier. Enhancements to the existing national road network will include but are not limited to:

- New and improved junctions and slip roads
- Improvements to trunk roads, in particular, dualling of single carriageway strategic trunk roads and additional lanes on existing dual carriageways
- Measures to enhance capacity of the motorway network

3.47 In some cases, to meet the need set out in this NPS, 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 drivers of need for development of the national rail network

3.48 Paragraphs 3.1 to 3.23 above set out the challenges that national networks face and the need to develop infrastructure in order to respond to those challenges. This section provides more details on these challenges for development of the rail network.

Network performance: demand on the rail network

3.49 Demand for passenger rail travel has seen strong increases since the 1990s and had more than doubled between 1994/95 and the start of the pandemic[58]. Passenger numbers fell during the pandemic and have been increasing again, though remain at lower levels than seen before the pandemic.

3.50 There has been a shift in the type of demand, with the number of journeys made for commuting or business purposes remaining below 2019 levels but demand for leisure travel increasing more quickly. In October 2021,

the number of leisure journeys was around 90% of pre-pandemic levels, while commuter journeys remained at 54% of pre-pandemic levels outside of London and 41% in London. In this period leisure accounted for 55% of all rail journeys, an increase from 33% in Autumn 2019https://media.raildeliverygroup.com/news/rail-journey-trends-show-leisure-journeys-nearly-back-on-track-but-slower-return-of-workers-puts-city-centre-recovery-at-risk[59]. Though rail will continue to be an important way to transport people into and between urban areas, it is currently unknown when and whether demand will return to pre-pandemic (2019) levels, and whether commuting will fully recover due to the widespread adoption of flexible working practices. The Department will continue to monitor demand, and it is important to note that expansion to the network tends to increase overall demand.

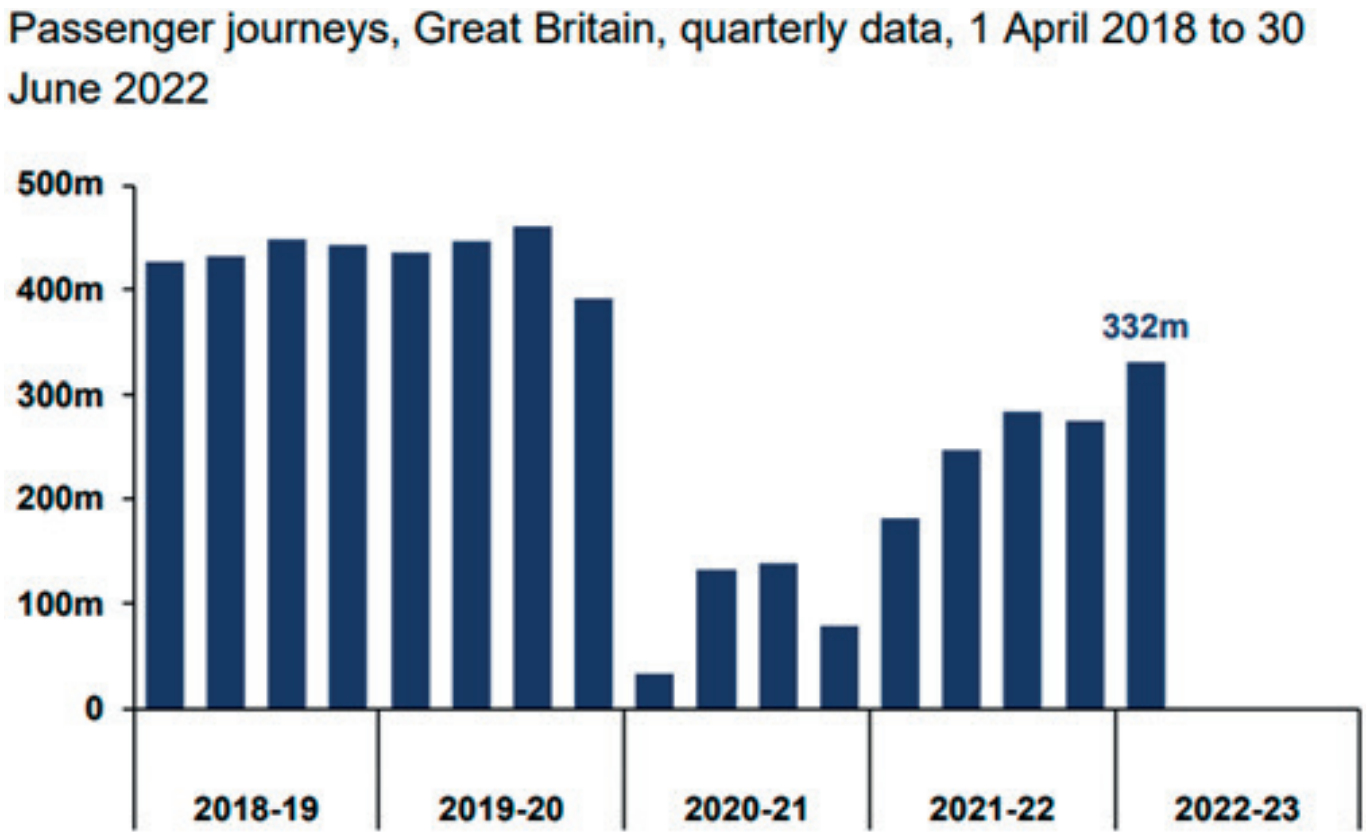

Figure 1 Passenger journeys, Great Britain, quarterly data, 1 April 2018 to 30 June 2022. Source: Passenger rail usage April to June 2022, ORR

Figure 1 shows passenger journeys in Great Britain from April 2018 to June 2022. The data shows a peak of 461 million passenger journeys in October to December 2019 followed by a decrease of 92% to 35 million in April to June 2022. significant decrease (approximately 75%) in passenger journeys in 2020. In the first quarter of 2022, rail passenger numbers were 332 million, and are therefore lower than pre-COVID levels.

3.51 Great Britain has a very intensively used rail network. The National Infrastructure Commission's Rail Needs Assessment identified existing capacity,

frequency, and speed shortfalls on the existing network. In the Midlands and North, for example, there are capacity constraints where two-track lines carry a mix of passenger and freight traffic, with few opportunities for fast trains to overtake slow trains, and lower performance than the national average. Government has invested in resolving capacity constraints in recent years, with programmes such as the Transpennine Route Upgrade increasing capacity on congested lines.

3.52 As passenger demand changes, some previous capacity constraints will abate but others will remain, with the possibility that new pressures could arise in response to the shift in location of demand and the type of demand (e.g. towards leisure). Moreover, some capacity challenges around accommodating both rail freight and passenger services in some areas could remain.

3.53 The national rail network also provides important international connections to continental Europe via the Channel Tunnel and High Speed 1. Prior to COVID-19, international high-speed passenger services carried over 11 million passengers per year with Eurostar, the only international operator at present. Whilst international travel passenger numbers collapsed due to COVID-19, we have seen a strong recovery since early 2022, demonstrating the clear demand for international rail. The government fully supports the continued growth and expansion of international rail services, including to new European destinations.

3.54 The rail network is used to move freight across a number of key commodities, and acts as an important link in ensuring the resilience of the UK supply chain. While total freight moved has declined since peaking in 2013/14,[60] there has been an increase in the intermodal market, with a 5% increase in net tonnes kilometres moved since 2013/14, and the construction market with a 44% increase since 2013/14[61].

3.55 Additionally, prior to COVID-19, Network Rail has published future freight demand forecasts, estimated using a range of different scenarios. With favouring factors and high market growth, the possibility of tonnage growth could be up to 49% higher in 2023/24 compared to 2016/17[62]. Even when accounting for a wide range of market scenarios, industry-endorsed forecasts indicate strong long-term rail freight growth on key freight corridors between now and the 2040s. This overall growth reflects forecast growth and an improvement in the competitiveness of the rail industry.

3.56 Government strongly supports growth in these sectors as they are predicted to have the greatest ability to transfer goods from road to rail, supporting the wider modal shift agenda and decarbonising our transport network. With the correct infrastructure in place, modal shift can be facilitated at pace, unlocking the benefits of rail freight.

3.57 There will therefore be a need to reallocate network capacity and capability to meet this demand for rail

freight, particularly given the need to accommodate this growth alongside changing passenger demand.

User needs

3.58 The top drivers of passenger satisfaction in Autumn 2019 were punctuality/ reliability, cleanliness inside the train and the frequency of trains on the route. Punctuality and reliability are the number one priority for improvement and the biggest driver of satisfaction amongst passengers[63].

3.59 Of passengers surveyed in 2019, 82% were satisfied with their overall journey, close to Network Rail's target of 83.5%[64]. 75.1% of trains arrived at all their scheduled station stops within a minute in 2021, against 65.0% of trains in 2019[65]. Prior to 2020/21, punctuality/ reliability had been the largest single complaint category over the previous five years[66]. The decreased usage of the rail network during the pandemic meant that demand and capacity were more closely aligned than they had been prior to the pandemic, so it is reasonable to conclude that this higher passenger satisfaction was, in part, due to less disruption on the network due to lower numbers of passengers and services.

3.60 As freight trains share the railway with passenger services, any improvement in the network has the potential to lead to an improved service for freight users and customers[67]. To continue to meet the needs of freight customers as a result of modal shift and forecast increase in demand for rail freight, and particularly to

address the critical challenge of ensuring sufficient capacity for freight, alongside passenger services, the network will need to reallocate its capacity and support modal interchanges. This could enable more capacity for freight trains, alongside passenger services, to run, and lead to the market opening up to more customers and maximising the broader benefits of rail freight, whilst improving the current service and punctuality customers receive.

Connectivity and economic growth

3.61 Well-targeted rail investments have a vital role to play in improving connectivity for people and goods to and between economic centres. Rail can provide greater capacity into and between urban centres, providing some relief to the constrained capacity of the urban road network. Equally, there are limited alternatives to rail for many key domestic freight flows, especially due to the number of heavy commodities which would be significantly less effectively moved by other modes, such as construction goods.

3.62 Transformational capacity improvements on the network have the potential to improve economic growth in an area. Improved and new rail links in less well-connected communities will enable better access to jobs, education, skills, housing, and leisure opportunities, and help reduce aspects of geographical inequality. It also catalyses growth in and around stations to increase housing delivery at density. Better connections

into and between cities create opportunities to drive agglomeration so that businesses can collaborate and compete more effectively and expand labour markets.

3.63 Rail freight also plays a major role in supporting the UK economy and resilient supply chains. A report commissioned by Rail Delivery Group estimated benefits of £2.45bn to the UK annually per year, comprising of £1.65bn of user benefits (including cost and time savings and reliability improvements) and £800m in social benefits from modal shift. The report also estimated that 90% of benefits likely accrue to freight customers and wider society are outside of London and the South East. Yorkshire and the Humber accounted for the largest total benefit with a 35% share of the total benefits, and London only accounted for 3% of total benefits[68].

3.64 Freight trains carry goods worth over £30bn per year across a range of different commodities, specifically supporting construction and intermodal flows, which can include customer goods[69]. Rail freight enables the movement of large volumes of essential consumer goods and is especially useful for transporting heavy materials such as wood and steel, as well as potentially dangerous goods such as nuclear waste. Emerging markets and alternative models such as high-speed freight, where freight is moved using passenger trains into urban centres, have the potential to improve connectivity and provide key interchanges to facilitate modal shift for last mile goods journeys, supporting decarbonisation.

3.65 Additionally, rail freight strengthens the UK supply chain by providing access to international trade. Rail freight moves one in four containers entering the UK, with links to each of the major ports such as Felixstowe, Southampton and London Gateway, moving goods from abroad to key logistics facilities in the Midlands with other freight modes transporting them onwards to the final destination[70].

3.66 There will therefore be a need to improve the network to support economic growth through better passenger and freight connections.

Resilience and adaptation to climate change

3.67 There is a need for continued investment in maintenance and improvements to improve the resilience of the railway in the face of changing climate. Climate change is likely causing more frequent and severe extreme weather events, impacting the services provided to customers and accelerating the deterioration of assets[71].

3.68 For example, heavy rainfall may result in delays to the arrival or departure of trains or cause to slippery conditions on platforms. In more challenging cases, trains can be stopped from running, and railway infrastructure may be obstructed and damaged resulting in costly repairs. In extreme cases, there may be need for more substantial repair work.

3.69 There is a significant cost associated with impacts from climate change on the rail network; wind and flooding cost Network Rail over £275m between 2006/07-2020/21[72]. Further investment in resilience to extreme weather may be needed to mitigate these impacts.

Environment

3.70 As with roads, any developments on the rail network need to be sensitive to, respond to, and contribute to their environmental context. Changing legislation through, for example the Environment Act 2021, has introduced more stringent environmental protection, and opportunities for enhancement of the natural environment.

3.71 Any scheme needs to address this emerging legislative and policy context appropriately. Infrastructure improvements may help to facilitate environmental improvements such as a reduction in emissions (for example carbon or noise). Chapter 2 has already set out the contribution that rail can play in decarbonising transport and the need to decarbonise rail further. At present, 38% of the rail network is electrified[73]. Further electrification to phase out the use of diesel-only trains by 2040, together with use of alternative technologies such as low-carbon fuels and innovation in battery and hydrogen technologies, will be needed to reduce air and noise pollution and enable a zero-carbon railway.

Safety

3.72 It remains essential that the safety of the network is maintained and improved. The government continues to invest considerably in rail safety, as well as supporting a strong independent safety regulatory regime, which has been key to the UK having one of the safest railway networks in Europe, and safety performance continues to improve. The Williams-Shapps Plan for Rail continues the government's strong emphasis on rail safety, with a clear commitment to maintain safe and secure railways for all.

3.73 The introduction of new technologies and risk management techniques have been key drivers in these improvements and the challenge for the industry is to maintain and, where possible, improve safety performance in a more efficient and cost-effective way.

Government's policy for addressing need of the national rail network

3.74 The government is ambitious in supporting the realisation of benefits from our rail network. Notwithstanding the impacts of the COVID-19 pandemic, we are clear about the benefits that it provides to our country and support its success, as part of a broader transport network.

3.75 The government is committed to investing in rail and has set out its ambition with the largest ever single investment in rail. The £96bn Integrated Rail Plan for

the North and Midlands provides a long-term pipeline of investment in major rail schemes which deliver against these strategic objectives. Government also continues to invest in new and restored links through the Rail Network Enhancements Pipeline and programmes such as Restoring Your Railway, as well as continuing to significantly invest in the maintenance and renewal of our existing railway. Additionally, we continue to support rail freight's growth through the Modal Shift Revenue Support Scheme, which facilitates modal shift of freight from road and rail and through the Rail Network Enhancement Pipeline. Across rail, however, we are clear about the need for choices to be made – to maximise the benefits from our investments in rail, while supporting financial sustainability.

3.76 In the short to medium term, the government's policy, as part of its broader transport policy, is to improve the connectivity, capacity and reliability of the railway network in order to realise the benefits of rail to our country. This involves addressing the demand for passenger and freight services (and reconciling the need for these services to effectively run alongside each other), meeting customer needs, unlocking long-term economic growth and new settlements as well as decarbonisation. Interventions may be required to address any of these needs. In all cases, the need for improvements to the rail network, including new rail links, will be balanced against the need to deliver financial sustainability for the rail sector. Continuous improvement to the network

is also needed to maintain and enhance the safety of the railway.

3.77 We will look to meet these needs through better utilisation and renewal of existing assets, including through operational interventions such as timetabling. This reflects the critical importance of ensuring financial sustainability on the railway and securing value for money from existing infrastructure. In some cases, changes to timetabling and small infrastructure improvements such as track and signalling upgrades or platform extensions will improve network reliability and capacity.

3.78 However, larger interventions including new rail links will be required in a number of cases to meet the needs set out above, such as where the network is at capacity or places lack connectivity, with consideration of the affordability and value for money of the intervention. The government will look to make appropriate improvements or additions to the rail network to improve capacity, connectivity, and reliability, including removing pinch points and blockages, upgrading existing infrastructure, reopening old alignments, adding new rail lines and stations to the network, or improving critical enabling assets such as maintenance facilities.

3.79 Rail is a safe, green and efficient mode of transport for large passenger volumes and for long distances, including inter-city journeys. However, improvements to the rail network will be needed to support decarbonisation. These may include decarbonisation

of the existing network through improvements in power supply and rolling stock, such as the adoption of electric, battery, and hydrogen technologies. Further, the government's walking and cycling plan, Gear Change, includes a commitment to implement greenways to improve traffic free links between communities disrupted by the construction of new railways.

3.80 Government is committed to supporting the growth of rail freight in particular, due to the environmental and economic benefits of the sector. It has an important role to play in our logistics and supply chains. Capacity, connectivity and reliability improvements (including those which facilitate passenger and freight services operating effectively beside one another) alongside seamless modal interchange will make rail a more competitive option against other transport modes for freight, where there are mode shift benefits to be gained, contributing to the government's aim to support the growth of rail freight. Increased connectivity will also allow for a more resilient supply chain, supporting the environmentally friendly and effective transportation of goods as a system package as well as providing freight and supply chain options for large freight generators such as ports.

3.81 The government remains committed to promoting rail freight and it is important the right infrastructure is in place to enable the sector to realise the full range of benefits it can provide economically, environmentally and socially.

3.82 Government will continue to improve the rail network, improving modal interchanges, providing connectivity for people and goods and realising the benefits of rail to our country.

Drivers of need for strategic rail freight interchanges

3.83 Paragraphs 3.1 to 3.23 above set out the challenges that national networks face and the need to develop infrastructure in order to respond to those challenges. This section provides more details on these challenges for development of SRFIs.

Network performance and resilience

3.84 Rail freight plays an important part in our supply chain resilience. Following COVID-19, rail freight volumes have now recovered to comparable pre-pandemic levels and in some areas grown. For example, over two-thirds of all freight moved was domestic intermodal or construction freight, with moved volumes for construction, metals and other are higher than they were two years ago[74]. Intermodal freight is expected to continue to be a key freight growth market and Network Rail forecast that rail freight is due to continue growing, supported by a Rail Freight Growth target. The growth in these areas, as well as the range of key commodities moved, play an important part in the resilience of the supply chain.

3.85 SRFIs reduce the cost to users of moving freight by rail, by streamlining the process and enabling warehouse facilities to be incorporated into the end destination. They are additionally important in facilitating the transfer of freight from road to rail thereby reducing trip mileage of freight movements on both the national and local road networks, which incentivises the modal shift of freight from road to rail.

3.86 SRFIs also facilitate important trade links, improve international connectivity and enhance port growth, with the Future of Freight report noting that the international rail freight through the channel tunnel provides a resilience and more sustainable alternative means of transport in and out of the UK[75].

User needs

3.87 The logistics industry provides warehousing and distribution networks for UK manufacturers, importers and retailers – currently this is predominantly a road-based industry. As freight and logistics operators seek to reduce their carbon emissions, they are increasingly looking to modal shift to rail for the middle journey of goods, for example, ports to warehouses and warehouses to distribution centres. This requires the logistics industry to develop new facilities that need to be located alongside the major rail routes, close to major trunk roads as well as near to the conurbations that consume the goods.

3.88 The UK's network of warehouses has also evolved from places focused on storage and inventory to vital

hubs supporting efficient aggregation, disaggregation, and distribution of goods. SRFIs are a key part of this infrastructure, providing both storage processing facilities and onward connectivity to support the cross-modal transfer of goods in order to deliver the full range of benefits rail freight can provide.

3.89 A network of SRFIs is a key element in aiding the transfer of freight from road to rail, supporting sustainable distribution and rail freight growth and meeting the changing needs of the logistics industry, especially the ports and retail sector. SRFIs also play an important role in reducing trip mileage of freight movements on road networks, especially when supported by intermodal Rail Freight Interchanges[c], which, when located in areas currently unaddressed by rail, will serve to boost traffic from SRFIs and inbound volumes.

3.90 Rail Freight Interchanges enable freight to be transferred between transport modes through consolidation centres, thus allowing rail to be used most effectively to undertake the long-haul primary trunk journey, with other modes (usually road) providing the secondary (final delivery) leg of the journey. Rail Freight Interchanges can relate to any commodity sector,

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c Intermodal rail freight interchanges are regional railheads whose principal flow of traffic is containerised general merchandise traffic, as opposed to bulk materials such as aggregates, biomass or waste.

including rail-served concrete batching plants, steel terminals or parcel docks. However, the siting of many existing rail freight interchanges in traditional urban locations can mean that there is difficulty in expanding them as they lack warehousing. These Rail Freight Interchanges have value in addressing urban logistics needs such as urban retail or parcel deliveries, but a wider network will further support the modern logistics and supply chain industry.

3.91 In order to meet the needs of these users, there may be a greater demand for both an updated network of Rail Freight Interchanges and SRFIs in new locations to support this aim.

Connectivity and supporting economic growth

3.92 Recently consented SRFIs are expected to create thousands of jobs on site, with additional roles created in the wider economy through indirect and supply chain links at a range of skills levels. Expansion at existing SRFI sites is also expected to create numerous new roles, supporting local economies and levelling up.

3.93 Global seaborne trade is predicted to grow. As the UK is an island nation and 95% of its imports and exports transit our ports, these ports are also predicted to grow to meet that economic demand and facilitate those increased volumes of goods and trade for UK businesses and consumers. While ports continue to invest in their

own infrastructure growth, it is vital that this is mirrored in the growth in national network capacity and connectivity.

3.94 Effective, efficient and environmentally friendly links for freight to and from ports are key enablers for UK economic productivity and competitiveness. Therefore, it is important that there is a mix of freight options for movement of goods from ports, with safe, direct and efficient freight routes for road-based journeys and with rail freight acting as a key factor in securing sustainable modal shift, and many ports noting demand for rail freight and seeking enhanced rail connectivity. Port diversification and co-location of logistics and warehousing for the processing of freight can also reduce the miles travelled by our goods.

3.95 Such connectivity links need to be considered as a system with key routes from ports to major logistics hubs and SRFIs being upgraded to confer the full benefits of rail freight and not build in bottlenecks. Without parallel growth in national networks, ports' own growth can be constrained, along with an increase in the economic, amenity, and congestion disbenefits.

Environment

3.96 Supporting the effective development of strategic rail freight interchanges (and other rail freight interchanges) in the right locations as well as other key enablers, will be a critical element of realising the full range of environmental benefits that rail freight can offer.

3.97 As chapter 2 set out, rail is a low-carbon transport mode, comprising only 1% of 2019 domestic greenhouse gas emissions. Rail is also currently the only means of transporting heavy goods in a low-carbon way using existing, proven technology through electrification. However, it is key that the sector fully decarbonises if the UK is to reach its net zero targets.

3.98 Government is also clear on the need to encourage modal shift from road to rail to realise the full environmental benefits and continues to provide funding through the Modal Shift Revenue Support grant to enable goods to be moved by rail where other modes have an economic advantage.

3.99 SRFI developments will need to be sensitive to, respond to, and contribute to their environmental context. For developments such as SRFIs, it is likely that there will be local impacts in terms of land use and increased road and rail movements. It is important for the environmental impacts to be taken into account when planning a development, by avoiding and mitigating impacts and opportunities for environmental enhancement realised.

Government's policy for addressing need for SRFIs

3.100 The government's vision for transport not only sets a path to net zero emissions, but it is also a vision for a sustainable transport system fundamentally better in every way, improving journeys, decarbonising the

network, meeting the needs of freight and logistics at all links in the supply chain, driving growth and opportunity, and boosting the health of the nation. The government, therefore, believes it is important to facilitate the development of the rail freight industry including supporting growth areas such as intermodal where there is a high opportunity for modal shift. The transfer of freight from road to rail has an important part to play in a low carbon economy and in helping to meet net zero targets.

3.101 The government has been clear on the benefits of rail freight and its commitment to growing the sector, both through the Plan for Rail where the creation of a freight growth target was outlined, and the Call for Evidence from Great British Railways Transition Team to develop this target. To be able to successfully achieve that growth target, the right infrastructure needs to be in place.

3.102 To facilitate this modal shift, a network of SRFIs is needed across all regions, to serve regional, sub-regional and cross-regional markets. In all cases, it is essential that these have good connectivity with both the road and rail networks, in particular the strategic rail freight network. The enhanced connectivity provided by a network of SRFIs should, in turn, provide improved trading links with our international trading partners and improved international connectivity and enhanced port growth.

3.103 Following the designation of the NPS in 2015, there have been several applications which have received development consent and are operational. This has gone some way towards facilitating an expanding network; however, to meet government's ambitions for rail freight growth there remains a need for appropriately located SRFI across all regions to enable further unlocking of benefits.

3.104 There are a range of options to address needs as, set out in Table 1, but these are neither viable nor desirable.

Reliance on existing rail freight interchanges to manage demand	Relying on the existing infrastructure is not viable and would cause a constraint on economic activity. The current network of Rail Freight Interchanges and SRFIs are not sufficiently located to realise the full benefits of rail freight across the country. Additionally, further growth is expected, especially in the intermodal market, and the current infrastructure will not be able to accommodate the growth in demand.
Reliance on road-based logistics	Government is committed to modal shift from road to rail, providing both social and economic benefits to the UK, such as decreasing congestion and improving air quality, as well as boosting the economy. A network of both rail and road freight enables a more secure and resilient supply chain, as well as encouraging competition within the freight sector and driving down cost. The government is also committed to growing rail freight due to the environmental benefits of the sector, with rail freight emitting approximately 75% less CO_2 than equivalent transport by road.

Reliance on a larger number of smaller rail freight interchanges	Whilst this would go some way to meeting the need, Rail Freight Interchanges do not provide the scale and efficiencies that the logistics sector requires, nor are they are effective in facilitating modal shift and providing cost savings to moving goods by rail. However, since the location sites for SRFI will be limited, a complementary network of Rail Freight Interchanges is still required to support an expanded network of SRFIs.

Table 1: Options to address need

3.105 The government has therefore concluded that there is a compelling need for an expanded network of SRFIs. It is important that SRFIs are located near the markets they will serve – major urban centres, or groups of centres – and are linked to key supply chain routes. Given the locational requirements and the need for effective connections for both rail and road, the number of locations suitable for SRFIs will be limited, which will restrict the scope for developers to identify viable alternative sites.

3.106 Existing operational SRFIs and other intermodal Rail Freight Interchanges are situated predominantly in the Midlands and the North. Conversely, in London and the South East, away from the deep-sea ports, most intermodal Rail Freight Interchange and rail-connected warehousing is on a small scale and can be poorly located in relation to the main urban areas. However, they will continue to play an important role in delivering modal shift and every effort should be made to ensure

they are appropriately upgraded and improved to optimise their contribution.

3.107 This means that SRFI capacity needs to be provided at a wide range of locations, to provide the flexibility needed to match the changing demands of the market, possibly with traffic moving from existing Rail Freight Interchange to new larger facilities. There is a particular challenge in expanding rail freight interchanges serving London and the South East.

3.108 Consideration should be given to ensuring existing SRFI locations are taken into account when making an application, to ensure that SRFIs are strategically located and thus enable a cross-country network which unlocks the full range of benefits that an expanded network of SRFIs can provide. Whilst there may be a natural clustering of SRFI proposals in the distribution heartland of the nation, consideration should be given to proposals for SRFIs in areas where there is currently lesser provision.

4. General policies and considerations

General principles of assessment

4.1 This chapter sets out general policies in accordance with which applications relating to national networks infrastructure are to be decided.

4.2 Subject to the detailed policies and protections in this National Policy Statement (NPS), and the legal constraints set out in the Planning Act 2008, there is a presumption in favour of granting development consent for national networks Nationally Significant Infrastructure Projects (NSIPs) that fall within the need for infrastructure established in this NPS. The statutory framework for deciding NSIP applications where there is a relevant designated NPS set out in section 104 of the Planning Act 2008.

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 faster and more reliable journey times, the facilitation of economic development, including job creation, reducing geographical disparities, connectivity, housing, social

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, mitigate or compensate for any adverse impacts.

4.4 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 requirements in the Development Consent Order. If development consent is granted for a proposal and at a later stage the applicant wishes, for 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 Order. The application to change the consent should be in line with the government's guidance on the procedures for making a change to a Development Consent Order for NSIPs and may need to be accompanied by environmental information to supplement that which was included in the original environmental assessment.

Business case

4.5 Applications for road and rail projects (with the exception of those for strategic rail freight interchanges, for which the position is covered in paragraph 4.8 below)

will normally be supported by a business case prepared in accordance with Treasury Green Book principles and the Department's Transport Business Case guidance and Transport Analysis Guidance. Transport Appraisal Guidance assesses the costs, benefits and risks of alternative ways to meet government objectives. It helps decision makers to understand the potential effects, trade-offs and overall impact of options by providing an objective evidence base for decision making. The purpose of the economic dimension of the business case is to identify the proposal that delivers best public value to society, including wider social and environmental benefits; however, the economic case is one of five cases that comprise the business case, and government decisions are based on all five. 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 benefits and adverse impacts of a proposed development. It is expected that schemes brought forward through the Development Consent Order process by virtue of section 35 of the Planning Act 2008, should also meet this requirement.

4.6 The Department's Transport Appraisal Guidance is updated regularly. This is to allow the evidence used to inform decision-making to be up to date. Where updates are made during the course of preparing analytical work, the updated guidance is only expected to be used where

it would be material to the investment decision and in proportion to the scale of the investment and its impacts.

Local Transport Model

4.7 Applications for road and rail projects should 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. An assessment of the benefits and costs of schemes under a range of scenarios should reflect future uncertainty, 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.

Wider strategies

4.8 In the case of SRFIs, judgement of viability will be made within the market framework and take account of government strategies, including the Future of Freight Plan, any identification of a National Freight Network and interventions such as investment in the strategic rail freight network and Great British Railway Strategic Plans. The radial proximity of a proposed site from

existing SRFIs will be considered to ensure SRFIs are strategically located and do not abstract traffic from an extant SRFI and are strategically and technically viable. Additionally, the number of SRFI connections on any section of the route should not adversely affect the operational reliability of the wider network or impact performance of other services.

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. Development consent 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. Community Infrastructure Levy (or any successor to it) may also be payable on NSIP applications.

Environmental Assessment

The government has announced plans to bring forward legislation to replace the existing EU-generated systems of Environmental Impact Assessment and Strategic Environmental Assessment with a domestic framework of environmental assessment. The new system would be brought forward through subsequent regulations following further consultation. Environmental assessment

would still be required and if introduced relevant plans and projects would have to comply with such regulations. Until a new system is implemented, current legislation on environmental assessment continues to apply.

4.10 NSIP applications need to include an environmental assessment. This assessment is undertaken under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) framework which requires projects to be accompanied by an Environmental Statement. Regulation 14 of and Schedule 4 to the Environmental Impact Assessment (EIA) Regulations set out the information that should be included in the environmental statement.

4.11 A key part of environmental assessment is the consideration of cumulative effects. The applicant should provide information on how the effects of the proposal would combine and interact with the effects of other development, where relevant. For most practical purposes this means that the applicant should consider the impact of other existing and committed developments within an appropriate geographical area and assess the additional impact of their own development. Other evidence for example, from a Transport Business Case, appraisals of sustainability of relevant NPSs or strategic environmental assessment of development plans, may assist the Secretary of State in reaching decisions on proposals and on mitigation measures that may be required. The Secretary of State should consider how the accumulation of, and interrelationship between, effects

identified in the environmental assessment might affect the environment, economy, or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place.

Habitats Regulation Assessment for internationally important nature sites

The government's "Nature Recovery Green Paper: Protected Sites and Species", consulted on changes to the Habitats Regulation Assessment process. If changes are made, relevant plans and projects would have to comply with such relevant regulations. Until a new process is implemented, current legislation continues to apply.

4.12 Under the Habitats Regulations, the Secretary of State must consider whether it is possible that a plan or project could likely have a significant effect, (either alone or in combination with other plans or projects) on a protected site which forms part of the UK National Site Network (Special Areas of Conservation and Special Protection Areas), or on any site to which the same protection is applied as a matter of policy (i.e. listed or proposed Ramsar sites, potential Special Protection Areas, possible Special Areas of Conservation and sites used to compensate for adverse effects on habitat sites). The term 'habitat sites' is used to refer collectively to such sites throughout this NPS. Such an assessment should

be made with due regard to the conservation objectives of any relevant habitats site(s).

4.13 The applicant should seek the early advice of the appropriate Statutory Nature Conservation Body and provide the Secretary of State with such information as the Secretary of State may reasonably require, to determine whether or not the plan or project should proceed to the Appropriate Assessment stage of Habitats Regulation Assessment.

4.14 Where a proposed plan or project is considered likely to have a significant effect on a habitats site, the applicant must provide sufficient information with the application to enable the Secretary of State to make an appropriate assessment of these likely effects in view of the site's conservation objectives. The assessment may consider the effect of any mitigation measures and the Statutory Nature Conservation Body must be formally consulted on the assessment and its advice considered. The applicant should also consider agreeing an Evidence Plan with the Statutory Nature Conservation Body to help determine the information required[76].

4.15 Such plans or projects may only proceed if the assessment concludes they will not adversely affect the integrity of the site or, notwithstanding a negative assessment, there are no alternative solutions, and they must proceed for imperative reasons of overriding public interest. The applicant must demonstrate that they have sought advice from the Statutory Nature Conservation

Body on whether any proposed compensation is appropriate to maintain the overall coherence of the National Sites Network. They must also show that the compensation is secured or provide an indication as to how it can be secured to maintain the overall coherence of the National Sites Network. Provision of such information will not be taken as an acceptance of adverse effects on integrity and if an applicant disputes the likelihood of adverse effects, it can provide this information without prejudice to the Secretary of State's final decision on the effects of the potential development on the habitats site. If, in these circumstances, an applicant does not supply information required for the assessment of a potential derogation, there will be no expectation that the Secretary of State will allow the applicant the opportunity to provide such information following the examination.

4.16 During the pre-application stage, and without prejudice to the formal Habitats Regulation Assessment of the submitted plan or project, if the Statutory Nature Conservation Body gives an early indication that, irrespective of any anticipated mitigation measures, the proposed development is highly likely to lead to adverse effects on the integrity of one or more habitats sites, the applicant must include with their application such information required to assess a potential derogation under the Habitats Regulations[77].

Alternatives

4.17 Applicants should comply with all legal requirements, and any policy requirements set out in this NPS, on the assessment of alternatives. For example, current requirements include:

- The Infrastructure Planning (Environmental Impact Assessment) 2017 Regulations requires projects with significant environmental effects to include an outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects
- There may also be other specific legal requirements for the consideration of alternatives, for example, under the Conservation of Habitats and Species Regulations 2017 (as amended) and Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[78]
- 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) – where there is a policy or legal requirement to consider alternatives, the applicant should describe the alternatives considered in compliance with these requirements and in a proportionate manner.

4.18 National road or rail schemes that have been identified in relevant Road or Rail Investment Strategies will have been subject to an options appraisal process where relevant in line with existing Transport Appraisal Guidance, and proportionate consideration of alternatives will have been undertaken as part of the investment decision making process. The options appraisal may include other viable options for achieving the objectives of the project, including (where appropriate) other modes of travel, regulation, or other ways of influencing behaviour in line with Department for Transport guidance. The Examining Authority and the Secretary of State should satisfy themselves that the options appraisal process has been undertaken.

4.19 Where an options appraisal process has been undertaken, it should not be necessary to consider alternatives except where para 4.17 applies or in the wholly exceptional circumstances where case law would require consideration of alternatives as the proposed development involves such obvious adverse effects that the possibility of an alternative site or an alternative location within the site proposed by an applicant avoiding such adverse effects becomes a relevant planning consideration. In those exceptional circumstances where alternatives might be relevant, consideration of them should be proportionate. Where alternative schemes proposed are vague or inchoate, or have no real possibility of coming about, they are either irrelevant, or where relevant, will be given little or no weight, and

the extent to which they are considered should be determined accordingly.

Biodiversity net gain

4.20 Biodiversity net gain is an approach to development that delivers measurable improvements for biodiversity by creating or enhancing habitats in association with developments. Applicants should therefore not just look to mitigate direct harms, but also identify and deliver appropriate opportunities for nature recovery and wider environmental opportunities for enhancements by providing net gains for biodiversity.

4.21 Applicants should use the most appropriate version of the Department of Environment, Food and Rural Affairs (Defra) biodiversity metric[d] (as advised by Defra) to calculate their biodiversity baseline and inform their biodiversity net gain outcomes, and to present this data as part of their application. Biodiversity net gain should be applied in conjunction with the mitigation

d The Biodiversity Metric can be found at http://publications.naturalengland.org.uk/publication/6049804846366720

hierarchy[e] and does not change or replace existing environmental obligations.

4.22 Biodiversity net gain can be delivered onsite or wholly or partially off-site and should also be set out within the application for development consent. When delivering biodiversity net gain off-site, developments should do this in a manner that best contributes to the achievement of relevant wider strategic outcomes, for example by increasing habitat connectivity or enhancing other ecosystem service outcomes. Reference should be made to any Local Nature Recovery Strategy (which should be the primary reference point for those delivering biodiversity net gain off-site) and other relevant national or local plans and strategies, such as green infrastructure strategies, used to inform Biodiversity net gain delivery.

4.23 A government Biodiversity Gain Statement will set out the concept for Biodiversity net gain for NSIPs. The Secretary of State will need to be satisfied that the biodiversity gain objective in any relevant biodiversity gain statement has been met.

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e The principle that environmental harm resulting from a development should be avoided (through locating development where there will be less harmful impacts), adequately mitigated, or, as a last resort, compensated for.

Criteria for good design for national network infrastructure

4.24 Applicants should include design as an integral consideration from the outset of a proposal. Applying good design to national network projects should not be limited to general aesthetics. High quality and inclusive design goes far beyond aesthetic considerations. It demonstrates an understanding of context, local needs, history and culture, enhances local landscape character and is adaptable to future needs and technologies. The National Infrastructure Design Principles describes good design as:

- a key aspect of sustainable development. It includes opportunities to enable decarbonisation, incorporates flexibility, and builds resilience against climate change. The functionality of projects, including fitness for purpose, resilience and sustainability, is equally important.
- helping to improve the quality of life for local communities. It promotes inclusion, cohesion and increases accessibility. It creates safe spaces with clean air that improve health and wellbeing.
- giving places a strong sense of identity, creating a sense of place, connecting communities, addressing community severance and integrating into its surroundings. It makes a positive contribution to local landscapes within and beyond the project

boundary. Good design enhances local culture and character and supports local ecology, delivering net biodiversity gain, while protecting wildlife corridors[f] and irreplaceable natural assets and habitats.

- adding value by defining issues clearly from the outset. Good design also finds opportunities to add value beyond the main purpose of the infrastructure to consider the wider benefits savings on cost, the environment, materials and space. It is efficient in the use of natural resources, sustainable materials and energy used in construction.

4.25 A good design should meet the principal objectives of the scheme by applying the mitigation hierarchy to avoid, eliminate or substantially mitigate the identified problems and existing adverse impacts, by improving operational conditions, simultaneously minimising adverse impacts and contributing to the conservation and enhancement of the natural, built and historic environment. A good design will also be one that sustains the improvements to operational efficiency for as many years as is practicable, taking into economic, social and environmental impacts.

4.26 In light of the above, scheme design will be a material consideration in decision making. The Secretary of State needs to be satisfied that national networks infrastructure projects are sustainable, having

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f Areas of habitat connecting wildlife populations.

regard to appropriate industry good design guidance, and the applicant has considered, 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).

4.27 Applicants should have regard to the National Design Guidance, National Model Design Code, Local Nature Recovery Strategies, Local Air Quality Plans, the purposes of National Parks, Areas of Outstanding Natural Beauty, the Broads and any local design codes.

4.28 In their application, applicants should be able to demonstrate how the design process was conducted, effective engagement with communities and stakeholders and how the proposed design evolved to maximise design outcomes. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected with a clear articulation of its benefits. The Examining Authority and Secretary of State should consider the ultimate purpose of the infrastructure and the operational, safety and security requirements which the design must satisfy.

4.29 Applicants should consider taking independent professional advice on the design aspects of a proposal. A project board level design champion could be appointed, and a representative design panel used to maximise the value provided by the infrastructure. Also, the Design Council can be asked to provide design

review for NSIPs and applicants are encouraged to use this service[79].

Climate change adaptation

4.30 Section 10(3)(a) of the Planning Act 2008 requires the Secretary of State to have regard to the desirability of mitigating, and adapting to, climate change in designating an NPS.

4.31 This section sets out how applicants and the Secretary of State should take the effects of climate change into account when developing and considering infrastructure applications. As referenced in chapter 2 of this NPS, while climate change mitigation is essential in minimising the most dangerous impacts of climate change, previous global greenhouse gas emissions have already committed us to continued climate change in the future.

4.32 Article 7 of the Paris Agreement establishes a global goal on adaptation – of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in the context of the temperature goal of the Agreement. It aims to significantly strengthen national adaptation efforts, including through support and international cooperation.

4.33 To support planning decisions, the government produces a set of UK Climate Projections and has developed a statutory National Adaptation Programme[80]. In addition, the government's Adaptation Reporting

Power, invites authorities (a defined list of public bodies and statutory undertakers, including National Highways, Network Rail and the Office for Rail and Road) to assess the risks presented by a changing climate, include policies and actions to address climate risk, and set out progress made.

4.34 In certain circumstances, measures implemented to ensure a scheme can adapt to climate change may give rise to additional impacts. For example, as a result of protecting against flood risk, there may be consequential impacts on coastal change (see paragraphs 5.95 to 5.110). If this happens, the Secretary of State should consider the impact of the latter in relation to the application as a whole and the impacts guidance set out in chapter 5 of this NPS.

4.35 In preparing measures to support climate change, adaptation applicants should consider whether nature-based solutions could provide a basis for such adaptation. In addition to avoiding further greenhouse gas emissions when compared with some more traditional adaptation approaches, nature-based solutions can also result in biodiversity benefits as well as increasing absorption of carbon dioxide from the atmosphere (see also paragraphs 5.170 to 5.194 on the role of green infrastructure).

4.36 New national networks infrastructure will typically be a long-term investment and will need to remain operational over many decades, in the face of a changing

climate. Consequently, applicants must consider the direct (e.g. flooding of road or rail infrastructure) and indirect (e.g. flooding of other parts of the road or rail network) impacts of climate change when planning the location, design, build, operation and maintenance. The Secretary of State will need information on how the proposal will take account of the projected impacts of climate change and remain resilient.

4.37 The Secretary of State should be satisfied that applications for new national networks infrastructure have taken into account the potential direct and indirect impacts of climate change. This should include using the latest UK Climate Projections and associated research and expert guidance (such as the Environment Agency's Climate Change Allowances for Flood Risk Assessments[81]) applicable at the time the environmental assessment was prepared as part of their Development Consent Order application, to ensure they have identified mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure, with a high level of climate resilience built-in from the outset. The applicant should also be able to demonstrate how proposals can be adapted over their predicted lifetimes to remain resilient to a credible maximum climate change scenario. Should a revised set of UK Climate Projections or associated research be applicable after the preparation of the environmental assessment, the Examining Authority should consider whether they need to request further information from the applicant.

4.38 The Secretary of State should be satisfied that there are no features of the design of new national networks infrastructure critical to its safety or operation which may be seriously affected by more radical changes to the climate. Beyond that projected in the latest set of UK climate projections and taking account of the latest credible scientific evidence[g] on, for example, sea level rise. The Secretary of State should also be satisfied that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime.

4.39 Any adaptation measures should be based on the latest set of UK Climate Projections, the government's latest UK Climate Change Risk Assessment, when available[82] and in consultation with the Environment Agency's Climate Change Allowances for Flood Risk Assessments. Any adaptation measures must themselves also be assessed as part of any environmental assessment, which should set out how and where such measures are proposed to be secured.

4.40 Adaptation measures should be required to be implemented at the time of construction where necessary and appropriate to do so. However, where they 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

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g For example, additional maximum credible scenarios from the Intergovernmental Panel on Climate Change or Environment Agency.

(for example 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 (for example reserving land for future extension or increasing height of existing, or requiring new, sea walls). In these circumstances, the applicant should make a case to justify implementing adaptation measures later, set out clearly how the design could be adapted and have mechanisms in place (such as Development Consent Order requirements) for monitoring and implementation of these future adaptation measures.

4.41 The generic impacts advice in this NPS provides additional information on climate change adaptation. In particular, this section should be read alongside paragraphs 5.95 to 5.110 (coastal change and marine impacts), paragraphs 5.120 to 5.145 (flood risk), and paragraphs 5.243 to 5.259 (water quality and resources).

Pollution control and other environmental regulatory regimes

4.42 The planning and pollution control systems are separate but complementary. The planning system controls the development and use of land in the public interest. It plays a key role in protecting and improving the natural environment, public health and safety, and amenity, for example by attaching conditions to allow developments, which would otherwise not be

environmentally acceptable to proceed, and preventing harmful development which cannot be made acceptable even through requirements. Pollution control is concerned with preventing pollution through measures which prohibit or limit the release of substances to the environment from different sources to the lowest practicable level. It also ensures that ambient air, water, and land quality meet standards that guard against impacts to the environment or human health.

4.43 Issues relating to discharges or emissions from a proposed project which lead to other direct and indirect impacts on air quality, water quality and land quality, or which include noise, light 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.

4.44 Pollution from industrial sources in England and Wales is controlled through the Environmental Permitting (England and Wales) Regulations 2016 (the Environmental Permitting Regulations). Some projects covered by this NPS may be subject to the Environmental Permitting Regulations regime, which also incorporates operational waste management requirements for certain activities. When an applicant applies for an Environmental Permit, the relevant regulator (usually the Environment Agency but sometimes the local authority) requires that the application demonstrates that

processes are in place to meet all relevant Environmental Permit requirements.

4.45 The Environmental Permitting Regulations regime requires industrial facilities to possess an Environmental Permit and to meet limits on allowable emissions to operate. Larger industrial facilities undertaking specific types of activity are also required to use Best Available Techniques to reduce emissions to air, water, and land. In considering the impacts of the project, including residual impacts, the Secretary of State may wish to consult the regulator on any management plans that would be included in an Environmental Permit application.

4.46 Applicants are encouraged to begin pre-application discussions with relevant regulators, such as the Environment Agency and the Marine Management Organisation, as early as possible. Where applicants wish to parallel track Development Consent Order and Environmental Permit applications, applicants should start work towards submitting the permit application at least 6 months prior to the submission of an application for a Development Consent Order. 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.

4.47 Applicants must consult the Marine Management Organisation on national network NSIPs which could affect any relevant marine areas as defined in the

Planning Act 2008 (as amended by section 23 of the Marine and Coastal Access Act 2009). Applicants are encouraged to consider the relevant marine plans in advance of consulting the Marine Management Organisation. 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. The Secretary of State, the Examining Authority and the Marine Management Organisation should co-operate closely to ensure that national network NSIPs are licensed in accordance with legislation.

4.48 In considering an application for development consent, the Examining Authority and the Secretary of State should consider whether the development itself is an acceptable use of the land, and on the impacts of that use, rather than the control of processes, emissions or discharges themselves[83]. The Secretary of State will assume that the relevant pollution control regime and other environmental regulatory regimes, including those on land drainage, water abstraction and biodiversity, will be properly applied and enforced by the relevant regulator. The Secretary of State should act to complement but not seek to duplicate them.

4.49 The Secretary of State should be satisfied that development consent can be granted taking full account of environmental impacts. Working in close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies, such as the Marine Management Organisation, the Statutory Nature

Conservation Bodies, Drainage Boards, and water and sewerage undertakers, the Secretary of State should be satisfied early in the process and through parallel tracking of the Development Consent Order and Environmental Permits, before consenting any potentially polluting developments, that:

- the relevant pollution control authority is satisfied that potential releases can be adequately regulated under the pollution control framework
- the effects of existing sources of pollution in and around the site 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

4.50 The Secretary of State should not refuse consent because of pollution impacts unless there is good reason to believe that any relevant necessary operational pollution control permits or licences, or other consents would not be granted.

Common law nuisance and statutory nuisance

4.51 Section 158 of the Planning Act 2008 provides a defence of statutory authority in civil or criminal proceedings for nuisance. Such a defence is also available in respect of anything else authorised by an

order granting development consent. This would include a defence for proceedings for nuisance under Part III of the Environmental Protection Act 1990 ("the 1990 Act") (statutory nuisance) but only to the extent that the nuisance is the inevitable consequence of what has been authorised.

4.52 The defence does not extinguish the local authority's duties under Part III of the 1990 Act to inspect its area and take reasonable steps to investigate complaints of statutory nuisance, and to serve an abatement notice where satisfied of its existence, likely occurrence or recurrence.

4.53 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 5.111 to 5.119.

4.54 The defence of statutory authority is subject to any contrary provision made by the Secretary of State in any case by an order granting development consent (section 158(3) of the Planning Act 2008). When considering exceptions to the defence, the Secretary of State should

have regard to whether any nuisance is an inevitable consequence of the development.

Safety

Roads Safety

4.55 Highways developments provide an opportunity to make significant safety improvements and significant incident reduction benefits when they are well designed. Some developments may have safety as a key objective, but even where safety is not the main aim of a development, the opportunity should be taken to improve safety, including introducing the most modern and effective safety measures where proportionate. Consideration should also be given to wider transport objectives, including expanding active travel, creating safe and attractive walking, wheeling and cycling environments, enabling modal shift to sustainable transport options including public transport and decarbonisation. In developing roads schemes the applicant should have due regard to the needs of drivers and the imperative to ensure driver safety. Schemes should be developed with a mindset that accounts for the need for drivers to rest, particularly Heavy Good Vehicle drivers who need safe and secure roadside facilities that also cater for their welfare needs including the appropriate provision of high-quality washrooms, a catering offer and access to alternative fuel and digital infrastructure.

4.56 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 Department for Transport's Transport Appraisal Guidance and from National Highways. They should also put in place arrangements for undertaking the road safety audit process and ensuring their implementation. Road safety audits are a mandatory requirement for highway improvement schemes in the UK (including motorways). Road safety audits are intended to ensure that operational road safety experience is applied during the design and construction process so that the number and severity of collisions is as low as is reasonably practicable.

4.57 The applicant should be able to demonstrate that their scheme is consistent with the national Strategic Framework for Road Safety and with the National Highways Safety Framework for the Strategic Road Network. 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

- contribute to improvements in road safety for walkers and cyclists[84].

4.58 They will also wish to demonstrate that:

- they have considered the safety implications of their project from the outset
- they are putting in place rigorous processes for monitoring and evaluating safety.

4.59 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
- contribute to improvements in the safety of the SRN.

Rail Safety

4.60 It is the government's policy, supported by legislation, to ensure that the risks of passenger and workforce accidents are reduced so far as reasonably practicable. Rail schemes should take account of this and seek to further improve safety at every opportunity and where there is value for money in doing so.

4.61 The rail industry is required by law to consider the impact on safety of any proposed changes to the rail network through rigorous risk assessment. The principle of "so far as is reasonably practicable" is applied through the Railways and Other Guided Transport Systems

(Safety) Regulations 2006 (as amended) which are enforced by the Office of Rail and Road[85]. For significant developments, the rail industry is also required by legislation to comply with Common Safety Methods.

4.62 The applicant should be able to demonstrate that their scheme is consistent with all relevant regulations, industry guidance and regulatory guidance from the Office of Road and Rail, and that their safety assessment has considered the safety implications during the construction, commissioning and operational phases of the development.

4.63 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 deaths or injury arising from the scheme (noting that railway developments can influence risk levels both on and off the railway networks)
- contribute to improvements in societal safety levels.

4.64 The Secretary of State should not grant consent to development which would lead to an increase in the risk of death or injury.

Security considerations

4.65 National security considerations apply across all national infrastructure sectors. Department for Transport acts as the Lead Government Department for national

networks and in this capacity has lead responsibility for security matters in that sector and for directing the security approach to be taken. The Department works closely with government security agencies, including the Centre for the Protection of National Infrastructure and the National Cyber Security Centre, to provide advice to the most critical infrastructure assets on terrorism and other national security threats, as well as on risk mitigation.

4.66 Government policy is to ensure that, where possible, proportionate protective security measures are designed into new infrastructure projects at an early stage in the project development. Where applications for development consent for infrastructure covered by this NPS relate to potentially critical infrastructure, there may be national security considerations.

4.67 Where national security implications have been identified, the applicant should consult with relevant security experts from the Centre for the Protection of National Infrastructure and the Department for Transport, to ensure that security measures have been adequately considered in the design process and that adequate consideration has been given to the management of security risks. For some, this is a legal requirement as per section 119 of the Railways Act 1993. If the Centre for the Protection of National Infrastructure and the Department for Transport (as appropriate) are satisfied that security issues have been adequately addressed in the project when the application is submitted to the

Secretary of State, it will provide confirmation of this to the Secretary of State. The Secretary of State should not need to give any further consideration to the details of the security measures in its examination.

4.68 The applicant should only include sufficient information in the application as is necessary to enable the Examining Authority and the Secretary of State to examine the development consent issues and make a properly informed recommendation on the application.

4.69 In exceptional cases, where examination of an application would involve public disclosure of information about defence or national security which would not be in the national interest, the Secretary of State may direct that examination of that evidence should take place in closed session.

Health

4.70 National road and rail networks and strategic rail freight interchanges have the potential to affect the health, well-being and quality of life of the population. New or enhanced national network infrastructure may have direct impacts on health because of traffic, noise, vibration, air quality and emissions, light pollution, community severance, dust, odour, polluting water, hazardous waste and pests. They may also have indirect health impacts: for example, if they affect access to key public services, local transport, opportunities for walking,

cycling and wheeling, or the use of open space[h] for recreation and physical activity.

4.71 As described in the relevant sections of this NPS, where the proposed project has an effect on human beings, the applicant should assess these effects, identifying any potential adverse health impacts, and identify measures to avoid, reduce or compensate for adverse health impacts as appropriate. Enhancement opportunities should be identified by promoting local improvements for active travel and horse riders driven by the principles of good design to create safe and attractive routes to encourage health and wellbeing; this includes potential impacts on vulnerable groups within society, i.e. those groups within society which may be differentially impacted by a development compared to wider society as a whole.

Accessibility

4.72 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.

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h All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.

4.73 The government's strategy for achieving equal access for disabled people is set out in the Inclusive Transport Strategy[86]. 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.

4.74 Applicants must comply with any obligations under the Equality Act 2010. Public authority applicants are reminded of their duty to promote equality and to consider the needs of disabled people as part of their normal practice. The Public Sector Equality Duty[87] requires that public authorities have due regard to the need to:

- eliminate discrimination, harassment, victimisation and any other conduct prohibited by the Equality Act
- advance equality of opportunity between people who share a protected characteristic and people who do not share it
- foster good relations between people who share a protected characteristic and people who do not share it.

4.75 All applicants are also reminded that the Secretary of State must have regard to the Public Sector Equality Duty when exercising their functions.

4.76 As set out in paragraphs 4.5 to 4.6, applicants for road and rail projects (excluding SRFIs) will normally be supported by a business case prepared in accordance with Transport Business Case guidance. This includes distributional analysis, including assessments stemming from the Equality Act public sector equality duty, where appropriate.

4.77 Applicants should demonstrate the following where relevant:

- All reasonable opportunities to deliver improvements in accessibility on and to the existing national road network should be taken, including improvements for non-motorised users
- Severance can be a problem in some locations; where appropriate, applicants should seek to deliver improvements that reduce community severance and improve accessibility
- National Network infrastructure should incorporate good design, as expanded on in paragraphs 4.24 to 4.29, which includes improving accessibility of infrastructure for users and inclusive design.

Strategic rail freight interchanges

Rail freight interchange function

4.78 Rail freight interchanges are not only locations for freight access to the railway, but also locations for businesses, capable now or in the future, of supporting

their commercial activities by rail. Therefore, from the outset, a Rail Freight Interchange should be developed in a form that can accommodate both rail and non-rail activities including ensuring appropriate provision for Heavy Goods Vehicle drivers.

Transport links and location requirements

4.79 Given their strategic nature, it is important that new SRFIs or proposed extensions to Rail Freight Interchanges upgrading them to SRFIs are appropriately located relative to the markets they will serve, which will focus largely on major urban centres, or groups of centres, and key supply chain routes. As the majority of freight in the UK is moved by road, proposed new rail freight interchanges should have good road access, and provide appropriate parking and associated facilities to ensure Heavy Goods Vehicle driver wellbeing is observed, as this will allow rail to effectively compete with, and work alongside, road freight to achieve a modal shift to rail. Due to these requirements, it may be that countryside locations are required for SRFIs.

4.80 Adequate links to the rail and road networks are essential. Rail access will vary between rail lines, both in the number of services that can be accommodated, and the physical characteristics such as the train length and, for intermodal services, the size of intermodal units that can be carried (the ‘loading gauge’). As a minimum, a SRFI should ideally be located on a route with a gauge capability of W8 or more, or capable of enhancement to

a suitable gauge. For road links, the government's policy is set out in Circular 02/2013 The Strategic Road Network and the delivery of sustainable development (or relevant updated document).

4.81 SRFIs tend to be large scale commercial operations, which are most likely to need continuous working arrangements (up to 24 hours). By necessity they involve large structures, buildings and the operation of heavy machinery. In terms of location therefore, they may not be considered suitable adjacent to residential areas or environmentally sensitive areas such as National Parks, the Broads and AONBs, which may be sensitive to the impact of noise and movements. However, depending on circumstances, appropriate mitigation measures may be available to limit the impacts of noise and light.

4.82 SFRIs can provide many benefits for the local economy. For example, because many of the on-site functions of major distribution operations are relatively labour intensive, this can create many new job opportunities. The existence of an available and economic local workforce will therefore be an important consideration for the applicant.

Scale and design

4.83 The purpose of SRFIs is to facilitate modal shift of freight from road to rail. Schemes will only be permitted where they achieve this purpose and the Secretary of State is satisfied that rail facilities will come forward in a timely manner.

4.84 Applicants should develop rail infrastructure and buildings capable of rail connection from the outset, and consideration of further rail infrastructure to allow more extensive rail connection within the site in the longer term is strongly encouraged.

4.85 Applications for a proposed SRFI should provide for a number of rail connected or rail accessible buildings, plus rail infrastructure to allow more extensive rail functionality within the site in the longer term. Applicants should deliver rail terminal infrastructure and / or buildings capable of rail connection in conjunction with the wider development.

4.86 However, the Secretary of State recognises that applicants may need to deliver warehousing ahead of the final delivery and commissioning of connections to the rail network coming forward. In these circumstances the Secretary of State will want to ensure that operational rail connections are brought forward in a timely manner, which may include using requirements that secure operational rail connections after a specified period and/or before a development threshold is reached. The applicant should provide evidence of discussions and demonstrate agreement with Network Rail regarding the planned timeframe for the delivery and commissioning of rail network connections.

4.87 As a minimum, a SRFI should be capable of handling four trains per day and, where possible, be capable of increasing the number of trains handled.

SRFIs should, where possible, have the capability to handle 775 metre trains with appropriately configured on-site infrastructure and layout. This should seek to minimise the need for on-site rail shunting and provide for a configuration which, ideally, will allow main line access for trains from either direction. To create an environment that is capable of seamlessly transferring freight from road to rail, it is essential that SRFIs make appropriate provision for the receipt of Heavy Goods Vehicles, both for general site accessibility, including the capability of the local road network to accommodate large vehicles, and for providing adequate and secure Heavy Goods Vehicle parking provision with associated services and facilities to support driver wellbeing and legal requirements to rest.

5. Generic Impacts

Overview

5.1 Some impacts will be relevant to any infrastructure development on national networks, whatever the type. The following sections set out how these impacts should be considered. While this National Policy Statement (NPS) covers developments in England only, assessments of impacts should take account of any impacts this type of infrastructure may have in the devolved administrations. Where projects affect cross-border links, scheme promoters should work with the devolved administrations. The government's planning guidance, which is referred to in this chapter, is likely to be a useful source of guidance on impacts.

5.2 Sufficient relevant information is crucial to good decision-taking, particularly where formal assessments are required (such as Environmental Impact Assessment, Habitats Regulation Assessment and Flood Risk Assessment). To avoid delay, applicants should discuss what information is needed with statutory environmental bodies as early as possible.

5.3 Applicants should engage with relevant and statutory bodies regarding their proposal at the pre-application stage.

5.4 Note for the purposes of this NPS, Environmental Impact Assessment is hereafter referred to as

environmental assessment. If replaced with a new framework, relevant plans and projects would have to comply with such regulations, including such environmental assessment as is required by them.

5.5 The Environment Act requires that at least one target in each of four priority areas is set in: air, water, biodiversity, and resource efficiency and waste reduction. It also requires targets to be set for fine particulate matter (PM2.5) and species abundance. The Secretary of State must consider duties under the Environment Act 2021 in relation to environmental targets and have regard to the policies set out in the Government's Environment Improvement Plan for improving the natural environment.

5.6 Applicants should look for opportunities to take a holistic approach to avoiding, reducing or mitigating multiple impacts on the natural or built environment, on landscapes and on people by using nature-based solutions. Nature-based solutions can deliver multiple benefits for climate, biodiversity, and people, and can therefore play a critical role in tackling these interrelated impacts in an integrated way. Carefully designed and implemented nature-based solutions are beneficial because they may be able to deliver a range of benefits to society beyond their primary purpose. For example, trees planted to sequester carbon could offer benefits for flood management, soil stability, biodiversity and recreation. A Green Infrastructure approach can be used to plan multifunctional networks of natural features to integrate the various benefits and solutions (see

paragraphs 5.171 to 5.195). Well-designed nature-based solutions could also contribute to achieving biodiversity net gain requirements.

Air quality and Emissions

Introduction

5.7 Infrastructure development can have adverse effects on air quality. The construction and operation phases of projects on the national networks can involve emissions to air which could lead to adverse impacts on health, on protected species and habitats, or on the wider countryside and species (though they can also have future beneficial effects on air quality, for example through reduced congestion.

5.8 Air emissions include Particulate Matter, for example, dust, considered in the following size fractions: up to a diameter of ten microns (Particular Matter 10) and up to a diameter of 2.5 microns (Particulate Matter 2.5) as well as gases such as Nitrogen Oxide, sulphur dioxide and ammonia . The maximum permissible levels for pollutants in ambient air are set out in the Air Quality Standards Regulations 2010 and reiterated in the Air Quality Strategy. The government has legally binding targets to reduce emissions of five key air pollutants (Particulate Matter 2.5, Nitrogen Dioxide, Sulphur Dioxide, ammonia and non-methane volatile organic compounds) by 2030[88]. As well as having direct effects on public health, habitats and biodiversity, these pollutants

can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems.

5.9 The Secretary of State for Environment, Food and Rural Affairs is required to make available up to date information on air quality to any relevant interested party[89].

5.10 The geographical extent and distribution of these effects can cover a large area, well beyond an individual scheme. Air quality impacts are generated by all types of infrastructure development to varying extents. Development on the national networks in general and road schemes in particular, creates complex challenges for air quality, given the very wide geographical area over which impacts (positive and negative) can potentially be felt. The guidance below provides additional clarity (when compared to other NPS guidance) given the complex nature of impacts created by national network development.

Applicant's assessment

5.11 Where a project is likely to have adverse effects on air quality and/or where a project could lead to a deterioration in air quality in an area or lead to a new area where air quality breaches any national air quality limits or statutory air quality objectives[90], the applicant should undertake an assessment as part of their Development Consent Order application.

5.12 The assessment should describe:

- any air pollutant emissions, that would lead to a deterioration in air quality and their mitigation, distinguishing between the project stages, including construction and operation and taking account of emissions such as from any road traffic generated by the project
- the predicted absolute emission levels of the proposed project after mitigation methods have been applied
- existing air quality levels, how they are monitored and the relative change in air quality from existing levels
- any potential impacts on nearby protected habitats from air pollutant emissions

5.13 Defra publishes future projections of UK air pollutant emissions based on evidence of future emissions, traffic and vehicle fleet. Projections are updated as the evidence base changes. The applicant's assessment should be consistent with this but may include more detailed modelling to demonstrate local impacts. If the latest future projections do not reflect the latest available evidence base at the assessment stage, applicants should still provide an assessment using the latest future projections published by Defra. If an applicant believes they have robust additional supporting evidence that is likely to change the projected emissions, they should include this in their representations to the Examining Authority.

Mitigation

5.14 Mitigation measures may affect the project design, layout, construction, operation and/or may consist of 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 local receptors in the existing route, physical means including barriers to trap or better disperse emissions, and/or speed control. Applicants should routinely look for opportunities within the design of the proposed development to embed nature-based solutions, such as urban woodlands and trees to assist with pollutant reduction and dispersal along major transport corridors. In addition to avoiding further greenhouse gas emissions when compared with some more traditional approaches, nature-based solutions can also result in biodiversity benefits as well as increasing absorption of carbon dioxide from the atmosphere (see also paragraphs 5.171 to 5.195 on the role of green infrastructure).

5.15 The Secretary of State should consider whether mitigation measures are needed both for operational and construction emissions over and above any which may form part of the project application. In doing so the Secretary of State should have regard to the Air Quality Strategy or any successor to it and should consider relevant advice within Local Air Quality Management guidance.

5.16 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.

Decision-making

5.17 Many activities involving air emissions are subject to pollution control. The considerations set out in paragraphs 4.42 to 4.50 on the interface between planning and pollution control therefore apply.

5.18 The Secretary of State should give air quality considerations substantial weight where a project would lead to a deterioration in air quality in an area or leads to a new area where air quality breaches any national air quality limits or statutory air quality objectives. However, air quality considerations will also be important where substantial changes in air quality levels are expected, even if this does not lead to any breaches of national air quality limits or statutory air quality objectives.

5.19 In all cases the Secretary of State must take account of any relevant statutory air quality limits or statutory air quality objectives. The Secretary of State should be content that the applicant has taken all reasonable steps to reduce emissions in the construction and operational stage of the development.

5.20 Where a project is likely to lead to a breach of such limits or objectives, the applicant should work with the relevant authorities to secure appropriate mitigation measures to avoid any breach and allow the proposal

to proceed. Where a project is located within, or in close proximity to, a Local Air Quality Management Area or Clean Air Zone, applicants should engage with the relevant local authority to ensure the project is compatible with the local Air Quality Plan.

5.21 Any increase at all in air pollutant emissions is not a reason in itself to refuse development consent, though any deterioration in air quality should be given appropriate weight in coming to the decision.

5.22 Where the increase in air pollutant emissions resulting from the proposed scheme would significantly impact the government's ability to comply with a statutory limit or statutory air quality objective, the Secretary of State should refuse consent.

5.23 The Secretary of State should refuse consent where, after taking into account mitigation, the air pollutant emissions resulting from the proposed scheme will either:

- result in a zone/agglomeration which is currently reported as being compliant with the Air Quality Standards Regulations 2010 becoming non-compliant
- affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the Examining Authority at the examination.

5.24 The Secretary of State should give positive weight to projects that embed nature-based solutions to assist

with pollutant reduction and dispersal along major transport corridors.

Greenhouse Gas emissions

Introduction

5.25 As referenced in chapter 2, carbon budgets are set to ensure the UK keeps to a trajectory consistent with meeting its 2050 net zero emissions target. Section 4 of the Climate Change Act 2008 describes the duty of the Secretary of State for Business, Energy and Industrial Strategy, which is to ensure that the net UK carbon account for a budgetary period does not exceed the carbon budget.

5.26 The construction and operation of national network infrastructure will in itself lead to greenhouse gas emissions.

5.27 In considering this section, applicants should also have regard to chapters 2 and 3 of this NPS, which explains the current policy on climate change and how this NPS interacts with that policy, and chapter 4 of this NPS, which deals with climate change adaptation.

5.28 As discussed in chapters 2 and 3, national network infrastructure plays an important role in supporting decarbonisation. While all steps should be taken to reduce and mitigate climate change impacts, there will likely be residual emissions from national networks

infrastructure, particularly during the economy wide transition to net zero, and potentially beyond.

Applicant's assessment

5.29 A whole life carbon assessment should be used to measure greenhouse gas emissions at every stage of the proposed development to ensure that emissions are minimised as far as possible as we transition to net zero. This includes the construction, maintenance, operation and use of the asset across its entire lifecycle. This is critical at early stages of project planning, for example, the conception stage, because the ability to reduce whole life carbon emissions is increasingly more limited as the project passes through detailed design and enters construction.

5.30 All proposals for national network infrastructure projects should include a whole life carbon assessment at critical stages in the project lifecycle, for example the submission of a major business case. This should be conducted according to the guidance, standards and methodologies set out in Transport Appraisal Guidance Unit A3. Also refer to the Environmental Assessment at paragraphs 4.10 to 4.11 for more information about cumulative assessment.

5.31 Having regard to current knowledge, a carbon management plan should be produced as part of the Development Consent Order submission and include:

- an explanation of the steps that have been taken to drive down the climate change impacts at each of those stages
- how operational emissions and, where applicable, emissions from maintenance activities, have been reduced as much as possible through the application of best available technology for that type of technology (recognising that in the case of road projects while the developer can estimate the likely emissions from road traffic, it is not solely responsible for controlling them)
- whether and how any residual carbon emissions will be (voluntarily) offset or removed using a recognised framework
- where there are residual emissions, the level of emissions and the impact of those on national and international efforts to limit climate change, both alone and where relevant in combination with other developments at a regional or national level, or sector level, if statutory sectoral targets are developed and come into force

Mitigation

5.32 Applicants should look for opportunities within the design of the proposed development to embed nature-based or technological solutions to mitigate, capture or offset the emissions of construction.

5.33 Steps taken to minimise, capture and offset emissions in design and construction, should be set

out in a Greenhouse Gas Reduction Strategy, secured under the Development Consent Order. This Strategy could include, for example, mitigation through woodland creation on or adjacent to the site and registered with the Woodland Carbon Code[91], contributing significantly to offsetting residual emissions. Applicants may wish to refer to the Institute of Environmental Management and Assessment Greenhouse Gas Management Hierarchy guidance when drafting their Greenhouse Gas Reduction Strategy[92].

Decision making

5.34 The Secretary of State must be satisfied that the applicant has as far as possible assessed the greenhouse gas emissions at all stages of the development.

5.35 S.1(1) of the Climate Change Act 2008 reflects and puts into effect the UK's Nationally Determined Contributions as set out in the Paris Agreement and sets out that the carbon budgets are the mechanism by which the net zero target is to be achieved. Consequently, it can reasonably be concluded that an applicant who assesses the carbon impacts of its scheme against the carbon budget is to be taken also to have assessed the carbon impacts of the scheme against the net zero target in the Climate Change Act 2008 and the UK's Nationally Determined Contributions, where the carbon budget is consistent with the Climate Change Act 2008 carbon target and the Nationally Determined Contributions.

5.36 The Secretary of State should be content that the applicant has taken all reasonable steps to reduce the total greenhouse gas emissions from a whole life carbon perspective. The Secretary of State should also give positive weight to projects that embed nature-based or technological processes to mitigate or offset the emissions of construction and within the proposed development. However, given the important role national network infrastructure plays in supporting the process of economy wide decarbonisation, the Secretary of State accepts that there are likely to be some residual emissions from construction of national network infrastructure.

5.37 Operational greenhouse gas emissions from some types of national network infrastructure cannot be totally avoided. Given the range of non-planning policies aimed at decarbonising the transport system, government has determined that a net increase in operational greenhouse gas emissions is not, of itself, reason to prohibit the consenting of national network projects or to impose more restrictions on them in the planning policy framework. Any carbon assessment will include an assessment of operational greenhouse gas emissions, but the policies set out in chapter 2 of the NPS, apply to these emissions. Operational emissions will be addressed in a managed, economy-wide manner, to ensure consistency with carbon budgets, net zero and our international climate commitments. Therefore, approval of schemes with residual carbon emissions is

allowable and can be consistent with meeting carbon budgets, net zero and the UK's Nationally Determined Contribution.

Biodiversity and nature conservation

Introduction

5.38 Biodiversity is the variety of life in all its forms and encompasses all species of plants and animals, the genetic diversity they contain and the complex ecosystems of which they are a part. Geological conservation relates to the sites that are designated for their geology and/or their geomorphological importance. The policy set out in the following sections recognises the need to protect and enhance biodiversity and geological conservation interests.

5.39 Government policy and priorities for the natural environment are set out in the government's Environmental Improvement Plan[93]. The publication and regular updating of the Environmental Improvement Plan is required by the Environment Act 2021, alongside legally binding long-term environmental targets, an enhanced biodiversity duty for public authorities, biodiversity net gain and Local Nature Recovery Strategies.

5.40 The wide range of international and national legislative provisions impacting planning decisions

affecting biodiversity and nature conservation issues are set out in the National Planning Policy Framework. The Natural Environment Planning Practice Guidance document sets out good practice in England in relation to planning for biodiversity and geological conservation.

Applicant's assessment

5.41 The applicant should consider the full range of potential impacts on ecosystems (including habitats and protected species) and provide environmental information proportionate to the likely impacts of the infrastructure on biodiversity and nature.

5.42 The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests as well as consider how their proposal will deliver Biodiversity net- gain in line with the requirements in a Biodiversity Gain Statement, as set out in paragraphs 4.20 to 4.23 above.

Mitigation

5.43 To avoid harm or disturbance in line with the mitigation hierarchy the applicant should demonstrate that:

- developments are designed to avoid the risk of harm and to minimise the footprint of the development and/ or to retain the site's important habitat features

- developments are designed and landscaped to provide green corridors and minimise habitat fragmentation (for example using underpasses or green bridges to link habitats)
- during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works
- during construction and operation, best practice will be followed to ensure that risk of disturbance or damage to species or habitats follows the mitigation hierarchy (including as a consequence of transport access arrangements). For example, plan for construction work to be carried out at specific times to avoid sensitive times and location, such as the breeding season for wild birds and lifecycles of migratory fish.

5.44 If avoidance or reduction of harm is not possible, applicants should include appropriate mitigation measures, in line with the mitigation hierarchy, as an integral part of their proposed development, including identifying where and how these will be secured in the long term.

5.45 If avoidance or bespoke mitigation measures are insufficient or not possible, as a last resort, appropriate compensation measures should be sought and implemented. For example, moving protected species out of the development site and where practicable, restore habitats after construction works have finished.

5.46 The applicant should not just look to mitigate direct harms but should show how the project has taken advantage of opportunities to conserve and enhance biodiversity, having regard to any relevant Local Nature Recovery Strategy. Opportunities will be taken to enhance or expand existing habitats and create new habitats in accordance with biodiversity net gain requirements. Habitat creation, enhancement and management proposals should include measures for climate resilience, including appropriate species selection. Maintaining habitat connectivity is important for climate resilience and the biodiversity of ecological networks.

5.47 Wider ecosystem services and benefits of natural capital should also be considered when designing enhancement measures in order to maximise multi-functional benefits whilst minimising land take. For example, this can be achieved through integration of Biodiversity net gain features within a sustainable drainage system; the use of green roofs and walls to harvest rainwater and ameliorate urban heating; or the restoration of rivers to reduce flood risk and provide attractive amenity areas.

5.48 The Secretary of State should consider what appropriate requirements should be attached to any consent and/or in any planning obligations entered into to ensure that any necessary mitigation and compensatory measures are secured, delivered, and if necessary enforced, and that biodiversity improvements

are registered in accordance with Biodiversity net gain requirements.

5.49 The Secretary of State will need to take account of the advice provided to the applicant by Natural England and/or the Marine Management Organisation, as regards any necessary mitigation measures and whether Natural England and/or or the Marine Management Organisation has granted or refused, or intends to grant or refuse, any relevant licences, including protected species mitigation licences. In advance of the formal submission, applicants are encouraged to use Natural England's Letter of No Impediment Approach and engage with Natural England[94].

Decision making

5.50 The government's 25 Year Environment Plan marked a step change in ambition for wildlife and the natural environment. The Secretary of State should have regard to the aims and goals of the government's Environmental Improvement Plan, the United Nations Environmental Programme Convention on Biological Diversity of 1992 and any relevant measures and targets, such as the Environment Act 2021 targets. In doing so, the Secretary of State should also take account of the context of the challenge of climate change: failure to address this challenge will result in significant adverse impacts to biodiversity. The benefits of nationally significant low carbon transport infrastructure development may include benefits for biodiversity and

geological conservation interests and these benefits may outweigh harm to these interests. However, the mitigation hierarchy will still need to be applied.

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

5.52 In taking decisions, the Secretary of State should ensure that appropriate weight is attached to: designated sites of international, national, and local importance; irreplaceable habitats[i]; protected species habitats; other species of principal importance for the conservation of biodiversity; local nature recovery strategies; and to

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i Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.

biodiversity and geological interests within the wider environment.

Internationally important nature sites

5.53 The most important sites for biodiversity in the UK are those identified and designated to meet the obligations of international biodiversity conventions, and which are afforded special protection by the Habitats Regulations. These sites are designated as Special Areas of Conservation and Special Protection Areas and are collectively known as Habitats Sites. The following should be given the same protection as sites legally protected by the Habitats Regulations: potential Special Protection Areas and possible Special Areas of Conservation, listed or proposed Wetlands of International Importance (Ramsar sites); and sites identified, or required, as compensatory measures for adverse effects on habitats sites.

5.54 The Habitats Regulations set out a specific process (see paragraphs 4.12 to 4.16) to assess the likely implications for these sites from a proposed plan or project. To maintain the overall coherence of the National Site Network, such plans or projects may only proceed if the assessment concludes they will not adversely affect the integrity of the site or, in the case of a negative assessment, if there are no alternative solutions, and they must proceed for imperative reasons of overriding public interest with the necessary compensatory measures secured.

Nationally important nature sites: Sites of Special Scientific Interest

5.55 Many Sites of Special Scientific Interest are also designated as sites of international importance and will be protected accordingly. Those that are not, or those features of Sites of Special Scientific Interest not covered by an international designation, are given a high degree of protection by the Wildlife and Countryside Act 1981. Most of the land that has been declared by Natural England as National Nature Reserves are also notified as Sites of Special Scientific Interest.

5.56 Where a proposed development on land within or outside a Site of Special Scientific Interest is likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments), development consent should not normally be granted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest. The Secretary of State is bound by the duty placed on all public bodies in section 28G of the Wildlife and Countryside Act 1981 to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of the features by reason of which a site is of special scientific interest.

Irreplaceable habitats including ancient woodland, and ancient and veteran trees

5.57 Ancient woodland[j], ancient wood pastures and parkland, and ancient and veteran trees[k] are irreplaceable habitats. Their long-standing presence, species and form serve as a rich cultural record of past management practices. Ancient and veteran trees are a valuable biodiversity resource for diversity of species and unique ecological conditions, once lost they cannot be recreated. Many ancient woodlands provide ecosystem services, for example, water and soil health, carbon storage, flood alleviation and pollution mitigation as well as providing public access, allowing people to make important contact with nature that helps to promote interest in the protection of these habitats, while delivering many health and wellbeing benefits. Keepers of Time, the government's policy for ancient and native trees and woodlands in England sets out the government's commitment to maintain and enhance the

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j An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).

k A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.

existing area of ancient woodland, maintain and enhance the existing resource of known ancient and veteran trees, excluding natural losses from disease and death, and to increase the percentage of ancient woodland in active management.

5.58 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 ancient or veteran trees unless there are wholly exceptional reasons (for example, where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

Nationally important nature sites: Marine Conservation Zones

5.59 Marine Conservation Zones, introduced under the Marine and Coastal Access Act 2009, have been designated for the purpose of conserving marine flora or fauna, marine habitat or types of marine habitat or features of geological or geomorphological interest. The protected feature or features and the conservation objectives for the Marine Conservation Zones are stated in the designation order for the Marine Conservation Zones, which provides statutory protection for these areas. Measures to restrict damaging activities will be implemented by the Marine Management Organisation and other relevant organisations. As a public authority, the Secretary of State is bound by the duties in relation to

Marine Conservation Zones imposed by sections 125 and 126 of the Marine and Coastal Access Act 2009.

Locally important nature Sites

5.60 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, are areas of substantive nature conservation value and make an important contribution to ecological networks and nature's recovery. They can also provide wider benefits including 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 any such harm to the detriment of biodiversity features of regional or local importance which it considers may result from a proposed development. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent, nevertheless the mitigation hierarchy applies to these sites.

Biodiversity within and around developments

5.61 Development proposals provide many opportunities for incorporating beneficial biodiversity or geological features as part of good design[95]. Nature contributes to the quality of a place, to people's quality of life, the attractiveness of active travel routes and movements, and it is a critical component of well-designed development. Road and rail projects can also play a part

in meeting government tree planting and nature recovery targets through partnership working with adjoining landowners, delivering biodiversity, carbon offsetting and social benefits.

5.62 Consideration should be given to the impacts on, and improvement to, habitats and species in, around and beyond developments, for wider ecosystem services and natural capital benefits, relevant to the local area and communities. The value of linear infrastructure and its footprint in supporting biodiversity and connecting habitats ecosystems should also be taken into account. Local Nature Recovery Strategies will identify opportunities to create or enhance habitat likely to have greatest benefit to biodiversity and wider environmental improvement. Consideration should also be given to national priorities and targets, such as reduced flood risk, improved air or water quality, and increased access to natural greenspace, or tree planting, woodland creation and protecting long established woodlands.

5.63 When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities and enhancement of wider biodiversity, 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, and ongoing management and maintenance secured.

Habitats and Species of Principal Importance

5.64 Many individual wildlife species receive statutory protection under a range of legislative provisions[l]. Some species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales[m] and therefore requiring conservation action. As a public authority, the Secretary of State is bound by the duty in by section 40 of the Natural Environment and Rural Communities Act 2006 (as amended by section 102 of the Environment Act 2021) to periodically consider what action the authority can take, consistent with the exercise of its functions, to further the conservation and enhancement of biodiversity. In doing so the Secretary of State may consider the impact on species or habitats listed under Section 41 of the Act. The

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l Certain plant and animal species, including all wild birds, are protected under the Wildlife and Countryside Act 1981. European plant and animal species are protected under the Conservation of Habitats and Species Regulations 2010 (as amended). Some other animals are protected under their own legislation, for example Protection of Badgers Act 1992.

m Lists of habitats and species of principal importance for the conservation of biological diversity in England published in response to Section 41 of the Natural Environment and Rural Communities Act 2006 are available from the Biodiversity Action Reporting System website.

Secretary of State should ensure that applicants have taken measures to ensure these species and habitats are protected from the adverse effects of development by using requirements, planning obligations, or licence conditions. 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.

Resource and Waste management

Introduction

5.65 Government policy on resource and waste management is intended to protect human health and the environment by preventing or reducing the use of resources and favouring the practical application of the waste hierarchy[96] by maximising its reuse as a resource and recycling wherever possible. Improving the efficiency of such use is crucial for the transition to a circular economy.

Applicant's assessment

5.66 The applicant should demonstrate that they will adhere to the waste hierarchy, minimising the volume of waste produced and maximising reuse and recycling for waste that cannot be avoided. Where possible, applicants are encouraged to use low carbon materials, sustainable sources, and local suppliers. Consideration should be given to circular economy principles wherever

practicable, for example by using longer lasting materials efficiently, optimising the use of secondary materials and how the development will be maintained and decommissioned. Applicants should consider and take into account emerging government policy, including the Waste Prevention Programme for England and Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, which provides practical guidance on how to improve appropriate soil reuse on construction sites and reducing the volume that is sent to landfill.

Mitigation

5.67 Sustainable waste management is implemented through the waste hierarchy:

- prevention
- preparing for reuse
- recycling
- other recovery, including energy recovery
- disposal

5.68 Waste management beyond the waste hierarchy is also encouraged, such as adopting a circular approach from the offset, for example, sustainable procurement exercises.

5.69 Large infrastructure projects may generate hazardous and non-hazardous waste during construction

and operation. The Environmental Permitting regime, regulated by the Environment Agency in England, incorporates operational waste management requirements for certain activities. Applicants should therefore give consideration to the Environmental Permitting regime and whether this applies to their development.

5.70 Infrastructure projects should look to use legal and sustainable timber[97] and other Modern Methods of Construction where possible.

Decision-making

5.71 The Secretary of State should consider the extent to which the applicant has proposed an effective process that will be followed to ensure safe and effective management of waste arising from the construction and operation of the proposed development. It is advised that this is detailed in the dedicated plans summarising the sustainable use of resources and waste for both construction and operation as part of the application documentation. The Secretary of State should be satisfied that the process sets out:

- how waste will be managed, both on-site and off-site
- that consideration has been given to available waste management infrastructure capacity to manage wastes arising from the development

- adequate steps have been taken to minimise the volume of waste arising and maximise opportunities for reuse and recycling

5.72 Where the project will be subject to the Environmental Permitting regime, waste management arrangements during operations will be covered by the permit and the considerations set out in paragraphs 4.42 to 4.50 will apply.

5.73 Where possible, projects should include the reuse of materials and use of sustainable materials such as timber, or recycled materials.

Civil and military aviation and defence interests

Introduction

5.74 Civil and military aerodromes, aviation technical sites, and other types of defence interests (both onshore and offshore) can be affected by new national networks infrastructure development.

Aviation

5.75 UK airspace is important for both civilian and military aviation interests. It is essential that the safety of UK aerodromes, aircraft and airspace is not adversely affected by new national networks infrastructure. Similarly, aerodromes can have important economic and social benefits, particularly at the regional and local level. Commercial civil aviation is largely confined to designated

corridors of controlled airspace and set approaches to airports. However, civilian leisure and military aircraft may often fly outside of ‘controlled air space’. The approaches and flight patterns to aerodromes are not necessarily routine and can be irregular owing to a variety of factors including the performance characteristics of the aircraft concerned and the prevailing meteorological conditions.

5.76 Certain civil aerodromes, and aviation technical sites, selected on the basis of their importance to the national air transport system, are officially safeguarded in order to ensure that their operation is not inhibited by new development. Areas of airspace around aerodromes used by aircraft taking off or on approach and landing are described as “obstacle limitation surfaces” and defined according to criteria set out in relevant Civil Aviation Authority guidance[98]. Aerodromes that are officially safeguarded will have Civil Aviation Authority certified safeguarding maps showing the obstacle limitation surfaces. A similar official safeguarding system applies to certain military aerodromes and defence assets, selected on the basis of their strategic importance.

5.77 The certified safeguarding maps depicting the obstacle limitation surfaces and other criteria (e.g., to minimise “bird strike” hazards) are deposited with the relevant local planning authorities. Circular 1/2003 provides advice to planning authorities on the official safeguarding of aerodromes and includes a list of the aerodromes which are officially safeguarded. The Circular and Civil Aviation Authority guidance also recommends

that the operators of aerodromes which are not officially safeguarded should take steps to protect their aerodrome from the effects of possible adverse development by establishing an agreed consultation procedure between themselves and the local planning authority or authorities.

5.78 There are also “Public Safety Zones” at the end of runways of the busiest airports in the UK, within which development is restricted to minimise risks to people on the ground in the event of an aircraft accident on take-off or landing. Advice is provided on Public Safety Zones in Circular 01/2002.

5.79 The military Low Flying system covers the whole of the UK and enables low flying activities as low as 75m (mean separation distance). A considerable amount of military flying for training purposes is conducted at as low as 30m in designated Tactical Training Areas in mid Wales, Cumbria, the Scottish Border region and in the Electronic Warfare Range in the Scottish Border area. New national networks infrastructure may cause obstructions in Ministry of Defence low flying areas.

5.80 Safe and efficient operations within UK airspace is dependent upon communications, navigation and surveillance infrastructure, including radar (often referred to as ‘technical sites’). National Networks infrastructure development may interfere with the operation of radar by limiting the capacity to handle air traffic, and aircraft landing systems. It may also act as a reflector or diffractor of radio signals on which navigational aids rely (an effect

which is particularly likely to arise when large structures are located close to radar installations).

Other defence interests

5.81 The Ministry of Defence operates military training areas, military danger zones (offshore Danger and Exercise areas), military explosives storage areas and Tactical Training Areas. There are extensive Danger and Exercise Areas across the UK Continental Shelf Area for military firing that are essential for national defence.

5.82 Other operational defence assets may be affected by new development, e.g., the maritime acoustic facilities used to test and calibrate noise emissions from naval vessels, such as at Portland Harbour. The Ministry of Defence also operates Air Defence radars which have wide coverage over the UK (onshore and offshore). It is important that new national networks infrastructure does not significantly impede or compromise the safe and effective use of any defence assets.

Applicant's assessment

5.83 Where the proposed development may have an effect on civil or military aviation and/or other defence assets, an assessment of potential effects should be carried out.

5.84 The applicant should consult the Ministry of Defence, Circular and Civil Aviation Authority, National Air Traffic Services 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.

5.85 Any assessment on aviation or other defence interests should include potential impacts during construction and operation of the project upon the operation of communications, navigation and surveillance infrastructure, flight patterns (both civil and military), other defence assets and aerodrome operational procedures.

5.86 If any relevant changes are made to proposals for an NSIP during the pre-application 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 consultees are informed as soon as reasonably possible.

Mitigation

5.87 Where a proposed national networks infrastructure project would significantly impede or compromise the safe and effective use of civil or military aviation or defence assets and/or significantly limit military training, the Secretary of State may consider the use of 'Grampian conditions'[n] or other forms of requirement which relate to the use of future technological solutions to mitigate impacts. Where technological solutions have not yet been developed or proven, the Secretary of State will

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n A negative condition that prevents the start of a development until specific actions, mitigation or other development have been completed.

need to consider the likelihood of a solution becoming available within the time limit for implementation of the development consent.

5.88 Mitigation for infringement of obstacle limitation surfaces may include:

- amendments to layout or scale of infrastructure to reduce the height, provided that it does not result in an unreasonable reduction of capacity or unreasonable constraints on the operation of the proposed national networks infrastructure
- changes to operational procedures of the aerodromes in accordance with relevant guidance, provided that safety assurances can be provided by the operator that are acceptable to the Civil Aviation Authority where the changes are proposed to a civilian aerodrome (and provided that it does not result in an unreasonable reduction of capacity or unreasonable constraints on the operation of the aerodrome)
- upgrading of installation of obstacle lighting and/or by notification in Aeronautical Information Service publications

5.89 For communications, navigation and surveillance infrastructure, the UK military Low Flying system (including Tactical Training Areas) and designated air traffic routes mitigation may include:

- lighting

- upgrading of existing communications, navigation and surveillance infrastructure, the cost of which the applicant may reasonably be required to contribute in part or in full

5.90 Mitigation for effects on radar and navigational systems may include reducing the scale of a project, although in some cases it is likely to be unreasonable to require mitigation by way of a reduction in the scale of development, for example where this would result in a material reduction in capacity or where operations would be severely constrained. However, there may be exceptional circumstances where a small reduction in capacity or other small change to a project will result in proportionately greater mitigation. In these cases, the Secretary of State may consider that the benefits of the mitigation outweigh the marginal loss, for example, of capacity.

Decision-making

5.91 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.

5.92 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 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.

5.93 There are statutory requirements concerning lighting to tall structures[99]. Where lighting is requested on structures that go beyond statutory requirements by any of the relevant aviation and defence consultees, the Secretary of State should be satisfied of the necessity of such lighting, taking into account the case put forward by the consultees. The effect of such lighting on the landscape, local residents and ecology may be a relevant consideration, depending on the particular circumstances.

5.94 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 either:

- 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
- the development would significantly impede or compromise the safe and effective use of defence assets or significantly limit military training

Coastal change and marine impacts

Introduction

5.95 Where infrastructure projects are proposed on the coast, coastal change is a key consideration. This section is concerned both with the impacts which national networks infrastructure can have as a driver of coastal change and with how to ensure that developments are resilient to ongoing and potential future coastal change. The aim of the government's planning policy is to reduce risk from coastal change by avoiding inappropriate development in vulnerable areas or adding to the impacts of physical changes to the coast.

5.96 The construction of national networks infrastructure on the coast may involve, for example, dredging, dredge spoil deposition, marine landing facility construction, and flood and coastal protection measures which could result

in direct effects on the coastline, seabed, marine ecology and biodiversity, and the historic environment.

5.97 Additionally, indirect changes to the coastline and seabed might arise as a result of a hydrodynamic response to some of these direct changes. This could lead to localised or more widespread coastal erosion or accretion and changes to offshore features such as submerged banks and ridges, marine biodiversity, and the historic environment.

5.98 This section only applies to national networks infrastructure projects situated on or near the coast. The sections on biodiversity and nature conservation, flood risk, the historic environment and climate change adaptation, including the increased risk of coastal erosion, are also relevant.

5.99 As detailed in paragraphs 170 to 173 of the National Planning Policy Framework, guidance should be followed for:

- The National Planning Policy Framework concept of integrated coastal zone management
- National Planning Policy Framework policy against the location of new, potentially vulnerable, infrastructure within existing coastal change management areas
- Strong assumption that land likely to be needed for future flood or coastal erosion risk management infrastructure will be safeguarded from development

that would in any way prevent or hinder its delivery or operation

- Development will not hinder the creation, use of, and maintenance of a continuous signed and managed route along the coast (as required by the Marine and Coastal Access Act 2009)

Applicant's assessment

5.100 Applications for development in a Coastal Change Management Area should make it clear why there is a need for it to be located in a Coastal Change Management Area[o]. For developments requested in a Coastal Change Management Area, applicants should undertake an assessment of the vulnerability of the proposed development to coastal change, taking account of climate change, during the project's operational life and consult with their Coast Protection Authority and Coast Erosion Risk Management Authority (usually their District Council) regarding the Shoreline Management Plan for that coastal policy unit and coastal change planning policy.

5.101 For any projects with any impacts (not just on coastal change) in marine waters as described in section

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o Coastal Change Management Areas are areas identified in Local Plans as likely to be affected by coastal change (physical change to the shoreline through erosion, coastal landslip, permanent inundation or coastal accretion).

42(2) of the Planning Act 2008, including dredging or disposal into the sea, the applicant should consider the relevant marine plan and also consult the Marine Management Organisation, and where appropriate, for cross-boundary impacts, Natural Resource Wales and NatureScot, at an early stage. The applicant should also consult the Marine Management Organisation on projects which could impact on coastal change, since the Marine Management Organisation may also be involved in considering other projects which may have related coastal impacts.

5.102 The applicant should examine the broader context of coastal protection around the proposed project, and the influence in both directions, i.e., coast on project, and project on coast[p].

5.103 The applicant should be particularly careful to identify any effects of physical changes on the integrity and special features of Marine Conservation Zones, candidate marine Special Areas of Conservation, coastal Special Areas of Conservation and candidate coastal Special Areas of Conservation, coastal Special Protection Areas and potential coastal Special Protection Areas, Ramsar sites, Sites of Community Importance and potential Sites of Community Importance and Sites of Special Scientific Interest. For any projects affecting the above marine protected areas, the applicant should

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p The relevant information will include Shoreline Management Plans.

consult Natural England and where appropriate, for cross-boundary impacts, Natural Resource Wales and Nature Scot, at an early stage.

Mitigation

5.104 Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast in consultation with the Marine Management Organisation, the Environment Agency, Natural England, Natural Resource Wales, Nature Scot, Local Planning Authorities, other statutory consultees, Coastal Partnerships, Coastal Protection Authorities and other coastal groups, as it considers appropriate. The Secretary of State should consider whether the mitigation requirements put forward by an applicant are acceptable and will be delivered and whether requirements should be attached to any grant of development consent in order to secure their delivery.

5.105 The Secretary of State should also ensure development granted consent in a Coastal Change Management Area is not at risk of being impacted by coastal change (including flooding and erosion) – if necessary, by limiting the planned lifetime of the proposed development and including restoration requirements where these are necessary to reduce the risk to people and the development.

5.106 In considering the impact on maintaining coastal recreation sites and features, the Secretary of State should expect applicants to have taken advantage of

opportunities to maintain and enhance access to the coast. In doing so, the Secretary of State should consider the implications for development of the creation of a continuous signed and managed route around the coast, as proposed in Part 9 of the Marine and Coastal Access Act 2009.

Decision-making

5.107 When assessing applications in a Coastal Change Management Area, the Secretary of State should not grant development consent unless it is demonstrated that the development:

- will be safe over its planned lifetime and will not have an unacceptable impact on coastal change
- will be consistent with the special character of the coast covered by designations, and recognise the importance of its conservation
- provides wider sustainability benefits
- does not hinder the creation and maintenance of a continuous signed and managed route around the coast.

5.108 Essential infrastructure may be granted by development consent in a Coastal Change Management Area, provided there are clear plans to manage the impacts of coastal change on it, and it will not have an adverse impact on rates of coastal change elsewhere.

5.109 The Marine and Coastal Access Act 2009 provides for the preparation of a Marine Policy Statement and marine plans. The Secretary of State must have regard to the Marine Policy Statement and applicable marine plans in taking any decision which relates to the exercise of any function capable of affecting any part of the UK marine area[100].

5.110 Consideration should be given to the risks of flooding and coastal erosion. The applicant must demonstrate that full account has been taken of the policy on assessment and mitigation in paragraphs 5.120 to 5.145 of this NPS, taking account of the potential effects of climate change on these risks and the relevant Shoreline Management Plan.

Dust, odour, artificial light, smoke, steam

Introduction

5.111 As well as noise and vibration (paragraph numbers 5.218 to 5.232) the construction and operation of national networks infrastructure has the potential to create a range of emissions such as odour, dust, steam, smoke and artificial light. All have the potential to have a detrimental impact on amenity or cause a common law nuisance or statutory nuisance under Part III, Environmental Protection Act 1990. Note that pollution impacts from some of these emissions (e.g., dust, smoke) are covered in the section on air emissions and

that these and others (e.g., odour) may also be covered by pollution control or other environmental consenting regimes so that paragraphs 5.7 to 5.24 and 4.42 to 4.50 will apply.

5.112 As a result 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.

5.113 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.

Applicant's assessment

5.114 The applicant should assess the potential for emissions of odour, dust, steam, smoke and artificial light to have a detrimental impact on amenity.

5.115 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, locations or species that may be affected by the emission
- effects of the emission on identified premises or locations
- measures to be employed in preventing or mitigating the emissions

5.116 The applicant is advised to consult the relevant local environmental health team and, where appropriate, the Environment Agency about the scope and methodology of the assessment.

Mitigation

5.117 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. This should be detailed within a Statement Relating to Statutory Nuisance.

Decision-making

5.118 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, landscapes and nature conservation, using directed light when necessary.

5.119 If development consent is granted for a project, the Secretary of State should consider whether there is a justification for all of the authorised project (including any associated development) being covered by a defence of statutory authority against nuisance claims. If the Secretary of State cannot conclude that this is justified, then the defence should be disapplied, in whole or in part, through a provision in the Development Consent Order.

Flood risk

Introduction

5.120 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 alongside changes in rainfall patterns. 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 4.30 to 4.41.

5.121 The National Planning Policy Framework (paragraphs 159 to 169) 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 at Annex 3 to the National Planning Policy Framework explains that essential transport infrastructure (including 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 Exception Test assesses the safety of a site, including whether the proposed development will be safe from flooding for its lifetime, including the impact of climate change.

Applicant's assessment

5.122 Applications for projects in the following flood zone locations should be accompanied by a Flood Risk Assessment:

- Applications in flood Zones 2 and 3, which represent a medium and high probability of river and sea flooding
- Applications in flood Zone 1 which represent a low probability of river and sea flooding. This includes

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

- Applications where there is less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)

5.123 The Flood Risk Assessment should identify and assess the risks of all forms of flooding and coastal erosion to and from the project and demonstrate how these flood risks will be managed, taking climate change into account.

5.124 In preparing a Flood Risk Assessment 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[q]

- take the impacts of climate change into account, clearly stating the development lifetime over which the assessment has been made[101]
- demonstrate how residual risks to and from reservoirs will be safely managed and/ or mitigated
- consider the vulnerability of those using the infrastructure including arrangements for safe access and escape
- 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 rationale for the Secretary of State on the application of the Sequential Test and Exception Test, as appropriate

5.125 Applicants for projects which may be affected by, or may add to, flood risk should seek sufficiently early pre-application discussions, before the official

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q Updated flood maps for rivers, the sea, surface water and reservoirs are available on the Environment Agency's website.

pre-application stage of the NSIP process with the Environment Agency, and, where relevant, other flood risk management bodies such as lead local flood authorities, Internal Drainage Boards, sewerage undertakers, and highways authorities. Such discussions can be used to identify the likelihood and possible extent and nature of the flood risk, to help scope the Flood Risk Assessment, 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 should 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, before the application for development consent is submitted.

5.126 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.

5.127 Proposals should prioritise the use of sustainable drainage systems unless there is clear evidence that this would be inappropriate. A drainage strategy should also

be produced and submitted as part of the Flood Risk Assessment.

The Sequential Test

5.128 Preference should be given to locating projects in areas of lowest flood risk. The Secretary of State should not consent development in flood risk areas (including flood zones 2 and 3 and locations at risk of flooding from local watercourses, surface water, groundwater or reservoirs) accounting for the predicted impacts of climate change unless they are satisfied that the sequential test requirements have been met. The Secretary of State should not consent development in Flood Zone 3 unless they are satisfied that the Sequential and Exception Test requirements have been met. All projects should apply the sequential approach to locating development within the site.

The Exception Test

5.129 If, following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the project to be located in zones of lower probability of flooding than Flood Zone 3a, the Exception Test can be applied. Flood Zone 3a applies when land has a 1 in 100 or greater annual probability of river flooding. The Exception Test provides a method of managing flood risk while still allowing necessary development to occur.

5.130 The Exception Test should only be applied once the Sequential Test has been satisfactorily applied.

5.131 Both elements of the test will have to be passed for development to be consented. For the Exception Test to be passed:

- it must be demonstrated that the project provides wider sustainability benefits to the community[r] that outweigh flood risk
- a Flood Risk Assessment must demonstrate that the project will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, will reduce flood risk overall

5.132 In addition, any project that is classified as 'essential infrastructure' and proposed to be located in Flood Zone 3a or b should be designed and constructed to remain operational and safe for users in times of flood; and any project in Flood Zone 3b should result in no net loss of floodplain storage and not impede water flows.

Mitigation

5.133 To satisfactorily manage flood risk and the impact of the natural water cycle on people, property and ecosystems, good design and 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

r These would include the benefits (including need) for the infrastructure set out in Chapter 2.

runoff, hold back peak flows and make landscapes more able to absorb the impact of severe weather events.

5.134 Site layout and surface water drainage systems should cope with events that exceed the design capacity of the system, so that excess water can be safely stored on or conveyed from the site without adverse impacts.

5.135 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.

5.136 If there are no viable Sustainable Drainage Systems options available, 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.

5.137 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 Sustainable Drainage Systems.

Decision-making

5.138 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 Flood Risk Assessment
- the Sequential Test has been satisfactorily applied as part of site selection and, if required, the Exception Test

5.139 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
- 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

5.140 The term Sustainable Drainage Systems is taken to cover the whole range of sustainable approaches to surface water drainage management including:

- source control measures including rainwater recycling and drainage
- use of Sustainable Drainage Systems Management Trains to improve water quality
- infiltration devices to allow water to soak into the ground, that can include individual soakaways and communal facilities
- filter strips and swales, which are vegetated features that hold and drain water downhill mimicking natural drainage patterns
- filter drains and porous pavements to allow rainwater and run-off to infiltrate into permeable material below ground and provide storage if needed
- basins and ponds to hold excess water after rain and allow controlled discharge that avoids flooding
- flood routes to carry and direct excess water through developments to minimise the impact of severe rainfall flooding

5.141 For construction work which has drainage implications[s], 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 Technical Standards published by Ministers[t]. In addition, the Development Consent Order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any Sustainable Drainage Systems, including any necessary access rights to property. Sustainable Drainage Systems should deliver multifunctional benefits and help to achieve Biodiversity net gain. The Secretary of State should be satisfied that the most appropriate body is being given the responsibility for maintaining any Sustainable Drainage Systems, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example,

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s As defined in paragraph 7(2) of Schedule 3 to the Flood and Water Management Act 2010. Certain organisations may be exempt from any National Standards under Schedule 3 to the Flood and Water Management Act 2010 and associated secondary instruments.

t The National Standards set out requirements for the design, construction, operation and maintenance of Sustainable Drainage Systems and may include guidance to which the Secretary of State should have regard.

the applicant, the landowner, the relevant local authority and the relevant Sustainable Drainage Systems Approval Body or another body such as the Internal Drainage Board. Where infiltration type Sustainable Drainage Systems are proposed, pre-applications with the Environment Agency are recommended to ensure they do not cause pollution to surface and groundwater quality and applicants should consider the role of Sustainable Drainage Systems management trains to control and treat run-off.

5.142 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.

5.143 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
- infrastructure is being provided to serve a flood risk area

- 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

5.144 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 while also offering opportunities to enhance biodiversity. It should be demonstrated that there is no increase in flood risk elsewhere. In such cases the Secretary of State should take account of any positive benefit to placing linear infrastructure in a flood-risk area.

5.145 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.

Land contamination and instability

Introduction

5.146 The effects of land instability may result in landslides, subsidence or ground heave. Failing to deal with this issue could cause harm to human health, local property and associated infrastructure, and the wider environment. They occur in different circumstances for different reasons and vary in their predictability and in their effect on development.

5.147 Land contamination from previous uses can harm human health, drinking water supplies, groundwater and surface water, soils, habitats and biodiversity. Failure to deal with this issue may result in the land being determined as contaminated land under Part IIA of the Environmental Protection Act 1990.

Applicant's assessment

5.148 Where necessary, land contamination and stability should be considered in respect of new development. Specifically, proposals should be appropriate for the location, including preventing unacceptable risks from land contamination or instability. If land stability could be an issue, applicants should seek appropriate technical and environmental expert advice from a competent person[102] 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, Environment Agency and Local Authority if necessary.

5.149 For developments on previously developed land, applicants should ensure and demonstrate that they have considered the risk posed by land contamination, through engagement in pre-application discussions, and how it is proposed to address these. A preliminary assessment for land and groundwater contamination to determine the rendition and mitigation is needed under Land Contamination Risk Management[103]. A preliminary assessment of land contamination and 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 the 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.

Mitigation

5.150 Applicants have a range of mechanisms available to mitigate and minimise risks of land instability. These include:

- Establishing the principle and layout of new development, for example avoiding mine entries and other hazards
- Ensuring proper design of structures to cope with any movement expected, and other hazards such as mine and/or ground gases
- Requiring ground improvement techniques, usually involving the removal of poor material and its replacement with suitable inert and stable material. For development on land previously affected by mining activity, this may mean prior extraction of any remaining mineral resource

5.151 Applicants should submit a coal mining risk assessment as part of their application in specific Development High Risk areas.

Landscape and visual impacts

Introduction

5.152 The landscape and visual effects of proposed projects will vary on a case-by-case basis according to the type of development, its location and the landscape setting of the proposed development. In this context, references to landscape should be taken as also covering all landscape including seascape and townscape, where appropriate.

Applicant's assessment

5.153 The applicant should carry out a landscape and visual impact assessment. A number of guides have been produced to assist in addressing landscape issues[104]. The landscape and visual assessment for the proposed project should include the impacts during construction and operation, and reference to any operational landscape character assessment and associated studies. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England. For seascapes, applicants should consult the Seascape Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them[105].

5.154 The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project, potential impacts on views (including protected views) and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity, and nature conservation. The assessment should also demonstrate how noise and light pollution from construction and operational activities on residential amenity and on sensitive locations, receptors, and views will be minimised.

5.155 Any statutory undertaker commissioning or undertaking works in relation to, or so as to affect land in England's National Parks and the Broads, or Area 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 policy paper titled English national parks and the broads: UK government vision and circular 2010 states that major development in or adjacent to the boundary of a National Park, Area of Outstanding Natural Beauty or the Broads can have a significant impact on the qualities for which they were designated. Government planning policy advises that major development should not take place within them apart from exceptional circumstances. For significant road widening or the building of new roads or railways in England's National Parks and the Broads or Area of Outstanding Natural Beauty, applicants also

need to fulfil the requirements set out in circular 2010 or successor documents. Management Plans should also be considered for National Parks and Area of Outstanding Natural Beauty, especially on identified special qualities of the area and any proposals for enhancement.

Mitigation

5.156 The scale of a project should be minimised to avoid or mitigate the visual and landscape effects, during construction and operation, so far as is possible while maintaining the operational requirements of the scheme. In exceptional circumstances a reduction in operational requirements might be warranted, and the Secretary of State may decide that the benefits to reduce the landscape effects outweigh the marginal loss of scale or function.

5.157 Projects need to be designed carefully, taking account of the potential impact on the landscape.

5.158 Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure, design (including choice of materials), and topographical interventions (for example, creation of bunds or lowering of ground level). Also, landscaping schemes (including screening options and design elements that soften the built form such as green or brown roofs, or living walls), depending on the size and type of the proposed project. Materials and designs for infrastructure should always be given careful consideration in terms of environmental standards.

5.159 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.

5.160 Applicants should consider how landscapes can be enhanced using landscape management plans, as this will help to enhance environmental assets where they contribute to landscape and townscape quality, and can reinforce or enhance landscape features and character.

Decision-making

Landscape impact

5.161 Landscape effects of the project depend on the existing character of the local landscape, its capacity to accommodate change and nature of the effect likely to occur. All of these factors need to be considered in judging the impact of a project on landscape. Projects need to have regard to siting, orientation, height operational and other relevant constraints. The aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation and opportunities for enhancement where possible and appropriate.

Development proposed within nationally designated landscapes

5.162 England's National Parks, the Broads and Areas of Outstanding Natural Beauty have been confirmed by the government as having 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 should have regard to in their decisions[u]. The conservation and enhancement of the natural beauty of the landscape and countryside should be given great weight by the Secretary of State in deciding on applications for development consent in these areas.

5.163 The Secretary of State should refuse development consent in these areas unless there are exceptional circumstances, where the benefits outweigh the harm and where it can be demonstrated that it is in the public interest. Consideration of such applications should include an assessment of:

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u For an explanation of the duties which will apply to the Secretary of State, see 'Duties on relevant authorities to have regard to the purposes of National Parks, AONBs and the Norfolk and Suffolk Broads' at https://landscapesforlife.org.uk/application/files/2015/8928/8605/Duty_of_Regard_Guide_Defra_2005.pdf

- the need for the development, including any national considerations[v], 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, taking account of the policy on alternatives set out in paragraphs 4.17 to 4.19
- any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated

5.164 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 exceptional circumstances for the new or enhanced capacity and with any benefits very significantly outweighing the harm. Planning of the Strategic Road Network should encourage routes that avoid impacts to National Parks, the Broads and Areas of Outstanding Natural Beauty.

5.165 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 and design standards and where possible

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v National considerations should be understood to include the national need for the infrastructure as set out in Chapter 2.

includes measures to enhance the landscape and other aspects of the environment. Where necessary, the Secretary of State should consider the imposition of appropriate requirements to ensure these standards are delivered.

Developments outside nationally designated landscapes which might affect them

5.166 The duty to have regard to the purposes of nationally designated landscapes also applies when considering applications for projects outside the boundaries of these areas (in their 'setting') which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be located and designed sensitively, to avoid or minimise impacts. 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.

Developments in locally important landscape areas

5.167 Outside nationally designated landscapes, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development plan in England has policies based on landscape character assessment, these should be given particular consideration. However, local landscape designations should not be used in and of themselves

as reasons to refuse consent, as this may unduly restrict acceptable development.

5.168 Within areas defined as Heritage Coast[w] that are not already within one of the nationally designated landscape areas, planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate unless it is compatible with its special character.

5.169 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 appropriate mitigation.

Visual impact

5.170 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,

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w Areas of undeveloped coastline which are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors.

especially those defined as Heritage Coast. Within areas defined as Heritage Coast, planning policies and decisions should be consistent with the special character of the area and the importance of its conservation.

Land Use, including Open Space, Green Infrastructure and Green Belt

Introduction

5.171 Access to high quality open spaces and the countryside[x] and opportunities for sport and recreation can be a means of providing necessary mitigation and/or compensation requirements. Green infrastructure is a network of multi-functional green and blue features and other natural features, urban and rural, which are capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity. Green Infrastructure can include nature-based solutions to prevent or reduce environmental impacts. Green infrastructure can also enable developments to provide positive environmental, social and economic benefits[106].

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x All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.

5.172 The re-use of previously developed land for new development can make a major contribution to sustainable development by reducing the amount of countryside and undeveloped greenfield land that needs to be used. However, this may not be possible for some forms of infrastructure, particularly linear infrastructure such as roads and railway lines. Similarly, for strategic rail freight interchanges, brownfield land[y] may not be economically or commercially feasible, albeit applicants will need to demonstrate clearly why the use of brownfield land is not appropriate.

5.173 Green Belts, defined in a development plan, are situated around certain cities and large built-up areas. The fundamental aim of Green Belt policy is

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y Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes: land that is or was last occupied by agricultural or forestry buildings; land that has been developed for minerals extraction or waste disposal by landfill, where provision for restoration has been made through development management procedures; land in built-up areas such as residential gardens, parks, recreation grounds and allotments; and land that was previously developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape.

to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. The Examining Authority should ensure that substantial weight is given to any harm to the Green Belt when assessing a proposal. Under very special circumstances, development in the Green Belt is allowed if the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations[107].

5.174 Where it has been concluded that it is necessary to release Green Belt land for development, plans should give first consideration to land which has been previously developed. They should also set out ways in which the impact of removing land from the Green Belt can be offset through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land.

5.175 Productive forests, trees and woodlands contribute to a number of sustainability considerations. The 25 Year Environment Plan recognises the need to protect existing trees and forests. Specific actions are set out in the England Trees Action Plan 2021 to 2024, including a commitment to ensure strong planning reforms will lead to more trees being planted and ensure strong protections for existing trees.

Applicant's assessment

5.176 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, quality and functionality in a suitable and accessible location. Applicants considering 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.

5.177 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[108].

5.178 The applicant should identify existing and proposed[z] 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.

5.179 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.

5.180 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 health and protect and improve soils, taking into account any mitigation measures proposed. Soil is an important natural capital resource,

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z For example, where a planning application has been submitted.

providing many essential services such as storing carbon (also known as a carbon sink), reducing the risk of flooding, providing wildlife habitats and delivering global food supplies. Guidance on sustainable soil management can be found in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. As a first principle, developments should be on previously developed (brownfield) sites provided that it is not of high environmental value (see paragraphs 5.146 to 5.151).

5.181 The Agricultural Land Classification[109] is the only approved system for grading agricultural quality in England and Wales. If necessary, field surveys should be used to establish the Agricultural Land Classification grades in accordance with the current grading criteria, or any successor to it and identify the soil types to inform soil management at the construction, operation and decommissioning phases in line with the Defra Construction Code[110]. Applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination. This is to be in line with the ambition set out in the 25 Year Environment Plan to manage all of England's soils sustainably by 2030.

5.182 The applicant should engage in pre-application discussions with the local planning authority and other regulatory bodies at the earliest opportunity. It is essential that engagement is meaningful and

supported where necessary by Statements of Common Ground. Discussions will cover a range of potential local impacts and issues, and 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. This includes, 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 is submitted during examination and after an application for development consent has been accepted.

5.183 Applicants should safeguard any mineral resources on the proposed site as far as possible. Taking into account the policies of the Minerals Planning Authority, applicants should consider whether prior extraction of the minerals would be appropriate.

Mitigation

5.184 Applicants can avoid, or minimise, the direct effects of a project on the existing use of the proposed site or proposed uses near the site, by the application of good design principles, including the layout of the project and the protection of soils during construction.

5.185 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. Applicants should endeavour to improve networks and other areas of open space, including appropriate access to new coastal access routes, National Trails[aa] and other public rights of way.

5.186 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 an exchange of land between two owners 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 Planning Act apply, any replacement land provided under those sections will need to conform to the requirements of those sections.

5.187 Existing trees and woodlands should be retained where possible. The applicant should assess the impacts on, and loss of, all trees and woodlands within the project boundary and develop mitigation measures to minimise adverse impacts and any risk of net deforestation as a result of the scheme. Mitigation may include the use of buffers to enhance resilience, improvements to connectivity, and improved woodland management. Where woodland loss is unavoidable, compensation

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aa Long distance routes for walking, cycling and horse riding.

schemes will be required, and the long-term management and maintenance of newly planted trees should be secured.

5.188 Where a proposed development has an impact on a Mineral Safeguarding Area[bb], the Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to safeguard mineral resources.

5.189 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 improving access and connectivity. Other examples include, prioritising active travel or well-designed optimised parking and storage in employment areas with appropriate landscaping.

5.190 Public rights of way, National Trails, and other rights of access to land (for example, open access land) are important recreational facilities for walkers, wheelers, 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 and open access land, and to consider what opportunities there may be to improve access and connectivity. In considering revisions to an existing

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bb An area designated by minerals planning authorities which covers known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.

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.

5.191 Public rights of way can be extinguished under section 136 of the Planning Act if the Secretary of State is satisfied that an alternative has been or will be provided or is not required.

Decision-making

5.192 The Secretary of State should not grant consent for development on existing open space, sports and recreational buildings and land, including playing fields[cc], 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. Additionally, if 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

cc The whole of a site which encompasses at least one playing pitch as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2015.

applicant to provide new, improved or compensatory land or facilities.

5.193 Where networks of green infrastructure have been identified in development plans, they should be protected from development, and, where possible, strengthened. The environmental and visual value of linear infrastructure and its footprint in supporting biodiversity and ecosystems should also be taken into account, including the creation of new green infrastructure, when assessing the impact on green infrastructure. The value of the development in improving connectivity, particularly through active travel links and recreation should also be taken into account when assessing the impact on green infrastructure.

5.194 The Secretary of State should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. The Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to minimise impacts on soils or soil resources.

5.195 Inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances. When considering any Development Consent Order, the Examining Authority and Secretary of State should ensure that substantial weight is given to any harm to the Green

Belt. ‘Very special circumstances’ will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations. When located in the Green Belt, elements of many national networks infrastructure projects will comprise inappropriate development. In such cases, scheme promoters will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the safety benefits associated with improvements to the relevant section of the national network.

Historic Environment

Introduction

5.196 The construction and operation of national networks infrastructure has the potential to result in adverse impacts on the historic environment.

5.197 The historic environment includes 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.

5.198 Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called ‘heritage assets’. Heritage assets

may be buildings, monuments, sites, places, areas or landscapes. The sum of the heritage interests that a heritage asset holds is referred to as its significance. Significance derives not only from a heritage asset's physical presence, but also from its setting[dd].

5.199 Some heritage assets have a level of significance that justifies official designation. Categories of designated heritage assets are: World Heritage Sites (natural and cultural); Scheduled Monuments; Listed Buildings; Protected Wreck Sites; Protected Military Remains; Registered Parks and Gardens; Registered Battlefields; and Conservation Areas[ee].

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dd Setting of a heritage asset is the surroundings in which it is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

ee Designated heritage assets in Wales also include heritage landscapes. The issuing of licenses to undertake works on Protected Wreck Sites in English waters is the responsibility of the Secretary of State for Culture, Media and Sport and does not form part of Development Consent Orders. The issuing of licences for Protected Military Remains is the responsibility of the Secretary of State for Defence.

5.200 Non-designated heritage assets of archaeological interest[ff] 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.

5.201 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-making process), on the basis of clear evidence that the assets have a significance that merit consideration in that process.

Applicant's assessment

5.202 The applicant should undertake an assessment of any significant heritage impacts of the proposed project and 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

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ff There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

Environment Record[gg] 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 archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation.

5.203 The discovery of heritage assets has potential to have a significant delay on scheme development, and applicants should ensure that protection of the historic environment is considered early in the development process.

Recording

5.204 A documentary record of our past is not as valuable as retaining the heritage asset and therefore the ability to record evidence of the asset should not be a factor in deciding whether consent should be given.

5.205 Where the loss of the whole or part of a heritage asset's significance is justified, the Secretary of State should require the applicant to record and advance

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gg Historic Environment Records are information services maintained by local authorities and National Park Authorities with a view to providing access to comprehensive and dynamic resources relating to the historic environment of an area for public benefit and use. Further information is available from the Heritage Gateway website. English Heritage/Historic England should also be consulted, where relevant.

understanding of the significance of the heritage asset before it is lost (wholly or in part). The extent of the requirement should be proportionate to the importance and the impact. Applicants should be required to deposit copies of the reports with the relevant Historic Environment Record. They should also be required to deposit the archive generated in a local museum or other public depository willing to receive it.

5.206 The Secretary of State may add requirements to the Development Consent Order to ensure that this is undertaken in a timely manner in accordance with a written scheme of investigation that meets the requirements of this section, and has been agreed in writing with the relevant Local Authority (or, where the development is in English waters, with the Marine Management Organisation, English Heritage and/or Historic England) and that the completion of the exercise is properly secured[hh].

5.207 Where there is a high probability that a development site may include as yet undiscovered heritage assets with archaeological interest, the Secretary of State should consider requirements to ensure that appropriate procedures are in place for the identification and treatment of such assets discovered during construction.

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hh Further details can be found on Historic England's website.

Decision-making

5.208 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). The Secretary of State should take 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[ii];
- representations made by interested parties during the examination
- expert advice, where appropriate, and when the need to understand the significance of the heritage asset demands it

5.209 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 heritage asset, and the value that they hold for this and future generations. This understanding

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ii Further details can be found on Historic England's website.

should be used to avoid or minimise conflict between their conservation and any aspect of the proposal.

5.210 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).

5.211 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.

5.212 Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit[jj] 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.

5.213 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 it is necessary to deliver substantial public benefits that outweigh that loss or harm. Alternatively, that all of the following apply:

- the nature of the heritage asset prevents all reasonable uses of the site

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jj Public benefits should flow from the proposed development. They should be of a nature or scale to be of benefit to the public at large and not just be a private benefit. However, benefits do not always have to be visible or accessible to the public in order to be genuine public benefits, for example, works to a listed private dwelling which secure its future as a designated heritage asset could be a public benefit.

- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation
- conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible
- the harm or loss is outweighed by the benefit of bringing the site back into use[111]

5.214 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.

5.215 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. This should take 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.

5.216 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.

5.217 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.

5.218 Where there is evidence of deliberate neglect of, or damage to, a heritage asset the Secretary of State should not take its deteriorated state into account in any decision.

Noise and vibration

Introduction

5.219 Excessive noise can have wide-ranging impacts on the quality of human life and health (for example, owing to annoyance or sleep disturbance), use and 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.

5.220 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 Nature Conservation section of this NPS.

5.221 Factors that will determine the likely noise impact include:

- construction noise and the inherent operational noise from the proposed development and its characteristics
- the proximity of the proposed development to noise sensitive premises (including residential properties, schools and hospitals) and noise sensitive areas (including certain parks and open spaces)
- the proximity of the proposed development to quiet places and other areas that are particularly valued for their tranquillity, acoustic environment or landscape quality such as National Parks, the Broads or Areas of Outstanding Natural Beauty
- the proximity of the proposed development to designated sites where noise may have an adverse impact on the special features of interest, protected species or other wildlife

Applicant's assessment

5.222 Where noise impacts are likely to arise from the proposed development, the applicant should include the following in its noise assessment:

- 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 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:
    - in the shorter term such as during the construction period
    - in the longer term during the operating life of the infrastructure
    - at particular times of the day, evening and night (and weekends) as appropriate
- an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive areas, including

identifying whether any particular groups are more likely to be affected

- measures to be employed in mitigating the effects of noise applicants should consider using best available techniques to reduce noise impacts

5.223 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.

5.224 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 and Common Noise Assessment Methods (CNOSSOS). The prediction of noise from new railways should be based on the method described in Calculation of Railway Noise and Common Noise Assessment Methods (CNOSSOS). 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.

5.225 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.

Mitigation

5.226 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 and future maintenance of all mitigation measures.

5.227 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 design: to minimise noise transmission through landscaping and screening by natural or purpose-built barriers including topographical changes
- administration: specifying acceptable noise limits or times of use (for example, in the case of railway station public address systems)

5.228 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.

5.229 Applicants should consider opportunities to address the noise issues associated with the Important Areas as identified through the noise action planning process.

Decision-making

5.230 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.

5.231 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.

5.232 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
- contribute to improvements to health and quality of life through the effective management and control of noise, where possible

5.233 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.

Socio-economic impacts

Introduction

5.234 The construction and operation of nationally significant infrastructure projects may have short or longer term economic and social impacts on local communities, businesses or services. The construction period for significant projects can be lengthy; however, this can generate employment through the construction period and benefit the local economy. Applicants should look to maximise local employment opportunities during construction and operational phases.

Applicant's assessment

5.235 Where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts.

5.236 This assessment should consider all relevant socio-economic impacts, which may include:

- the creation of jobs and training opportunities. Applicants may wish to provide information on the sustainability of the jobs created, including where they will help to develop the skills needed for the UK's transition to net zero

- the value of increased connectivity on productivity and access to jobs, services and housing
- the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities. Applicants should engage with local businesses and the local community at the pre-construction phase to understand opportunities for businesses and the community throughout construction, such as employment or educational programmes
- any indirect beneficial impacts for the region hosting the infrastructure, particularly in relation to use of local support services and supply chains
- effects on tourism
- cumulative effects – if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region

5.237 Applicants should describe the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how the development's socio-economic impacts correlate with local planning policies.

5.238 For Strategic Rail Freight Interchange developments, applicants should outline the benefits to workforce conditions of the new development once it is operational. This should include improved facilities for drivers (including Heavy Goods Vehicles) such as parking, hygiene facilities and hospitality establishments.

Mitigation

5.239 The Secretary of State should consider whether mitigation measures are necessary to mitigate any adverse socio-economic impacts of the development. For example, high quality design can improve the visual and environmental experience for visitors and the local community alike.

5.240 This could include the potential for jobs to be created in the area as a result of a major scheme, the impact on local businesses and the supply chain, and potentially require the provision of additional local services. This is more relevant to Strategic Rail Freight Interchanges than road or rail schemes.

Decision-making

5.241 The Secretary of State should have regard to the potential socio-economic impacts of new infrastructure identified by the applicant and from any other sources that the Secretary of State considers to be both relevant and important to its decision.

5.242 The Secretary of State should consider any relevant positive provisions the applicant has made, or is proposing to make, to mitigate impacts (for example, through planning obligations), and any legacy benefits that may arise. As well as any options for phasing development in relation to the socio-economic impacts.

Water quality and resources

Introduction

5.243 Infrastructure development can have adverse effects on the water environment, including groundwater, inland surface water, transitional waters and coastal waters. During the construction and operation, it can lead to increased demand for water, involve discharges to water and cause adverse ecological effects resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants to the water environment. These effects could lead to adverse impacts on health or on species and habitats (see paragraphs 5.49 to 5.64), and could, in particular, result in surface waters, groundwaters or protected areas failing to meet environmental objectives established under the Water Framework Regulations.

5.244 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[112]. 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[113].

Applicant's assessment

5.245 Applicants should make early contact with the relevant regulators, including the Environment Agency, for abstraction licensing or water quality activity or groundwater activity permits, and with water supply companies likely to supply the water. Where development is likely to have adverse effects on the water environment, the applicant should undertake an assessment of the existing status and impacts of the proposed project on water quality, water resources and physical characteristics of the water environment as part of the Environmental Statement or equivalent. The assessment should also include how this might change due to the impact of climate change on rainfall patterns and consequently water availability across the water environment (see paragraphs 4.30 to 4.41).

5.246 For those projects that are improving the existing infrastructure, such as road widening, opportunities should be taken, where feasible, to improve the quality of existing discharges where these are identified and shown to contribute towards Water Environment (Water

Framework Directive) (England and Wales) Regulations 2017 ("Water Framework Regulations") commitments. A permit under the Environmental Permitting Regulations may also be required where improvements are being made to existing infrastructure, for example, the discharge of contaminated water from roads.

5.247 Under Environmental Permitting Regulations, applicants are required to manage surface water during construction by treating surface water runoff from exposed topsoil prior to discharging and to limit the discharge of suspended solids. For example, from car parks or other areas of hard standing, during operation. Consent may be required for working near to a river from the Environment Agency and a pollution incident response plan is recommended[114].

5.248 Applicants should consider protective measures to control the risk of pollution to groundwater beyond those outlined in Environmental Management Plans – this could include, for example, the use of protective barriers.

5.249 Any assessment for both the construction and operational phases of the development should describe:

- the existing quality of waters affected by the proposed project, and how climate change will impact on this
- existing water resources affected by the proposed project, the impacts of the proposed project on water resources, and how climate change will impact on this

- 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 Regulations and source protection zones around potable groundwater abstractions; and how climate change will impact on this
- any cumulative effects

5.250 The assessment should also identify protected areas and other water usages within the vicinity of any discharge, such as bathing waters, abstractions and fisheries at risk from proposed works and the permits/consents required. It should also identify opportunities to improve water quality, for example, through nature-based approaches or solutions, and as part of environmental and biodiversity net gain.

Mitigation

5.251 The impact on local water resources can be minimised through planning and design for the efficient use of water, including water recycling. If an applicant needs new water infrastructure, significant supplies or impacts other water supplies, the applicant should consult with the local water company and the Environment Agency.

5.252 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.

5.253 The project should adhere to any National Standards for Sustainable Drainage Systems. The Sustainable Drainage Systems Technical Standards introduced a hierarchical approach to drainage 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[115].

5.254 The project should identify opportunities and secure measures to protect and improve water quality and resources through green and blue infrastructure, sustainable drainage and environmental and biodiversity net gain. This will help to achieve 25 Year Environment Plan objectives and potentially provide greater capacity to support infrastructure needs.

5.255 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. This may also include the need for treatment of

water, which may need a permit under the Environmental Permitting Regulations.

Decision-making

5.256 Activities that discharge to the water environment are subject to pollution control and potentially the Environmental Permitting Regulations. The considerations set out in paragraphs 4.42 to 4.50 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.

5.257 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 Regulations.

5.258 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 Regulations. The specific objectives for particular river basins are set out in River Basin Management Plans. In terms of Water Framework Regulations compliance, the overall aim of projects should be to meet the environmental objectives under regulation 13 and to avoiding derogation by use of regulation 19 of the Water Framework Regulations. The Secretary of State should

also consider the interactions of the proposed project with other plans such as Water Resources Management Plans, Shoreline or Estuary Management Plans and Marine Plans.

5.259 The Secretary of State should consider whether appropriate requirements should be attached to any development consent and/or planning obligations to mitigate adverse effects on the water environment. This should involve discussions with the Environment Agency.

Impacts on transport networks

Introduction

5.260 This section covers two factors: the impact of construction on local networks whilst the scheme is being developed, and the impact of the scheme on wider transport networks once it is operational.

5.261 Government is committed to sustainable development through facilitating a modal shift to active travel and public transport, and reducing transport emissions including through delivering the infrastructure needed to support a transition to alternative fuels including electric vehicles. The impact of construction traffic on local networks needs to be minimised, the distance travelled by construction and goods vehicles needs to be reduced, and developments need to be accessible by various modes of transport.

Applicant's assessment

5.262 Applicants should consult the relevant highway authority, local planning authority, and Network Rail, as appropriate, on the assessment of transport impacts. This should include agreement on alignment to policies outlined in existing or emerging local plans and Local Transport Plans.

5.263 Different transport networks may need to share space within an area, even whilst serving different travel needs. For example, bus lanes, shared cycle lanes, green lanes, or bus and rail routes on the same corridor.

5.264 Applicants should seek to offer an integrated transport outcome, significantly considering opportunities to support other sustainable transport modes, as well as improving local connectivity and accessibility in developing infrastructure. The needs of pedestrian and other vulnerable road users should be considered, where appropriate, in line with the principles of the road user hierarchy.

5.265 The applicant should provide evidence that as part of the project they have addressed any new or existing severance issues and/or safety concerns that act as a barrier to non-motorised users, unless it is unsafe or unviable to do so.

Road and rail developments

5.266 For road and rail developments, the applicant's assessment should include an assessment of the

transport impacts on other networks as part of the application, based on discussions with the Local Highway Authority/Local Planning Authority.

Strategic Rail Freight Interchanges

5.267 For Strategic Rail Freight Interchanges, the applicant's assessment should include an assessment of the transport impacts on other networks as part of the application.

5.268 If a project is likely to have significant transport impacts it should include a Transport Assessment, using the Transport Appraisal Guidance methodology stipulated in Department for Transport guidance, or any successor to such methodology.

5.269 The applicant should also prepare a travel plan outlining management measures to mitigate transport impacts. A successful travel plan and mitigation strategy will understand the needs of pedestrians, cycling and vulnerable users. Audits should be undertaken to understand their movements and establish any barriers and opportunities to improve this environment. This includes detailing the accessibility of the development by active travel modes, such as the provision of safe and secure cycle parking and associated facilities, creating high quality pedestrian environments including through public realm improvements, enhancing modal interchanges to create an integrated transport system and access via public transport such as bus stops within close proximity of the development. Mitigating measures

should also look to reduce the need for any parking associated with the proposal, ensure the infrastructure needed to support the transition to alternative fuels including electric vehicles are in place during construction and ahead of operation, and to mitigate transport impacts.

5.270 For Strategic Rail Freight Interchanges, schemes impacting on the SRN during construction and operation, applicants should have regard to Department for Transport Circular 02/2013, the SRN and the delivery of sustainable development (or relevant update to this document).

5.271 If new transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by government for any third-party benefits. 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.

Mitigation

5.272 Mitigation measures for schemes should be proportionate and reasonable, focussed on facilitating journeys by active travel, public transport, and cleaner fuels.

5.273 Where development would worsen accessibility, there is a strong expectation that such impacts should be mitigated. Where impacts cannot be mitigated, the applicant is required to provide reasoning as to why impacts cannot be mitigated.

5.274 The applicant should provide evidence that the development improves the operation of the network and assists with capacity issues.

Road and rail developments

5.275 Mitigation measures may relate to the design, lay-out or operation of the scheme, or any support or funding to the immediate surrounding area of the scheme.

Strategic rail freight interchange development

5.276 For Strategic Rail Freight Interchanges, travel planning should be undertaken for all major developments which generate significant amounts of transport movement. There may be circumstances where the implementation of travel plan measures alone would not be sufficient to reduce the traffic demand of a project to acceptable levels. In such instances, the applicant should align with the agreements made with relevant highway authority, local planning authority, and Great British Railways Transition Team, as appropriate, as outlined in paragraphs 4.76 to 4.87.

Decision-making

5.277 The Examining Authority and the Secretary of State should give due consideration to impacts on local

transport networks and policies set out in existing and emerging local plans and Local Transport Plans, during both construction and operation.

5.278 Consideration should also be given to whether the applicant has maximised opportunities to allow for journeys associated with the development to be undertaken via sustainable modes.

5.279 Schemes should be developed, and options considered, in the light of relevant policies and plans, both national and local, taking into account local models where appropriate.

5.280 Where a development negatively impacts on surrounding transport infrastructure including connecting transport networks, the Secretary of State should ensure that the applicant has taken reasonable steps to mitigate these impacts. This could include the applicant increasing the project's scope to avoid impacts on surrounding transport infrastructure and providing resilience on the wider network. In particular, this should recognise the importance of providing adequate lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance. The applicant may increase the project's scope to avoid impacts on the surrounding transport infrastructure and improve network resilience. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should expect

applicants to accept requirements and/or obligations to fund infrastructure or mitigate adverse impacts on transport networks.

5.281 Provided that the applicant is willing to commit to transport planning obligations and to mitigate transport impacts identified in the Transport Appraisal Guidance Transport Assessment (including environment and social impacts), with attribution of costs calculated in accordance with the Department's guidance, then development consent should not be withheld. Where residual effects on the surrounding transport infrastructure remain, appropriately limited weight should be given.

6. Endnotes

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3 GOV. UK Legislation. Planning Act 2008 Section 35

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50 Department for Transport. National Road Traffic Projections 2022

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