

A47 Wansford to Sutton Dualling

Scheme Number: TR010039

Volume 7

7.2 National Policy Statement for National Networks Accordance Tables

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7.2 National Policy Statement for National Networks Accordance Tables

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1 INTRODUCTION

1.1 Purpose of this Document

- 1.1.1 The National Networks National Policy Statement (NPS NN) Accordance Tables relate to an application made by Highways England (the Applicant) to the Secretary of State for Transport via the Planning Inspectorate (the Inspectorate) under the Planning Act 2008 (the 2008 Act) for a Development Consent Order (DCO). If made, the DCO would grant consent for the A47 Wansford to Sutton Scheme (the Scheme).
- 1.1.2 The NPS NN sets out Government's policies in respect of the delivery of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England. It provides planning guidance for promoters of NSIPs and the basis for the examination by the Examining Authority (ExA) and decisions by the Secretary of State. Further details about NPS NN can be found in the Case for the Scheme (**TR010039/APP/7.1**).
- 1.1.3 The Accordance Tables provide an assessment of the Scheme's strategic alignment and conformity with the NPS NN and are set out as follows:
- Table 1: Scheme conformity with NPS NN Chapter 2 – The need for development of the national networks and Government's policy
 - Table 2: Scheme conformity with NPS NN Chapter 3 – Wider Government policy on national networks
 - Table 3: Scheme conformity with NPS NN Chapter 4 – Assessment principles
 - Table 4: Scheme conformity with NPS NN Chapter 5 – Generic impacts.
- 1.1.4 Each relevant paragraph in the NPS NN is set out with commentary as to the extent of compliance by the Scheme with its terms.
- 1.1.5 The Accordance Tables reference other relevant documentation submitted as part of the Application and provide a summary where appropriate. The following documents and assessments have been used to inform the completion of the Accordance Tables:
- Draft Development Consent Order (**TR010039/APP/3.1**)
 - Consents and Agreement Position Statement (**TR010039/APP/3.3**)
 - Consultation Report and Annexes (**TR010039/APP/5.1** and **TR010039/APP/5.2**)
 - Environmental Statement, including Figures, Appendices, and Non-Technical Summary (**TR010039/APP/6.1**, **TR010039/APP/6.2**, **TR010039/APP/6.3**, **TR010039/APP/6.4** respectively)
 - Flood Risk Assessment, ES Appendix 13.1 (**TR010039/APP/6.3**)
 - Drainage Strategy, ES Appendix 13.2 (**TR010039/APP/6.3**)
 - Statement Relating to Statutory Nuisance (**TR010039/APP/6.7**)
 - Environmental Masterplan (**TR010039/APP/6.8**)
 - Report to Inform Habitat Regulations Assessment Report (**TR010039/APP/6.9**)
 - Case for the Scheme (**TR010039/APP/7.1**)

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- Transport Assessment (**TR010039/APP/7.3**)
 - Scheme Design Report (**TR010039/APP/7.4**)
 - Environmental Management Plan (**TR010039/APP/7.5**)
 - Outline Traffic Management Plan (**TR010039/APP/7.6**)
 - Equality Impact Assessment (**TR010039/APP/7.7**)

2 NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS ACCORDANCE TABLES

2.1 Table 1: Compliance with NPS NN Chapter 2

NPSNN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPS NN)	Compliance with the NPS NN
2.1 (The need for development of the national networks and Government's policy)	The national road and rail networks that connect our cities, regions and international gateways play a significant part in supporting economic growth, as well as existing economic activity and productivity and in facilitating passenger, business and leisure journeys across the country. Well-connected and high-performing networks with sufficient capacity are vital to meet the country's long-term needs and support a prosperous economy.	The A47 Wansford to Sutton Scheme (the Scheme) forms part of a package of proposals for the A47 corridor to achieve a modern standard dual carriageway, improving the vital connection between the junction with the A1 west of Peterborough, Kings Lynn, Norwich and Great Yarmouth. The Scheme will upgrade the single carriageway section of the A47 between Wansford and Sutton to dual carriageway with related junction improvements. Section 3 of the Case for the Scheme (TR010039/APP/7.1) articulates the need for the Scheme. The single carriageway currently acts as a bottleneck and leads to longer and unreliable journey times. The Scheme will improve traffic flow, reduce journey times and increase route safety and resilience. It will also support economic growth by making journeys safer and more reliable as addressed in the response to NPS NN paragraph 2.2 below.
2.2	There is a critical need to improve the national networks to address road congestion and crowding on the railways to provide safe, expeditious and resilient networks that better support social and economic activity; and to provide a transport network that is capable of stimulating and supporting economic growth. Improvements may also be required to address the impact of the national networks on quality of life and environmental factors.	The Scheme will create appropriate capacity to cope with peak demand and growth on the SRN at this location, ensuring a free flowing, safe, reliable and resilient network for the future. Section 7 of the TA (TR010039/APP/7.3) describes the positive operational impacts of the Scheme on: journey times and congestion; the local road network and resilience; walking, cycling and public transport; and accidents. The economic appraisal of the Scheme has adopted a 60-year appraisal period and used a Benefit to Cost Ratio (BCR), in accordance with Department for Transport (DfT) guidelines, to compare the Scheme cost to its benefits over this period. This is set out in Section 5 of the Case for the Scheme (TR010039/APP/7.1). Considerations include user benefits during operation, disbenefits during construction, accident savings, monetised greenhouse gas, air quality, noise impacts, journey time reliability, wider economic impacts, and the social and distributional impacts. Section 5.3 of the Case for the Scheme (TR010039/APP/7.1) summarises the economic assessment results in both

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		qualitative and quantitative terms. The Scheme will generate £31.16m of travel time savings for commuters, £25.99m for other consumer users of the road and £34.6m for business users due to reductions in congestion, though there will be related disbenefits in terms of vehicle operating costs (VOC), due to increased speed and fuel consumption, of --£0.90m and -£1.12m for commuters and other general users respectively but a beneficial saving of £2.72m VOC for business users. There will be total construction disbenefits from journey delays (-£2.05m) and greenhouse gases (-£2.61m). Over the 60-year appraisal period total environment disbenefits would include air quality - £0.37m and noise -£0.29m. Journey time reliability benefits of £0.75m are due to the greater reliability of dual carriageway over single, while the wider economic benefits of £19.93m are mainly derived from the agglomeration assessment. This suggests that business users are the main beneficiaries from the enhanced connectivity and congestion reductions brought about by the Scheme and that there will be an overall, long-term positive impact. In terms of road safety, there will be an £10.67m benefit through accident savings. A distributional analysis has also been undertaken to consider the variance of impacts across different social groups to identify those who would gain or lose, with an emphasis on the potential impact on equality. In this particular regard, the analysis finds that the Scheme will be beneficial for both affluent, and to a lesser degree, deprived areas. Also, all vulnerable groups and users will experience benefits as a result of improved site perimeters, entrances, exits and landscaping. The Scheme would have a neutral impact on accidents with a marginal reduction for cyclists, motorcyclists and young male drivers. There will be moderate adverse impacts in respect of noise on more affluent groups and noise changes at schools, carehomes and day centres are expected to deteriorate. There will also be moderate adverse impacts on the air quality (NO2 and PM10 levels) of mainly affluent income groups with a neutral impact on less affluent groups. Air quality is expected to improve at

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		the school. There will be also neutral impacts on physical activity, public transport and accessibility; a moderate beneficial impact on security and slight beneficial impact on journey quality; and a slight adverse impact associated with accessing medical, education and leisure facilities. There will be a slight adverse effect on severance, particularly in relation to vulnerable groups and young people accessing amenities in the areas surrounding the Scheme, as a result of increased traffic levels. All groups will experience slight disbenefits in terms of affordability resulting from the increase in VOC, though this will be greater for more affluent groups. The Scheme generates a present value benefit of £120.19m. The total Scheme costs are £31.42m (present value) with an assumption that none of the costs will be funded from developer contributions. The value for the total wider economic impacts is about £19.93m, whilst for journey time reliability it is £0.75m. The resulting quantitative calculation, which takes into account journey time reliability and the wider economic benefits, gives an adjusted BCR of 3.8. This represents 'high' value for money, based on the DfT VfM Framework.
2.4	The pressure on our networks is expected to increase even further as the long-term drivers for demand to travel - GDP and population - are forecast to increase substantially over coming years. Under central forecasts, road traffic is forecast to increase by 30% and rail journeys by 40%, rail freight has the potential to nearly double by 2030.	Section 7 of the TA (TR010039/APP/7.3) sets out the assessment of current and future network performance. Observed traffic data indicates that, based on the theoretical capacity indicative analysis, 2015 base year traffic flows in the AM peak, are greater than the 85% threshold. Also average weekday traffic speeds, on the single carriage way section between the A47/A1 east roundabout and Upton Road in the AM and PM peaks, drop to around 33-35 mph, which represents a 42-44% decrease from the speed limit. The modelling analysis indicates that the forecast local and regional traffic growth will cause a significant increase in delays along the A47 as well as on the local side road network. The Scheme, however, provides the required capacity improvements to allow for the forecasted traffic growth. With construction of the Scheme, across all assessed routes the Do-

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		Something journey times are reduced to levels below the Do Minimum scenario. The time savings along the A47 between the A1/A47 western roundabout and Ailsworth are approximately 1.5 minutes in 2025 and 2 minutes 2040 in the eastbound direction in the AM peak, when compared to the Do-Minimum in those years. This represents approximately 17-20% reduction in the total journey time across the route. The rest of the peaks also experience an average saving of approximately 0.5-1.0 minutes in both directions. Apart from 2040 in the PM peak in the westbound direction which shows a saving of 0.2 minutes. Along the A1 south and A47 route (between A47 Junction 18 and A1 Junction 17) journey times decrease by up to 18% and 23% in 2025 and 2040 respectively. The largest journey time savings are generated in 2040 in the AM peak with reductions of up to 4.7 mins in the eastbound direction and 2.8 in the westbound direction. Between the A47 Junction 18 and A1 Wothorpe Junction (the A1 (north) - A47 route), journey times decrease by around 1.5 minutes in the eastbound direction in the AM peak. The rest of the peaks also experience an average saving of approximately 0.5-1.0 minutes in both directions. Apart from 2040 in the PM peak in the westbound direction which shows a saving of 0.2 minutes. In terms of operational traffic impacts on the highway network, the modelling assessments show the Scheme can operate successfully with 2040 forecast demand.
2.6	There is also a need for development on the national networks to support national and local economic growth and regeneration, particularly in the most disadvantaged areas. Improved and new transport links can facilitate economic growth by bringing businesses closer to their workers, their markets and each other. This can help rebalance the economy.	Congestion, delays and unreliable journey times caused by inefficient transport infrastructure have a negative impact on the economy. Congestion is a barrier to economic growth. Norwich, Cambridge and Peterborough are among the fastest growing cities in the country. Congestion and poor journey time reliability are a constraint to local businesses, tourism and the visitor economy. Journey time reliability benefits would be worth £0.75m, while the wider economic benefits of £19.93m are mainly derived from the agglomeration assessment. This suggests that business users are the main beneficiaries from the enhanced connectivity and congestion reductions brought about by

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		the Scheme and that there will be an overall, long-term positive impact. See also response to NPS NN paragraph 2.2 above which provides detail in relation to the distributional analysis and variance of impacts across different social groups.
2.7	In some cases, there may be a need for development to improve resilience on the networks to adapt to climate change and extreme weather events rather than just tackling a congestion problem.	ES Chapter 13 Road Drainage and the Water Environment and the Flood Risk Assessment (FRA) (ES Appendix 13.1 (TR010039/APP/6.3)), consider the impact of flooding as a result of climate change and describe how the Scheme has been designed to minimise the risk of flooding as a result of the new works, and also the risk of flooding to the Scheme, by incorporating current design standards and future climate change allowances to improve its resilience. ES Chapter 14 Climate (TR010039/APP/6.1) considers the Scheme's effect on climate (i.e. increases in carbon emissions) as well as the potential vulnerability of the Scheme to climate change (i.e. the resilience of Scheme assets to projected changes in climate). An assessment using the Highways England Carbon Tool (v2.3) has been carried out to ensure carbon has been considered throughout the design process, resulting in the development of a carbon baseline from which further reductions will be made. Throughout the design of the project, opportunities for carbon reduction have been considered. Carbon savings were identified, associated with the segregated left-hand turn from the A1 to the A47. Detailed design is ongoing, but a high-level estimate shows a saving of 23,350m³ of cut material associated with this design change - a likely carbon saving of up to 675 tCO₂e. The future design phases and subsequent construction of the Scheme will aim to further reduce and minimise carbon emissions associated with construction. (Section 14.9) No aspect of the Scheme is considered to be vulnerable to projected climate change and it has therefore been deemed resilient. (Section 14.9).
2.9	Broader environment, safety and accessibility goals will also generate requirements for development. In particular, development will be needed to address safety problems, enhance the environment or enhance accessibility for Non-Motorised Users. In their current	The Scheme's objectives, set out in Section 3 of the Case for the Scheme, (TR010039/APP/7.1) are to deliver a design which not only supports economic growth and achieves value for money but will also result in a safer, more free flowing network which is integrated and accessible to all road and footpath users. Where possible impacts should be minimised and

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	state, without development, the national networks will act as a constraint to sustainable	improve the environment for those receptors along the route of the new and existing road. Unavoidable residual impacts of significance are summarised in the Case for the Scheme Table 6.1 (TR010039/APP/7.1).
2.13	The Strategic Road Network provides critical links between cities, joins up communities, connects our major ports, airports and rail terminals. It provides a vital role in people's journeys, and drives prosperity by supporting new and existing development, encouraging trade and attracting investment. A well-functioning Strategic Road Network is critical in enabling safe and reliable journeys and the movement of goods in support of the national and regional economies.	Section 6 of the Case for the Scheme (TR010039/APP/7.1) articulates its need, as part of the SRN, in policy terms. This is demonstrated by its inclusion within RIS2, the 2020 Local Transport Plan and the Peterborough LTTS. Section 3(6) of the Infrastructure Act 2015 places a duty on the SoS to comply with the provisions of the RIS. By increasing road capacity, reducing congestion and improving safety on the A47 between Wansford and Sutton, and improving green infrastructure, the Scheme will encourage inward investment, support housebuilding and support the economic growth and distribution objectives contained in Sub-regional and local planning, economic and transport documents.
2.16	Traffic congestion constrains the economy and impacts negatively on quality of life by: • Constraining existing economic activity as well as economic growth, by increasing costs to businesses, damaging their competitiveness and making it harder for them to access export markets. Businesses regularly consider access to good roads and other transport connections as key criteria in making decisions about where to locate. • Leading to a marked deterioration in the experience of road users. For some, particularly those with time-pressured journeys, congestion can cause frustration and stress, as well as inconvenience, reducing quality of life. • Constraining job opportunities as workers have more difficulty accessing labour markets. • Causing more environmental problems, with more emissions per vehicle and greater problems of blight and intrusion for people nearby. This is especially true where traffic is routed through small communities or sensitive environmental areas.	Currently the single carriageway section of the A47 between Wansford and Sutton acts as a bottleneck, resulting in congestion and leading to longer and unreliable journey times. Traffic flows are approaching the reasonable capacity limitations of the road. Local communities and businesses in the area are directly and indirectly affected by the intrusion and congestion on the A47 and by traffic seeking to avoid congestion and delays. Currently this acts as a deterrent to inward investment both in business and housebuilding terms. The Transport Assessment (TR010039/APP/7.3) summarised in Section 4 of the Case for the Scheme (TR010039/APP/7.1) demonstrates that the Scheme will achieve the following: • provision of additional capacity as well as improvement of journey times and journey time reliability to encourage economic growth in the local area as well as across the A47 corridor between the A1 and Peterborough • improvement of safety operational issues by upgrading to dual carriageway and provision of a separate A1 EB off-slip road • reduction of road traffic congestion with journey times reducing in the 2040 Do-Something scenario to be better than the Do-Minimum scenario

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		- improvement of reliability and network resilience as dual carriageways are more reliable than single carriageways. Road capacity is increased, delays are shortened and accidents (and their impacts) are reduced, all of which contribute to improved reliability - improvements to cycling, walking and other vulnerable users by providing new cycling and walking infrastructure as well as downgrading the existing A47 alignment, between Sutton and Ailsworth, to a local road status. The response to NPS NN paragraph 2.2 above summarises the likely wider economic growth attributed to the development of the Scheme. The ES (TR010039/APP/6.1) presents the assessment of the Scheme's impacts on the existing environment and people living in the vicinity.
2.17	The national road network is already under significant pressure. It is estimated that around 16% of all travel time in 2010 was spent delayed in traffic, and that congestion has significant economic costs: in 2010 the direct costs of congestion on the Strategic Road Network in England were estimated at £1.9 billion per annum.	See response to NPS NN paragraph 2.2.
2.22	Without improving the road network, including its performance, it will be difficult to support further economic development, employment and housing and this will impede economic growth and reduce people's quality of life. The Government has therefore concluded that at strategic level there is a compelling need for development of the national road network.	See response to NPS NN paragraphs 2.1, 2.2, 2.6, 2.13 and 2.16. The Scheme is included in the Department of Transport's Road Investment Strategy 2 (RIS2) for 2020-2025 (page 101) as the <i>"A47 Wansford to Sutton – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough."</i> The RIS2 sets out the list of schemes that are to be developed by Highways England over the period covered by the RIS. The Scheme forms part of the A47 SRN that will be upgraded by a number of proposals (including the Scheme) to a modern, high performing dual carriageway providing additional capacity and improved journey times for future regional traffic growth up to 2040. These improvements will make the local area, and the east, more attractive for businesses to locate and will help in promoting a competitive local economy. The dualling will also improve safety and reduce accidents on the route.

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2.24	The Government's policy on development of the Strategic Road Network is not that of predicting traffic growth and then providing for that growth regardless. Individual Schemes will be brought forward to tackle specific issues, including those of safety, rather than to meet unconstrained traffic growth (that is, 'predict and provide').	See response to NPS NN, paragraph 2.22. Section 3 of the Case for the Scheme (TR010039/APP/7.1) sets out the Need for the Scheme. The single carriageway section of A47 between Wansford and Sutton lies between two dual carriageway sections of the A47, has a poor safety record and acts as a bottleneck, resulting in congestion and leading to longer and unreliable journey times. As well as providing additional capacity and improved journey times to encourage housing and economic growth, the Scheme will: • improve safety operational issues by upgrading to dual carriageway and providing a separate eastbound A1 sliproad, de-trunking the existing A47 alignment, between Sutton and Ailsworth and the provision of new cycling and walking infrastructure. Over a 60-year timeframe the Scheme improvements will save a total of 265 casualties and 42 KSIs • provide support for walkers, cyclists and horse riders by incorporating safe, convenient, accessible and attractive routes along and across the A47, with a section of the existing A47 alignment de-trunked to local road status and a section closed to vehicular traffic. New sections of shared footway / cycleway will be provided allowing a continuous east - west route for users between Wansford and Peterborough Road (Ailsworth) as well as linking into existing PRow and permissive footpaths at the River Nene and permissive routes at Sacrewell Farm • provide grade separated infrastructure comprising an underbridge at Sacrewell Farm suitable for all users and a underpass at the disused railway line suitable for pedestrians and cyclists allowing users to cross the new A47 alignment at two points for north to south movements. This improves the resilience of the network and provides additional access for short distance local movements.

2.2 Table 2: Compliance with NPS NN Chapter 3

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3.2 (Environment and social impacts)	The Government recognises that for development of the national road and rail networks to be sustainable these should be designed to minimise social and environmental impacts and improve quality of life.	An Environmental Impact Assessment (EIA) has been undertaken, and proposals developed to mitigate likely significant environment effects arising from the Scheme. Where specific design, mitigation and enhancement measures have been applied, these are reported under each individual technical chapter of the ES (TR010039/APP/6.1) and are summarised in the ES Non-Technical Summary (TR010039/APP/6.4). The likely significant effects identified are summarised as follows: • Air Quality – No significant residual air quality effects have been identified for the construction or operational phase on human health or ecological sensitive receptors. • Noise and Vibration – Construction noise is not predicted to result in any significant adverse residual effects. No significant residual traffic noise effects, adverse or beneficial, are predicted due of the operation of the Scheme. Any impacts that may constitute significant environmental effects from noise during operation will be monitored. Operational noise and vibration monitoring is not recommended. • Landscape and Visual Effects – During construction, the effect on the Nassaburgh Limestone Plateau and the Nene Valley Landscape Character Areas would be large adverse and significant stemming from tree and vegetation clearance, construction earthworks, construction vehicles, haul routes and material storage in compounds. Also, some lighting within site compounds. Mitigation will include best practice in site tidiness; materials delivered on an 'as needed' basis; protection of retained vegetation. Also during construction significant large and moderate adverse visual impacts would occur at 11 viewpoints (see Table 7-8 of ES Chapter 7 Landscape and Visual Effects (TR010039/APP/6.1)) including all aspects of construction including tree and vegetation removal,

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		temporary construction compounds, materials stockpile areas and haul routes. There will also be large adverse effects of significance on residential, community and PRow visual Receptors and 9 moderate adverse effects (see Table 7-9 of ES Chapter 7 (TR010039/APP/6.1)). Having considered the residual (Year 15) landscape and visual assessments, it is concluded that during operation the Scheme would not result in a significant long term residual effect on overall landscape and visual amenity. While a small number of visual receptors would experience a residual adverse (albeit not significant) visual effect, this would be a relatively limited change. • Cultural Heritage – The assessment finds that there will be only one moderate adverse significant effect as a result of the demolition of the former Wansford Road Railway Station. This will be mitigated by historic building and topographical recording, retention of the platform and linesman's hut if possible and reuse of the building materials. • Biodiversity – Following mitigation There will be a moderate adverse impact on NERC habitats in respect of the permanent loss of hedgerows, deciduous woodland, coastal and floodplain grazing marsh although these habitats are being compensated. There are no significant residual impacts at operational stage. • Road Drainage and the Water Environment – No significant adverse residual effects on surface water and groundwater receptors are anticipated during construction or operation of the Scheme. • Geology and Soils – At construction stage there will be a very large adverse effect on Grade 2 agricultural soils due to the loss of over 10 ha of land for permanent works. The footprint of the Scheme has been minimised and soils will be reused where possible subject to a materials management plan. There will also be a moderate adverse impact due to temporary land take of Grade 2 agricultural land for construction compounds, haul roads etc. Soils

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		will be protected and replaced to their baseline condition. Further, there will be moderate adverse impacts due to land take of 2.6 ha of Grade 3a and 2.2 ha of Grade 3b agricultural land for permanent works. Residual effects have been identified to be neutral for the operation of the Scheme. Population and Human Health – The demolition of Old Station House, will have a moderate adverse impact. A moderate significance has been chosen instead of large as the property is currently derelict and not occupied. Access to Lower Lodge Farm on Upton Road would be altered by the Scheme resulting in a journey length increase of 2.9km. The magnitude of impact is moderate adverse due to the introduction of severance with severe accessibility provision. Provisional traffic management measures at agricultural holding 1 are likely to have a temporary moderate adverse effect on agricultural operations as Holding 1 has been identified as having a very high sensitivity. There will also be a temporary moderate adverse effect on the profitability of Holding 3 due to the removal of 5ha of land for road construction purposes. Approximately 2.1 ha will be required from the 15ha Holding 5 during construction. This equates to 14% of the total area. This is likely to have a moderate adverse impact upon the turnover and profitability of the farming enterprise. Permanent removal of the cycle facilities at the A47/A1 roundabouts and the removal of A47/Upton Road / Peterborough Road roundabout (cycle movements between Ailsworth and Upton) will have a moderate adverse impact. There are no significant impacts on human health as a result of the Scheme construction. During operation, it is not expected that there would be any changes in health outcomes, however there may be some positive health outcomes in terms of noise and accessibility for some receptors. Material Assets and Waste - The residual effects during construction will be slight adverse and not significant. Significant environmental effects from the use of material assets and generation of waste during the first year of operational activities are not predicted due to limited material use and waste generation from infrequent maintenance activities. Design, mitigation and

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		enhancement measures will be implemented during construction and controlled through the EMP. Climate - There are no significant adverse effects of construction in relation to carbon emissions. Opportunities for reducing carbon during the construction phase will be considered at each key design stage and specific measures will be further developed such as the reuse and recycling of site won materials. No significant adverse effects of the operational Scheme as a result of climate have been identified, therefore no monitoring is required. However, it is noted that climate change projections are likely to change within the appraisal period of the Scheme (60 years), therefore the vulnerability of the Scheme to such changes should be reviewed when updated projections become available. Also, the recent UK Government announcement on ending the sales of new petrol and diesel vehicles by 2030 will further reduce the Scheme's end user carbon emissions. Though the above residual significant effects will be unavoidable, they have been minimised as far as possible. Policy and guidance recognises that not all impacts are able to be resolved in large scale Schemes and the Case for the Scheme (TR010039/APP/7.1) considers the above residual impacts against the longer term and wider benefits of the Scheme in environmental, safety, social and economic terms.
3.3	In delivering new schemes, the Government expects applicants to avoid and mitigate environmental and social impacts in line with the principles set out in the NPPF and the Government's planning guidance. Applicants should also provide evidence that they have considered reasonable opportunities to deliver environmental and social benefits as part of schemes.	See the response to NPS NN paragraph 3.2. At the core of the NPPF is a presumption in favour of sustainable development. The principles of the NPPF relevant to each of the topics covered in the ES (TR010039/APP/6.1), and local planning policies that need to be considered, are set out in Section 6 of the Case for the Scheme (TR010039/APP/7.1). This Section demonstrates that the Scheme is compliant with local and national planning policy. The technical chapters of the ES (TR010039/APP/6.1) set out how significant environmental impacts of the Scheme would be mitigated, in line with current relevant guidance and accepted principles, and how reasonable opportunities for environmental and social benefits have been considered as

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		part of the EIA process and would also be an ongoing aim of the detailed design process to deliver environmental and social benefits. Examples include: • enhancement of the existing, and provision of new, WCH routes • minimisation of construction effects on receptors and the environment • appointment of a community relations officer • preservation of archaeological resources and heritage assets • seeking to make carbon savings. Beyond individual schemes Highways England can pursue opportunities for enhancement through the Environment and Wellbeing Designated Funds. In this instance, although not part of the Scheme, there is an existing pollution risk at an outfall to a watercourse in the vicinity of the Scheme. The Scheme improves the situation (slight benefit) and further works through designated funds would improve the situation.
3.5	Outside the nationally significant infrastructure project regime, Government policy is to bring forward targeted works to address existing environmental problems on the Strategic Road Network and improve the performance of the network. This includes reconnecting habitats and ecosystems, enhancing the settings of historic and cultural heritage features, respecting and enhancing landscape character, improving water quality and reducing flood risk, avoiding significant adverse impacts from noise and vibration and addressing areas of poor air quality.	One of the Scheme's objectives is to protect and create an improved environment by minimising adverse impacts and where possible, improving the areas biodiversity such as the planting of native habitat. Chapters 5 to 14 of the ES (TR010039/APP/6.1) set out the measured baseline conditions used for assessment. Where existing environmental issues occur, their impact has been taken together with the potential impact of the Scheme and any mitigation has been designed to address and eradicate the entire impact or where possible enhance the current baseline situation. In carrying out mitigation, the targeted works will therefore address existing issues where possible. All mitigation measures are set out as appropriate within the above chapters of the ES and are included on the drawings accompanying the application.
3.6	Transport will play an important part in meeting the Government's legally binding carbon targets and other environmental targets. As part of this there is a need to shift to greener technologies and fuels, and to promote lower carbon transport choices. Over the next decade, the biggest reduction in emissions from domestic transport is likely to come from efficiency	Chapter 14 of the ES (TR010039/APP/6.1) considers the impact of the Scheme on climate change and the impact of climate change on the Scheme. No significant adverse effects have been identified at either construction or operational stages. In accordance with the Design Manual for Roads and Bridges (DMRB)

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	improvements in conventional vehicles, specifically cars and vans, driven primarily by EU targets for new vehicle CO2 performance. Electrification of the railway will also support reductions in carbon.	LA 114¹ 'Climate', the Scheme has sought to minimise carbon emissions as far as possible in order to contribute to the UK's net reduction in carbon emissions. Recommendations to further reduce carbon emissions through design considerations and recalculation of carbon emissions at later stages of the design process have also been made. Consideration of how to mitigate effects on climate (i.e. carbon emissions associated with the Scheme) has been fundamental to the design process in accordance with the principles of PAS 2080: Carbon Management in Infrastructure (i.e. baselining, target setting and monitoring). The inclusion of new walking and cycling routes, as described in ES Chapter 12 Population and Human Health (Section 12.9, TR010039/APP/6.1), also aligns to sustainable and integrated transport objectives. These new provisions introduce greener transport options locally.
3.10	The Government's overall vision and approach on road safety is set out in the Strategic Framework for Road Safety. It is a vision in which Britain remains a world leader in road safety; where highway authorities are empowered to take informed decisions within their area; where driver and rider training gives learners the skills they need to be safe on our roads; and where tough measures are taken against the minority of offenders who deliberately choose to drive dangerously. As set out in paragraphs to 4.66, Scheme promoters are expected to take opportunities to improve road safety, including introducing the most modern and effective safety measures where proportionate.	Chapter 5 of the Case for the Scheme (TR010039/APP/7.1) summarises the economic assessment of the Scheme. The Economic Assessment has calculated the accident cost savings in accordance with the Department for Transport's (DfT) online Transport Appraisal Guidance (WebTAG) using the Cost and Benefit to Accidents – Light Touch (COBALT). This assessment forecasts that, over the 60-year assessment period, the Scheme will provide an accident reduction benefit of £10.67million. Over a 60-year timeframe the Scheme's improvements, when compared to the 'without Scheme' scenario, will save a total of 265 casualties and 42 KSI's when compared to the 'without Scheme' scenario. ES Chapter 12 Population and Human Health (TR010039/APP/6.1) also sets out the beneficial effects of the Scheme's WCH route improvements in safety terms.
3.15	The Government is committed to providing people with options to choose sustainable modes and making door-to-door journeys by sustainable means an attractive and convenient option. This is essential to	ES Chapter 12 Population and Human Health (TR010039/APP/6.1) notes that the Scheme would help to promote sustainable modes of transport, by providing improved facilities for walkers and cyclists (see details in response

¹ <https://www.standardsforhighways.co.uk/dmrb/search/87f12e4f-70f8-4eed-8aed-9e9a42e24183>
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	reducing carbon emissions from transport.	to NPS NN paragraph 3.17, below). The inclusion of new walking and cycling routes, as described in Section 4.8 of the Case for the Scheme (TR010039/APP/7.1) and ES Chapter 12 (Section 12.9 (TR010039/APP/6.1)), align to sustainable and integrated transport objectives. These new provisions introduce greener transport options locally. See also the response to NPS NN paragraph 3.2 and 3.17.
3.17	There is a direct role for the national road network to play in helping pedestrians and cyclists. The Government expects applicants to use reasonable endeavors to address the needs of cyclists and pedestrians in the design of new schemes. The Government also expects applicants to identify opportunities to invest in infrastructure in locations where the national road network severs communities and acts as a barrier to cycling and walking, by correcting historic problems, retrofitting the latest solutions and ensuring that it is easy and safe for cyclists to use junctions.	The Scheme will reduce the need to close and divert footways, PRow and cycle facilities but where a closure of a WCH route is required, safe and appropriate alternative routes will be provided to ensure access is maintained during construction. Improved WCH facilities will be provided as follows: • new crossings and signage for cyclists at the A47/A1 western roundabout replacing the off-road facilities at the two existing A47/A1 roundabouts, allowing connections between the existing A47 to the west of A1 and the proposed on-road route cycle route along Old North Road and Peterborough Road within Wansford leading to the all-user permissive route passing beneath the A1. The crossings will also facilitate access to the existing underpass under the A47 • a continuation of the all-user permissive route as far as the proposed new access for Sacrewell Farm then becoming a shared footway/cycleway to the point where the upgraded access road connects with the new A47 alignment. This will replace a section of permissive footpath Wansford Annual Maintenance 113 that passes in front of the pumping station • a new all user route, including bridleway, adjacent to the new access road for Sacrewell Farm passing under the A47 via a new underbridge avoiding an at-grade crossing of the A47. This replaces a section of permissive footpath Wansford Hereward Way Permissive 3 and permissive footpath Wansford Hereward Way Permissive 2 • a new 61m east to west footway/cycleway from the petrol filling station, at where the route joins the old alignment of the A47 connecting to

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		footpath Wansford 4 and the pedestrian and cyclist underpass via the disused railway at Sutton Heath Road, replacing a 31m section of footpath (Wansford 4) which will be lost to the Scheme • a new underpass suitable for use by pedestrians and cyclists will be provided allowing a connection between the proposed footway/cycleway on the southern side of the new A47 alignment and the section of Sutton Heath Road which will become a cul-de-sac as a result of the proposed scheme. The proposed underpass will utilise the disused railway alignment that is in a cutting at this point. Signage will be provided on Sutton Heath Road to direct pedestrians and cyclists to the underpass allowing them to pass beneath the new A47 alignment. • a shared footway/cycleway on the old alignment of the A47, that will be closed to traffic, linking the proposed underpass and the point where the new side road linking to Peterborough Road (Ailsworth) is to be provided • a shared footway/cycleway on the section of The Drift that will be severed by the Scheme to a point where the Drift is stopped up. The route from The Drift will then continue as an on-road route to allow cyclists to connect with bridleway Sutton 3 to the south east • a shared footway/cycleway along the southern side of the new side road alignment linking the new roundabout on the A47 and Peterborough Road (at Ailsworth) and utilising the old alignment of the A47. At the Peterborough Road/Nene Way junction, a crossing and transitions will also be provided allowing cyclists to return to the carriageway on Peterborough Road to the east into Ailsworth.
3.19	The Government is committed to creating a more accessible and inclusive transport network that provides a range of opportunities and choices for people to connect with jobs, services and friends and family.	The key objectives of the Scheme are set out and considered in the Case for the Scheme (Section 3.6 and Table 3.1) TR010039/APP/7.1)). In relation to accessibility and inclusivity the A47 to the west provides strategic road access from the East to the Midlands and North and plays a vital role in supporting the economy in this area. The Scheme has considered local communities and access to the road network, providing a safer route between communities for cyclists, pedestrians, equestrians and vulnerable users.

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3.20	The Government's strategy for improving accessibility for disabled people is set out in Transport for Everyone: an action plan to improve accessibility for all. In particular: The Government will continue to work to ensure that the bus and train fleets comply with modern access standards by 2020, and to improve rail station access for passengers with reduced mobility. The private car will continue to play an important role, providing disabled people with independence where other forms of transport are not accessible or available. The Government expects applicants to improve access, wherever possible, on and around the national networks by designing and delivering Schemes that take account of the accessibility requirements of all those who use, or are affected by, national networks infrastructure, including disabled users. All reasonable opportunities to deliver improvements in accessibility on and to the existing national road network should also be taken wherever appropriate.	The Highways England design standards and Scheme specific details are compliant with current national legislation set out under the Equality Act 2010 and associated Public Sector Equality Duty (PSED). It supports Highways England in meeting its statutory requirements to support good decision making and to ensure that the Scheme meets the needs of all users of the road network and of local communities, in particular those groups covered under the Equality Act 2010. An Equality Impact Assessment (EqIA) (TR010039/APP7.7) has been undertaken and provides an analysis of the proposals for the A47 Wansford to Sutton. Based on the conclusions of the EQiA and an understanding of the EDIT results, the assessment concludes that the Scheme would have no significant impact on people within the protected characteristic groups. See also the response to NPS NN paragraph 3.19. One of the Scheme objectives is to provide a safer route between communities for WCH and vulnerable users of the network. This includes new walking infrastructure and re-using part of the existing A47 for these purposes. There will however be some residual significant impacts in terms of: - increased journey length to Lower Lodge Farm on Upton Road; - temporary and moderate adverse effect on agricultural Holdings 1, 3 and 5 due to the removal of land for road construction purposes (ES Chapter 12 Population and Human Health (TR010039/APP/6.3)) - the permanent removal of the cycle facilities at the A47/A1 roundabouts - the removal of A47/Upton Road / Peterborough Road roundabout (cycle movements between Ailsworth and Upton)). There will be an overall beneficial impact in terms of severance as part of the qualitative social and distributional impact assessment. Overall, the impact is moderate beneficial due to the elderly and other vulnerable groups being able to access key amenities, such as hospitals, GP surgeries and places of worship more safely and easily with reduced walking times.

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3.21	Applicants are reminded of their duty to promote equality and to consider the needs of disabled people as part of their normal practice. Applicants are expected to comply with any obligations under the Equalities Act 2010	See the response to NPS NN paragraphs 3.19 and 3.20.
3.22	Severance can be a problem in some locations. Where appropriate applicants should seek to deliver improvements that reduce community severance and improve accessibility.	ES Chapter 12 Population and Human Health (TR010039/APP/6.1) describes the assessment of severance in terms of separation of communities from assets and areas of community land, alterations to private properties (including their access) and severance of walker, cyclist and horse-rider routes. The existing A47 traffic volumes already create severance and accessibility issues for local communities due to congestion and safety risks joining or crossing the A47. The Scheme has been designed to manage the impacts of severance it may cause and relieve existing severance issues where possible. Section 12.10 of ES Chapter 12 (TR010039/APP/6.1) sets out where severance will occur, mitigation and the residual effects. These are detailed in the response to NPS NN paragraph 3.2 above. Paragraph 1.2 of the NPS NN acknowledges that some schemes will unavoidably result in limited adverse impacts but that these should not outweigh the positive benefits. The residual impacts of this Scheme, following mitigation, do not outweigh its positive overall benefits. The residential village of Upton is located beyond the DCO boundary, however it has been considered as part of the assessments as journey length changes are predicted to residents of this village. The main vehicular access and egress to the A47 for residents of Upton and for large farm equipment and lorries to farm infrastructure would be a single track lane between Upton and Langley Bush Road. Access to residential properties on Church Walk in Upton would be altered as a result of the Scheme. Due to the stopping up of Upton Road onto the A47, those accessing the A47 from these residential properties would be required to travel west onto Langley Bush Road, then south on the proposed link road from Sutton Health Road. There are 12 residential properties located on Church Walk which would experience a journey length

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		increase of between 0.9km (the property located to the west of Church Walk) and 1.1km (the property located to the east of Church Walk). Chapter 12 Population and Human Health of the ES (TR010039/APP/6.1) assesses the effect as Slight adverse and therefore not significant in EIA terms. There are also potential moderate adverse effects at on Lower Lodge Farm, on Upton Road due to an increase in a journey length increase of 2.9km, and slight adverse effects at one local business due to a journey length increase of 0.8km. Table 7-12 of the Transport Assessment (TR010039/APP/7.3) shows the total two-way traffic flow into Upton village on Upton Road (by the junction with the A47) and Main Road (by the junction with Langley Bush Road). The table shows the change in the number of trips on these roads in the different forecast scenarios. The closure of Upton Road diverts traffic on to Upton Drift (also known as Main Road). However, the overall level of traffic approximately remains the same. The relatively small increase in peak hour traffic on Upton Drift has no adverse impacts on the operation of the Upton Drift / Langley Bush Road junction. The Scheme will result in the access and egress to the A47 for residents of Upton and for large farm equipment and lorries being the currently narrow, single track lane between Upton and Langley Bush Road. This road is already used by large farm equipment and general traffic. Although there will be only a relatively small increase in traffic, the design has been amended to include passing places of a size suitable for large vehicles and some limited widening to ensure a minimum carriageway width of 3.5m. It is considered that the proposals included within the Scheme are proportionate to the effects that will be experienced. The Scheme does therefore result in limited localised adverse impacts but these do not outweigh the positive benefits of the Scheme.

2.3 Table 3: Compliance with NPS NN Chapter 4

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4.3 (General principles of assessment)	In considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account: - its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long term or wider benefits - its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.	The Scheme offers an effective solution to the congestion on the A47. It will remove a long-standing bottleneck for road users, helping to create a high performing dual carriageway route, supporting the local and regional economic growth. The Case for the Scheme (TR010039/APP/7.1) details the Scheme benefits, the need for the Scheme, its development and the alternative options considered. It also sets out the long-term justification in transport and economic terms and how the Scheme satisfies national, regional and local planning, transport and economic policy. Environmental benefits and impacts are considered in Chapters 5 to 14 of the ES (TR010039/APP/6.1) while Chapter 15 considers any cumulative effects of the Scheme together with proposed and committed developments over the longer term. The response to Paragraph 3.2 of the NPS NN above summarises the findings of the ES in relation to residual impacts of significance. In terms of Cumulative Impact, ES Chapter 15 as a single project, the Scheme is unlikely to result in any significant cumulative effects during construction or operation. In combination with other developments within the ZOI, no significant cumulative effects are anticipated on receptors identified in the ES. (TR010039/APP/6.1) Design, mitigation and enhancement measures to avoid, reduce or compensate are also reported in the ES and the EMP (TR010039/APP/7.5).
4.4	In this context, environmental, safety, social and economic benefits and adverse impacts, should be considered at national, regional and local levels. These may be identified in this NPS, or elsewhere.	The ES (TR010039/APP/6.1) reports on the EIA, which considers the potential environmental effects of the Scheme at national, regional and local levels.

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		The TA (TR010039/APP/7.3) and Section 4: Transport Assessment of the Case for Scheme (TR010039/APP/7.1) consider the transport effects of the Scheme on the strategic and local highway network with respect to traffic congestion, road safety and local sustainable modes of transport. The economic benefits of the Scheme are summarised within Section 5 of the Case for the Scheme (TR010039/APP/7.1) while Chapter 6 considers the national, regional and local planning, transport and economic policy context.
4.5	Applications for road and rail projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail projects. The business case will normally be developed based on the Department's Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. It is expected that NSIP schemes brought forward through the development consent order process by virtue of Section 35 of the Planning Act 2008, should also meet this requirement.	Section 5 of the Case for the Scheme (TR010039/APP/7.1) summarises the economic assessment of the Scheme, presenting the anticipated economic benefits and dis-benefits. After accounting for delays associated with construction and maintenance, taking into account monetised journey time reliability and the wider economic benefits, the combined monetised value of benefits of the Scheme is forecast to be £120.19 million. The assessment has used the Transport Appraisal Guidance (TAG) Databook (May 2019).
4.6	Applications for road and rail projects should usually be supported by a local transport model to provide sufficiently accurate detail of the impacts of a project. The modelling will usually include national level factors around the key drivers of transport demand such as economic growth, demographic change, travel costs and labour market participation, as well as local factors. The Examining Authority and the Secretary of State do not need to be concerned with the national methodology and national assumptions around the key drivers of transport demand. We do encourage an	The modelling assessment comprises of a strategic model. The model utilised for the assessment of the scheme is called the Wansford Traffic Model (WTM). The base model, utilised for PCF stage 3, was developed in line with the DfT's Transport Appraisal Guidance (TAG). A local VISSIM model, including the Wansford village, has been utilised to assess the Scheme's operational performance in the forecast year scenarios. The traffic forecasts are dependent on household and employment growth. The local authority forecasts on development growth are derived

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	assessment of the benefits and costs of schemes under high and low growth scenarios, in addition to the core case. The modelling should be proportionate to the scale of the scheme and include appropriate sensitivity analysis to consider the impact of uncertainty on project impacts.	from the uncertainty log which details the local authority development schemes in regions which are both nearby and significant to the model. A core scenario is stated which represents the most unbiased and realistic set of assumptions which is a robust and evidence-based basis for decision-making. The forecasting approach involves creating initial reference case travel demand forecasts which reflect changes in car ownership, population, employment and other demographic and economic factors. However, traffic growth resulting from other sources, such as changes in generalised costs due to traffic conditions, are not included in the reference case forecasts. These impacts are evaluated through a variable demand model (VDM). Based on this approach VDM is applied to derive the demand impacts of both the Do-Minimum (DM) as well as the Do-Something (DS)). The Do-Minimum represents a without Scheme scenario, it includes all the changes unrelated to the Scheme which are considered more than likely to be in place prior to the respective future year. The Do-Something scenario includes the Scheme. Together these models have been used to evaluate current and future conditions along the A47 single carriageway section and the immediate surrounding road network. The strategic model has been used to provide the initial assessment of any strategic implications of the Scheme, as well as the basis for forecasting future year traffic demand matrices. The purpose of the local VISSIM model is to examine the operational performance of the Scheme at the A1/A47 western roundabout as well as the local roads in Wansford village. Details are provided in the TA Section 6 Assessment Methodology (TR010039/APP/7.3) and the results are summarised in the Case for the Scheme Chapter 4 Transport Case for the Scheme (TR010039/APP/7.1). Section 5 of the Case for the Scheme (TR010039/APP/7.1) presents a summary of the economic assessment of the Scheme including any anticipated benefits and dis-benefits.

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		See also the response to NPS NN paragraph 2.2 above.
4.9	The Examining Authority should only recommend, and the Secretary of State should only impose, requirements in relation to a development consent, that are necessary, relevant to planning, relevant to the development to be consented, enforceable, precise, and reasonable in all other respects. Guidance on the use of planning conditions or any successor to it, should be taken into account where requirements are proposed.	The Draft Development Consent Order (DCO) (TR010039/APP/3.1) includes the necessary, relevant, enforceable, precise and reasonable proposed Requirements which take into account guidance on the use of planning conditions. The Explanatory Memorandum (TR010039/APP/3.2) explains the purpose and effect of each provision in the Draft DCO, including the requirements.
4.10	Planning obligations should only be sought where they are necessary to make the development acceptable in planning terms, directly related to the proposed development and fairly and reasonably related in scale and kind to the development.	It is not anticipated that a planning obligation is needed.
4.12	In considering applications for linear infrastructure, decision-makers will need to bear in mind the specific conditions under which such developments must be designed. The generic impacts section of this NPS has been written to take these differences into account.	The Scheme has been assessed against the generic impacts as listed in the NPS NN and these assessments are detailed within these Accordance Tables and in the Case for the Scheme (TR010039/APP/7.1).
4.13	This NPS does not identify locations at which development of the road and rail networks should be brought forward. However, the road and rail networks provide access for people, business and goods between places and so the location of development will usually be determined by economic activity and population and the location of existing transport networks.	The Scheme forms part of a package of proposals for the A47 corridor to achieve a modern standard dual carriageway and improve the vital SRN connection between Peterborough, Kings Lynn Norwich and Great Yarmouth. Congestion, delays and unreliable journey times caused by inefficient transport infrastructure have a restrictive impact on the economy and in this regard Norwich, Cambridge and Peterborough are among the fastest growing cities in the country. The Scheme will upgrade the existing A47 between Wansford and Sutton from single carriageway to a modern, higher performing dual carriageway. The single carriageway acts as a bottleneck resulting in long and unreliable journey times. The new dual carriageway will improve the traffic flow, reduce journey times on the route and increase the route safety and resilience. The Scheme is also intended to support economic growth by making journeys safer and more reliable as presented in this

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		NPS NN paragraph 2.2.
4.15	All proposals for projects that are subject to the European Union's Environmental Impact Assessment Directive and are likely to have significant effects on the environment, must be accompanied by an environmental statement (ES), describing the aspects of the environment likely to be significantly affected by the project. The Directive specifically requires an environmental impact assessment to identify, describe and assess effects on human beings, fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage, and the interaction between them. Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 sets out the information that should be included in the environmental statement including a description of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project, and also the measures envisaged for avoiding or mitigating significant adverse effects. Further guidance can be found in the online planning portal... In this NPS, the terms 'effects', 'impacts' or 'benefits' should accordingly be understood to mean likely significant effects, impacts or benefits.	An ES (TR010039/APP/6.1) has been prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The ES presents a description of the Scheme, the likely significant environmental effects, the measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects. The scope of the ES complies with the EIA Scoping Opinion (TR010039/APP/6.6). ES Chapter 4 Environmental Assessment Methodology (TR010039/APP/6.1) sets out the approach taken to preparing the EIA.
4.16	When considering significant cumulative effects, any environmental statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been granted, as well as those already in existence).	ES Chapter 15 Cumulative Effects Assessment (TR010039/APP/6.1) provides an assessment of the likely significant effects of the Scheme in combination with other past, present and reasonably foreseeable development, as well as impact interactions. This assessment has followed the methodology in Planning Inspectorate Advice Note Seventeen. This chapter identifies the developments that have been considered in the cumulative assessment. Past and present development is considered as part of the baseline and, in some cases, reflects the sensitivity of the receptors assessed. The developments considered in the assessment include those recommended for inclusion by the local planning

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		authorities. As a single project, the Scheme is unlikely to result in any significant cumulative effects during construction or operation. In combination with other developments within the ZOI, no significant cumulative effects are anticipated on receptors identified in this ES.
4.17	The Examining Authority should consider how significant cumulative effects and the interrelationship between effects might as a whole affect the environment, even though they may be acceptable when considered on an individual basis with mitigation measures in place.	See response to NPS NN paragraph 4.16 above.
4.18	In some instances, it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.	The Scheme design is described in ES Chapter 2: The Proposed Scheme (TR010039/APP/6.1) and details are shown on the Engineering Drawings and Sections (TR010039/APP/2.5) and General Arrangement Plans (TR010039/APP/2.6). At the DCO application stage the Scheme is at a preliminary design stage. The detailed design stage converts the preliminary design into detailed design and build construction drawings for use by the build Contractor. At this stage the preliminary design will be refined and informed by additional investigations, such as targeted, more accurate topographical surveys. However, any design refinement would be controlled by the following factors: • The Draft DCO (TR010039/APP/3.1) which contains powers of lateral and vertical deviation as shown on the Works Plans (TR010039/APP/2.3). • The limits of deviation as described in the Draft DCO (TR010039/APP/3.1) and the Explanatory Memorandum (TR010039/APP/3.2). • The approach to the assessment of the limits of deviation in the EIA as set out in ES Chapter 2 The Proposed Scheme (TR010039/APP/6.1).
4.19	Where some details are still to be finalised, applicants are advised to set out in the environmental statement, to the	See response to NPS NN paragraph 4.18 above.

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	best of their knowledge, what the maximum extent of the proposed development may be (for example in terms of site area) and assess the potential adverse effects which the project could have to ensure that the impacts of the project as it may be constructed have been properly assessed.	A reasonable worst-case assumption has been used throughout the EIA process.
4.20	Should the Secretary of State decide to grant development consent for an application where details are still to be finalised, this will need to be reflected in appropriate development consent requirements in the development consent order. If development consent is granted for a proposal and at a later stage the applicant wishes for technical or commercial reasons to construct it in such a way that it is outside the terms of what has been consented, for example because its extent will be greater than has been provided for in terms of the consent, it will be necessary to apply for a change to be made to the development consent.	The draft Requirements set out in Schedule 2 to the Draft DCO (TR010039/APP/3.1) make provision for the detailed design of the Scheme in general accordance with the Works Plans (TR010039/APP/2.3), Engineering Drawings and Sections (TR010039/APP/2.5) and the General Arrangement Plans (TR010039/APP/2.6), subject to any variation agreed in writing by the Secretary of State on the basis that the changes would not give rise to any materially new or materially worse adverse environmental effects in comparison with those reported in the ES (TR010039/APP/6.1).
4.21	In cases where the EIA Directive does not apply to a project, and an environmental statement is not therefore required, the applicant should instead provide information proportionate to the project on the likely environmental, social and economic effects	Not applicable. The EIA Directive and therefore the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 apply to the Scheme.
4.22	Prior to granting a Development Consent Order, the Secretary of State must, under the Habitats Regulations, consider whether it is possible that the project could have a significant effect on the objectives of a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects. Applicants should also refer to paragraphs 5.20 to 5.38 of this national policy statement on biodiversity and geological conservation and to paragraphs 5.3 to 5.15 on air quality. The applicant should seek the advice of Natural England and, where appropriate, for cross-boundary impacts, Natural Resources Wales and Scottish Natural Heritage to ensure that impacts on European sites in Wales and Scotland are adequately considered.	A Report to Inform Habitat Regulations Assessment (TR010039/APP/6.9) has been produced and concludes that there are no reasonably foreseeable significant effects on the Nene Washes SAC, SPA and Ramsar as a result of the Scheme during construction or operation. It has been agreed with the Natural England Lead Advisor for the Norfolk and Suffolk Team that, as the Assessment of Implications on European Sites report produced in 2017 was preliminary and based on information available to date, the screening exercise should be updated and reviewed as the Scheme progresses. Consultation with Natural England is ongoing and any comments and recommendations will be made available to the ExA.

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4.23	Applicants are required to provide sufficient information with their applications for development consent to enable the Secretary of State to carry out an Appropriate Assessment if required. This information should include details of any measures that are proposed to minimise or avoid any likely significant effects on a European site. The information provided may also assist the Secretary of State in concluding that an appropriate assessment is not required because significant effects on European sites are sufficiently unlikely that they can be excluded.	See comments in response to NPS NN paragraph 4.22.
4.26	Applicants should comply with all legal requirements and any policy requirements set out in this NPS on the assessment of alternatives. In particular: The EIA Directive requires projects with significant environmental effects to include an outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects. There may also be other specific legal requirements for the consideration of alternatives, for example, under the Habitats and Water Framework Directives. There may also be policy requirements in this NPS, for example the flood risk sequential test and the assessment of alternatives for developments in National Parks, the Broads and Areas of Outstanding Natural Beauty (AONB).	ES Chapter 3 Assessment of Alternatives (TR010039/APP/6.1) summarises the main Scheme alternatives that have been considered, sets out the assessment methodology, reasonable alternatives studied and the justification for the chosen option. The potential significant effects on the environment were taken into account when assessing options. Ten potential options were developed. These were assessed to identify their performance against environmental, engineering, transportation and economic criteria so that they could be compared and contrasted. Three of the 10 options were taken forward for more detailed assessment and The preferred Scheme was identified, and subsequently amended following consultation, as the best option to meet the defined need and objectives, including the delivery of a comprehensive set of benefits.
4.27	All projects should be subject to an options appraisal. The appraisal should consider viable modal alternatives and may also consider other options (in light of the paragraphs 3.23 to 3.27 of this NPS). Where projects have been subject to full options appraisal in achieving their status within Road or Rail Investment Strategies or other appropriate policies or investment plans, option testing need not be considered by the examining authority or the decision maker. For national	See comments in response to NPS NN paragraph 4.26. The Scheme has been subject to a full options appraisal process as described in the Case for the Scheme (Section 2 Scheme Development and options Considered (TR010039/APP/7.1)) and ES Chapter 3 Consideration of Alternatives (TR010039/APP/6.1) The initial feasibility studies and options appraisal using criteria from the

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	road and rail schemes, proportionate option consideration of alternatives will have been undertaken as part of the investment decision making process. It is not necessary for the Examining Authority and the decision maker to reconsider this process, but they should be satisfied that this assessment has been undertaken.	DfT's Early Assessment and Sifting Tool resulted in the Schemes inclusion in the Government's Road Investment Strategy for 2015-2020 (RIS1). The Scheme has also been included in RIS2 for 2020-2025.
4.28-4.29	Applicants should include design as an integral consideration from the outset of a proposal. Visual appearance should be a key factor in considering the design of new infrastructure, as well as functionality, fitness for purpose, sustainability and cost. Applying "good design" to national network projects should therefore produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible.	See comments in response to NPS NN paragraphs 4.26 and 4.27 above. The Scheme Design Report (Chapter 3 Design Principles, Objectives and Constraints (TR010039/APP/7.4)) explains the further evolution of the design and the measures incorporated into the Scheme.
4.31	A good design should meet the principal objectives of the scheme by eliminating or substantially mitigating the identified problems by improving operational conditions and simultaneously minimising adverse impacts. It should also mitigate any existing adverse impacts wherever possible, for example, in relation to safety or the environment. A good design will also be one that sustains the improvements to operational efficiency for as many years as is practicable, taking into account capital cost, economics and environmental impacts.	See response to NPS NN paragraphs 4.26 - 4.29. The design principles and objectives of the Scheme are considered in the Scheme Design Report - Section 3 Design Principles, Objectives and Constraints (TR010039/APP/7.4). This explains that there are 10 principles of good design which should be implemented by a scheme, as identified within Highways England's Strategic Design Panel Progress Report 3² Good road design. These cover the principal objectives identified in the NPS. Accordingly, good design: • makes roads safe and useful • is inclusive • makes roads understandable • fills in context • is restrained • is thorough • is environmentally sustainable

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844039/Strategic_Design_Panel_progress_report_3.pdf
Planning Inspectorate Scheme Ref: TR010039
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		• is innovative • is long lasting • is a collaborative process. The Scheme Design Report describes how the Scheme applies the above design principles in order to meet the objectives.
4.33	The applicant should therefore take into account, as far as possible, both functionality (including fitness for purpose and sustainability) and aesthetics (including the scheme's contribution to the quality of the area in which it would be located). Applicants will want to consider the role of technology in delivering new national networks projects. The use of professional, independent advice on the design aspects of a proposal should be considered, to ensure good design principles are embedded into infrastructure proposals.	See response to NPS NN paragraphs 4.29 and 4.31. The design was developed by a professional, independent engineering design consultancy employed by the Applicant. The design has applied industry approved standards and good design principles as summarised in the Scheme Design Report (TR010039/APP/7.3). In terms of aesthetics, the design fits within the built and landscape context and the Scheme is restrained, minimising impact on existing infrastructure and the environment.
4.34	Whilst the applicant may only have limited choice in the physical appearance of some national networks infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting and design measures relative to existing landscape and historical character and function, landscape permeability, landform and vegetation.	See response to NPS NN paragraphs 4.29, 4.31 and 4.33. The Environmental Masterplan (TR010039/APP/6.8) presents the final design and mitigation measures in relation to landscape character, landscape permeability, landform and vegetation and historic character. This has been informed by the technical assessments within the ES (TR010039/APP/6.1) and in collaboration with stakeholders. The following ES chapters (TR010039/APP/6.1) identify design and mitigation measures in relation to landscape and historical character and function, landscape permeability, landform and vegetation: • Chapter 6 Cultural Heritage – Table 6-6 eg. archaeological excavation and recording at Barrow Cemetery; tree removal to open up landscape views at Model Farmhouse and associated replacement planting; historic building recording of the former Wansford Road Railway Station, retaining features where possible and reuse of materials. • Chapter 7: Landscape and Visual Effects – Section 7.9 eg. keeping as close to the route of the existing A47 as possible both

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		in alignment and elevation; utilizing the existing east/west tree belt in the east of the Scheme to provide screening and a buffer with the village of Sutton; minimizing land take in linking to the local road network; new tree and hedgerow planting for screening and integration. Chapter 8: Biodiversity – Tables 8-11 and 8-12 eg. Reduction of habitat loss where possible; best practice for pollution prevention and water management; planting to restore lost habitat – species rich grassland, trees, hedgerows, flood meadow; protection of soil and turf.
4.35	Applicants should be able to demonstrate in their application how the design process was conducted and how the proposed design evolved. Where a number of different designs were considered, applicants should set out the reasons why the favoured choice has been selected....	See response to NPS NN paragraphs 4.26-27.
4.38	Adaptation is therefore necessary to deal with the potential impacts of these changes that are already happening. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.	ES Chapter 14 Climate (TR010039/APP/6.1) considers the Scheme's effect on climate (i.e. increases in carbon emissions) as well as the vulnerability of the Scheme assets to projected changes in climate during operation and construction. The latest UK Climate Projections have been used and the Scheme has been deemed resilient. No significant effects as a result of climate change are anticipated. A qualitative methodology for assessing the vulnerability of Scheme assets to climate change during operation has been produced in line with DMRB Climate guidance LA 114³ and IEMA Climate Change Resilience & Adaptation Guidance (2020)⁴ (see Section 14.4. of ES Chapter 14 Climate (TR010039/APP/6.1)).

³ <https://www.standardsforhighways.co.uk/dmrbs/search/87f12e4f-70f8-4eed-8aed-9e9a42e24183>

⁴ Available to download from <https://www.iema.net/resources/reading-room/2020/06/26/iema-eia-guide-to-climate-change-resilience-and-adaptation-2020>
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		Section 14.9 of Chapter 14, Design Intervention and Mitigation, sets out how, through consultation with the design team, assets of the Scheme (e.g. highways, pavement, and structures) likely to be vulnerable to climate change have adhered to inherent design considerations and standards to account for climate resilience. Opportunities for reducing carbon during construction have been considered at each key design stage and include: reuse of site won and recycled materials; developing a materials management plan; undertaking an appropriate intrusive pavement survey using design to minimize pavement construction; Ecosmart welfare cabins; solar construction lighting, rainwater harvesting and electric site vehicles. Further, aspects of the design contribute towards the provision of green infrastructure, such as creation of permanent mammal crossings; SuDS features including new ponds; wetland habitats within some drainage ponds; and new routes for walkers and cyclists. The drainage design includes capacity for climate change projections. The FRA (ES Appendix 13.1 TR010039/APP/6.2) and ES Chapter 13 (TR010039/APP/6.1) have considered the risk to the Scheme and the risk posed by the Scheme on flooding from all sources. Section 13.10 of ES Chapter 13 shows that with mitigation in place, the Scheme is not expected to give rise to significant adverse residual effects during the construction or operational phases. The development is therefore considered appropriate under the requirements of the NPPF and the NPS NN.
4.40	New national networks infrastructure will be typically long-term investments which will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning location, design, build and operation. Any accompanying environment statement should set out how the proposal will take account of the projected impacts of climate change.	The impacts of the Scheme have been assessed against future climate projections in relation to the choice of location, design build and operation and these have been assessed for the projected design year in the respective ES chapters. Comparison between the increase in Scheme emissions and published UK carbon budgets has been undertaken for approximately 45% of the emissions increase resulting from the Scheme and represents approximately 0.001% of the UK's Fourth, Fifth and Sixth carbon budgets over their respective periods. The remaining increase in carbon emissions is predicted to occur after 2037 (the end of the last currently

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		accepted UK carbon budget). Future carbon budgets are expected to include less emissions across all sectors, working towards the goal of net zero carbon emissions by 2050. This has not precluded efforts to minimise carbon throughout the design and construction of the Scheme, with regular recalculation of carbon emissions and ongoing review of further opportunities to minimise them. The recent UK Government announcement on ending the sales of new petrol and diesel vehicles by 2030 would further reduce the Scheme's end user carbon emissions.
4.41	Where transport infrastructure has safety-critical elements and the design life of the asset is 60 years or greater, the applicant should apply the UK Climate Projections 2009 (UKCP09) high emissions scenario (high impact, low likelihood) against the 2080 projections at the 50% probability level.	All of the ES Chapters have considered the significance of any impacts at a future design year. Chapter 14: Climate of the ES (TR010039/APP/6.1) confirms that UKCP18 projections (the 2018 update to UKCP09) have been used to infer future changes in a range of climate variables that may affect the vulnerability of the Scheme to climate change. The UKCP18 projections used to define the future baseline (against which resilience is assessed) are projections for the 2080s for the East of England region for a high emission scenario.
4.42	The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time and ensure any environment statement that is prepared identifies appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure...	See response to NPS NN paragraphs 4.40-41.
4.44	Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment and consultation with statutory consultation bodies. Any adaptation measures must themselves also be assessed as part of any environmental impact assessment and included in the environment statement, which should set out how and where such measures are proposed to be secured.	See response to NPS NN paragraph 4.38 to 41. The EIA is based on the Environment Agency's latest set of Climate Change projections/measures required during construction, such as avoidance of earthworks during winter months where possible and the provision of appropriate temporary measures from maintaining the site free from flood waters. In addition, a number of adaption measures are embedded into the Scheme to take account of climate change. For example adopting a hierarchical approach to carbon management. The Scheme's vulnerability to climate change is considered in ES Chapter 14. (TR010039/APP/6.1). No significant adverse effects as a

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		result of climate have been identified therefore no monitoring is required. During the design stage, the Design Team were briefed on projected climate changes to ensure that the Scheme would be accordingly resilient. Through consultation with stakeholders, environmental technical specialists and the Design Team, those Scheme assets likely to be vulnerable to climate change have adhered to inherent design considerations and standards to account for climate resilience. Specific design considerations are detailed within the individual ES topic chapters.
4.45	If any proposed adaptation measures themselves give rise to consequential impacts the Secretary of State should consider the impact in relation to the application as a whole and the impacts guidance set out in this part of this NPS (e.g. on flooding, water resources, biodiversity, landscape and coastal change).	The Scheme has been designed to prevent consequential impacts from adaptation measures.
4.46	Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so.	The adaption measures described in Section 14.9 of ES Chapter 14: Climate (TR010039/APP/6.1) at construction stage include reusing and recycling site won materials, developing a materials management plan, , stabilization of soils, minimizing pavement construction, Ecosmart Welfare cabins, solar construction, rainwater harvesting, and electric site vehicles with EV charging on-site, and avoiding the use of conventional on-site power sources (diesel generators).
4.48	Issues relating to discharges or emissions from a proposed project which affect air quality, water quality, land quality and the marine environment, or which include noise and vibration, may be subject to separate regulation under the pollution control framework or other consenting and licensing regimes. Relevant permissions will need to be obtained for any activities within the development that are regulated under those regimes before the activities can be operated.	Details of other regulatory consents to be sought for the Scheme are set out in the Consents and Agreements Position Statement (TR010039/APP/3.3).
4.50 and 4.51	In deciding an application, the Examining Authority and the Secretary of State should focus on 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. They should assess the potential impacts of processes, emissions or discharges to inform decision making, but should work on the assumption that in	The Case for the Scheme Chapter 6 Conformity with Planning Policy and Transport Plans (TR010039/APP/7.1) sets out the need for the Scheme in this location and how it accords with planning policy in terms of its land use acceptability. The impacts of processes, emissions and discharges from the Scheme

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	terms of the control and enforcement, the relevant pollution control regime will be properly applied and enforced. Decisions under the Planning Act should complement but not duplicate those taken under the relevant pollution control regime. These considerations apply in an analogous way to other environmental regulatory regimes, including those on land drainage and flood defence and biodiversity.	are considered throughout the ES (TR010039/APP/6.1). The EMP (TR010039/APP/7.5) sets out the control of processes, emissions and discharges through the construction process.
4.53	When an applicant applies for an Environmental Permit, the relevant regulator (the Environment Agency) requires that the application demonstrates that processes are in place to meet all relevant Environmental Permit requirements...	At this point (i.e. the submission of the Application), the majority of consents and all of the powers required have been included, or addressed, within the Draft DCO (TR010039/APP/3.1) as permitted by various provisions of the 2008 Act. The Consents and Agreements Position Statement (TR010037/APP/3.3) provides a full list of the consents, licences and permits that may be required as part of the Scheme, outwith the powers of the DCO. Examples include: • protected species licences (e.g. great crested newts, bats, water voles) • waste exemptions to ensure waste exemptions for re-use of material on site are in place (if required) • mobile plant licences for crushing operations or site permits if not using a contractor with their own mobile licences • land drainage consent.
4.54	Applicants are encouraged to begin pre-application discussions with the Environment Agency as early as possible. It is however expected that an applicant will have first thought through the requirements as a starting point for discussion. Some consents require a significant amount of preparation; as an example, the Environment Agency suggests that applicants should start work towards submitting the permit application at least 6 months prior to the submission of an application for a Development Consent Order, where they wish to parallel track the applications. This will help ensure that applications take account of all relevant environmental considerations and that the relevant regulators are able to provide timely advice and assurance	The Environment Agency has been consulted throughout the development of the Scheme. The mitigation proposed is consistent with best practice guidelines and the outcome of the assessments undertaken follows DMRB guidelines. Further details can be found in ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1), the Flood Risk Assessment (ES Appendix 13.1 (TR010039/APP/6.3)) and in the Drainage Strategy (ES Appendix 13.2 (TR010039/APP/6.3)). A Statement of Common Ground will be developed with the Environment Agency to record the matters that have been agreed between both parties and to identify any matters where comments still need to be

NPSNN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPSNN)	Compliance with the NPS NN
	to the Examining Authority.	resolved.
4.55	The Secretary of State should be satisfied that development consent can be granted taking full account of environmental impacts. This will require close cooperation with the Environment Agency and/or the pollution control authority, and other relevant bodies, such as the MMO, Natural England, Drainage Boards, and water and sewerage undertakers, to ensure that in the case of potentially polluting developments: - the relevant pollution control authority is satisfied that potential releases can be adequately regulated under the pollution control framework; and - the effects of existing sources of pollution in and around the project are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable, particularly in relation to statutory environmental quality limits.	See response to NPS NN paragraph 4.54. The impacts of the Scheme are considered throughout the ES (TR010039/APP/6.1). The EMP (TR010039/APP/7.5) outlines the control of processes, emissions and discharges through construction of the Scheme. Chapter 15: Assessment of Cumulative Effects of the ES (TR010039/APP/6.1) assesses the cumulative effects arising from the Scheme. No cumulative effects in relation to pollution are predicted.
4.58	It is very important that during the examination of a nationally significant infrastructure project, possible sources of nuisance under section 79(1) of the 1990 Act, and how they may be mitigated or limited are considered by the Examining Authority so they can recommend appropriate requirements that the Secretary of State might include in any subsequent order granting development consent. More information on the consideration of possible sources of nuisance is at paragraphs 5.81-5.89.	Potential sources of nuisance have been considered with regard to proceedings in respect of statutory nuisance and are dealt with in the Statement of Statutory Nuisance (TR010039/APP/6.7) in accordance with section 79(1) of the Environmental Protection Act 1990 and regulation 5(2)(f) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the APFP Regulations 2009).
4.60	New highways developments provide an opportunity to make significant safety improvements. Some developments may have safety as a key objective, but even where safety is not the main driver of a development the opportunity should be taken to improve safety, including introducing the most modern and effective safety measures where proportionate. Highway developments can potentially generate significant accident reduction benefits when they are well designed.	The Scheme has safety as a key objective. Section 4 of the Case for Scheme (TR010039/APP/7.1) summarises the analysis of accidents and concludes overall that the Scheme would have a beneficial impact in terms of reducing accidents. The assessment states that over a 60-year timeframe the improvements will save a total of 265 casualties and 42 KSIs (killed or seriously injured). This translates to a monetized saving of £10.67m.
4.61	The applicant should undertake an objective assessment of	Section 7.12 of the TA (TR010039/APP/7.3) provides an assessment of

NPSNN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPSNN)	Compliance with the NPS NN
	the impact of the proposed development on safety including the impact of any mitigation measures. This should use the methodology outlined in the guidance from DfT (WebTAG) and from the Highways Agency.	the overall impact of the Scheme on road safety, in accordance with WebTAG ⁵ and Highways England guidance.
4.62	They should also put in place arrangements for undertaking the road safety audit process. Road safety audits are a mandatory requirement for all trunk road highway improvement schemes in the UK (including motorways).	The requirements resulting from the road safety audit undertaken at Preliminary Design stage have been incorporated into the Scheme design where appropriate.
4.64	The applicant should be able to demonstrate that their scheme is consistent with the Highways Agency's Safety Framework for the Strategic Road Network and with the national Strategic Framework for Road Safety. Applicants will wish to show that they have taken all steps that are reasonably required to: • minimise the risk of death and injury arising from their development; • contribute to an overall reduction in road casualties; • contribute to an overall reduction in the number of unplanned incidents; and • contribute to improvements in road safety for walkers and cyclists.	See comments in response to NPS NN paragraph 4.60. Measures to minimise the risk of death and injury arising from the construction of the Scheme are specified within the EMP (TR010039/APP/7.5). The Scheme has prioritised safety in design and is modelled to decrease the overall number of accidents on the road network from by creating a high-quality dual carriageway, with the provision of new cycling and walking infrastructure, providing safety improvements for walkers, cyclists and vulnerable users. The Scheme is therefore consistent with the Highways Agency's Safety Framework for the Strategic Road Network and with the national Strategic Framework for Road Safety. Further details on the accident analysis and forecast Scheme benefits are included in Section 4: Transport Overview in the Case for the Scheme (TR010039/APP/7.1).
4.65	They will also wish to demonstrate that: • they have considered the safety implications of their project from the outset; and • they are putting in place rigorous processes for monitoring and evaluating safety.	See comments in response to NPS NN paragraphs 4.60 and 4.64. Safety has been taken into account through the consideration of alternatives, and the design evolution of the Scheme as illustrated throughout Sections 2 and 3 of the Case for the Scheme (TR010039/APP/7.1). The outline Traffic Management Plan (TR010039/APP/7.6) refers to

⁵ DfT WebTAG Unit M1 Section 4.2 : https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/427118/webtag-tag-unit-m1-1-principles-of-modelling-and-forecasting.pdf

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		ongoing safety and monitoring during construction (TR010039/APP/7.6). Section 8 of the TA (TR010039/APP/7.3) details the application of mitigation measures to applied to reduce the severity of any identified adverse transport impacts resulting from the Scheme. Once the Scheme is complete there will be a Road Safety Audit undertaken to assess the safety and inform the operational management of the Scheme.
4.66	The Secretary of State should not grant development consent unless satisfied that all reasonable steps have been taken and will be taken to: • minimise the risk of road casualties arising from the Scheme; and • contribute to an overall improvement in the safety of the Strategic Road Network.	See response to NPS NN paragraphs 4.60-65 above.
4.76 - 4.77	Where national security implications have been identified, the applicant should consult with relevant security experts from CPNI [Centre for the Protection of National Infrastructure] and the Department for Transport, to ensure that physical, procedural and personnel security measures have been adequately considered in the design process and that adequate consideration has been given to the management of security risks. If CPNI and the Department for Transport (as appropriate) are satisfied that security issues have been adequately addressed in the project when the application is submitted, they will provide confirmation of this to the Secretary of State, and the Examining Authority should not need to give any further consideration to the details of the security measures during the examination. The applicant should only include such information in the application as is necessary to enable the Examining Authority to examine the development consent issues and make a properly informed recommendation on the	No national security issues were identified in developing the Scheme and no issues were identified in the responses to the statutory consultation (see the Consultation Report (TR010039/APP/5.1)). There was therefore no requirement to consult security experts at the CPNI or Department for Transport.

NPSNN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPSNN)	Compliance with the NPS NN
	application.	
4.81 - 4.82	As described in the relevant sections of this NPS, where the proposed project has likely significant environmental impacts that would have an effect on human beings, any environmental statement should identify and set out the assessment of any likely significant adverse health impacts. The applicant should identify measures to avoid, reduce or compensate for adverse health impacts as appropriate. These impacts may affect people simultaneously, so the applicant, and the Secretary of State (in determining an application for development consent) should consider the cumulative impact on health.	The Scheme has been subject to EIA, which has considered air quality and noise impacts on sensitive human receptors (including local communities, walkers and cyclists). ES Chapter 5: Air Quality, Chapter 11: Noise and Vibration, and Chapter 12: Population and Human Health (TR010039/APP/6.1) report the impacts and propose appropriate mitigation for the effects of the Scheme's construction and operation on the following human health determinants and health outcomes: • access to healthcare facilities • access to community, recreation and education facilities • existing and predicted levels of air and noise pollution • stress and anxiety • landscape amenity • sources of pollution • safety. The ES finds that there will be no significant impacts on human health as a result of the Scheme construction. During operation, it is not expected that there would be any changes in health outcomes, however there may be some positive health outcomes in terms of noise and accessibility for some receptors.

2.3 Table 4: Compliance with NPS NN Chapter 5

NPS NN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPS NN)	Compliance with the NPS NN
5.6 - 5.9 (Air Quality)	Where the impacts of the project (both on and off-scheme) are likely to have significant air quality effects in relation to meeting EIA requirements and / or affect the UK's ability to comply with the Air Quality Directive, the applicant should undertake an assessment of the impacts of the proposed project as part of the environmental statement. The environmental statement should describe: - existing air quality levels; - forecasts of air quality at the time of opening, assuming that the scheme is not built (the future baseline) and taking account of the impact of the scheme; and - any significant air quality effects, their mitigation and any residual effects, distinguishing between the construction and operation stages and taking account of the impact of road traffic generated by the project. Defra publishes future national projections of air quality based on evidence of future emissions, traffic and vehicle fleet. Projections are updated as the evidence base changes. Applicant's assessment should be consistent with this but may include more detailed modelling to demonstrate local impacts. In addition to information on the likely significant effects of a project in relation to EIA, the Secretary of State must be provided with a judgement on the risk as to whether the project would affect the UK's ability to comply with the Air Quality Directive.	ES Chapter 5 Air Quality (TR010039/APP/6.1) accords with the requirements of NPS NN paragraphs 5.6 to 5.9. The existing air quality levels and future baseline has been assessed, in addition to the future air quality if the Scheme did not proceed. The detailed modelling also utilises Defra projections of air quality which allow for the effects of government initiatives to reduce emissions from motor vehicles and other sources. The results of the air quality assessment (Section 5.8) conclude that there will be no significant effects on air quality at either the construction or operational stage of the Scheme. Accordingly, there will be no significant effects on human health or ecological receptors and no mitigation is required. It is also stated that the Scheme will not affect the UK's ability to comply with the Air Quality Directive.
5.10	The Secretary of State should consider air quality impacts over the wider area likely to be affected, as well as in the near vicinity of the Scheme. In all cases the Secretary of State must take account of relevant statutory air quality	The local and wider study areas for the air quality assessment are defined in ES Chapter 5 Air Quality (Section 5.6 (TR010039/APP/6.1)).

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	thresholds set out in domestic and European legislation. Where a project is likely to lead to a breach of the air quality thresholds, the applicant should work with the relevant authorities to secure appropriate mitigation measures with a view to ensuring so far as possible that those thresholds are not breached.	The air quality assessment has concluded that, during both construction and operation, there are no significant adverse effects as a result of the Scheme for human or ecological receptors. With no significant effects being reported, no mitigation measures have been proposed other than compliance with a dust management plan during construction. The assessment also examines compliance with the EU directive 2008/50/EC. (Section 5.8). There are no exceedances of the NO2 annual mean objective at any of the selected sensitive human receptors in the opening year with and without the Proposed Scheme. Annual mean NO2 concentrations were below the AQO of 40 µg/m3 across all modelled receptors in the DM 2025 and DS 2025 scenarios.
5.11	Air quality considerations are likely to be particularly relevant where schemes are proposed: • within or adjacent to Air Quality Management Areas (AQMA); roads identified as being above Limit Values or nature conservation sites (including Natura 2000 sites and SSSIs, including those outside England); and • where changes are sufficient to bring about the need for a new AQMA or change the size of an existing AQMA; or bring about changes to exceed the Limit Values, or where they may have the potential to impact on nature conservation sites.	ES Chapter 5 Air Quality (TR010039/APP/6.1) states that there are no AQMAs within or adjacent to the Affected Road Network (ARN). The closest is 6km east of the Scheme. The Scheme would not bring about the need for a new AQMA, change the size of an existing AQMA or bring about changes to exceed the Limit Values. Although there are ten designated sites of international or national ecological importance within 2km of, or with a hydrological connection to, the Scheme. See Table 8-4 of ES Chapter 8: Biodiversity (TR010039/APP/6.1). Chapter 5 Air Quality ES states that no significant effects on ecological receptors have been identified as a result of the Scheme.
5.12	The Secretary of State must give air quality considerations substantial weight where, after taking into account mitigation, a project would lead to a significant air quality impact in relation to EIA and / or where they lead to a deterioration in air quality in a zone/agglomeration.	Compliance of the Scheme with the EU Air Quality Directive is presented in ES Chapter 5 Air Quality (TR010039/APP/6.1). No significant effects on human health or ecological receptors have been identified as a result of the Scheme.

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5.13	The Secretary of State should refuse consent where, after taking into account mitigation, the air quality impacts of the scheme will: • result in a zone/agglomeration which is currently reported as being compliant with the Air Quality Directive becoming non-compliant; or • affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision.	See response to NPS NN paragraph 5.11. Neither of these scenarios will occur with the Scheme.
5.14 - 5.15	The Secretary of State should consider whether mitigation measures put forward by the applicant are acceptable. A management plan may help codify mitigation at this stage. The proposed mitigation measures should ensure that the net impact of a project does not delay the point at which a zone will meet compliance timescales. Mitigation measures may affect the project design, layout, construction, operation and/or may comprise measures to improve air quality in pollution hotspots beyond the immediate locality of the scheme. Measures could include, but are not limited to, changes to the route of the new scheme, changes to the proximity of vehicles to local receptors in the existing route, physical means including barriers to trap or better disperse emissions, and speed control. The implementation of mitigation measures may require working with partners to support their delivery.	See response to NPS NN paragraph 5.10.
5.16 (Carbon emissions)	The Government has a legally binding framework to cut greenhouse gas emissions by at least 80% by 2050. As stated above, the impact of road development on aggregate levels of emissions is likely to be very small. Emission reductions will be delivered through a system of five-year carbon budgets that set a trajectory to 2050. Carbon budgets and plans will include policies to reduce transport emissions, taking into account the impact of the Government's overall programme of new infrastructure as part of that.	The Government's framework, carbon budget and plans have been taken into consideration within ES Chapter 14 Climate (TR010039/APP/6.1) which reports the total estimated GHG emissions arising from the Scheme for the construction, operation and overall total for the whole lifecycle. The Applicant's Carbon Tool was developed to better manage carbon emissions resulting from the maintenance and improvement of the trunk road network. It contains average embodied carbon figures for various construction materials taken from the Bath Inventory of Carbon and Energy, along with transport, energy and waste factors

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		from Defra 2014 and the Waste Resources Action Programme. Chapter 14: Climate of the ES (TR010039/APP/6.1) identifies the inclusion of an estimate of embodied and transport carbon for the Scheme design and construction.
5.17	Carbon impacts will be considered as part of the appraisal of scheme options (in the business case), prior to the submission of an application for DCO. Where the development is subject to EIA, any Environmental Statement will need to describe an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive. It is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets. However, for road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government's carbon budgets.	See response to NPS NN paragraph 5.16.
5.18	The Government has an overarching national carbon reduction strategy (as set out in the Carbon Plan 2011) which is a credible plan for meeting carbon budgets. It includes a range of non-planning policies which will, subject to the occurrence of the very unlikely event described above, ensure that any carbon increases from road development do not compromise its overall carbon reduction commitments. The Government is legally required to meet this plan. Therefore, any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed Scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.	See response to NPS NN paragraph 5.16. The assessment in ES Chapter 14 Climate (TR010039/APP/6.1) has considered the Scheme's effect on climate (i.e. increases in carbon emissions). A definitive assessment of materiality (and hence significance) against UK carbon budgets for the full appraisal period is not currently possible due to the absence of UK carbon budgets for most of the Scheme's 60-year appraisal period. However, in accordance with DMRB LA 114, this has not precluded efforts to minimise carbon throughout the design and construction of the Scheme, with regular recalculation of carbon emissions and review of further opportunities to minimise them in accordance with DMRB requirements. Monitoring of carbon emissions associated with the construction of the Scheme will be undertaken as per Highways England requirements to meet their key performance indicator "Carbon dioxide equivalents (or CO₂e) in tonnes associated with the Supply Chain's activities" (Highways England 2019).
5.19	Evidence of appropriate mitigation measures (incorporating engineering plans on configuration and layout, and use of materials) in both design and	The application includes an Environmental Management Plan (EMP) (TR010039/APP/7.4). It details the environmental mitigation measures that would be implemented during construction, why they are required,

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	construction should be presented. The Secretary of State will consider the effectiveness of such mitigation measures in order to ensure that, in relation to design and construction, the carbon footprint is not unnecessarily high. The Secretary of State's view of the adequacy of the mitigation measures relating to design and construction will be a material factor in the decision-making process.	who is responsible for delivering them and any ongoing maintenance and monitoring arrangements. Table 3-1 contains the Record of Environmental Actions and Commitments (REAC). In terms of maximising carbon savings during design and construction the Record commits to: • optimizing the reuse of site won and recycled materials • developing a materials management plan • stabilization of soils • survey to minimize new pavement construction • EcoSmart Welfare cabins which harness green energy (Solar and hydrogen cells) • solar construction lighting • rainwater harvesting • electric site vehicles with EV charging on site, avoiding the use of conventional on-site power sources (diesel generators) • monitoring of carbon emissions • review of carbon calculations and climate change when updated projections become available. Annex B of the EMP sets out ten Environmental Management Plans, which will be prepared, detailing measures to be taken in maximizing carbon savings in relation to materials, soil, noise and dust, communications, landscape and ecology, biosecurity, water monitoring, heritage, INNS, operational UXO emergency response. Use of the Applicant's Carbon Tool has allowed consideration of carbon in the design process resulting in the development of a carbon baseline from which further reductions may be made. Monitoring and reporting on carbon emissions associated with energy and fuel use during the construction process will be undertaken.
(Biodiversity and ecological conservation) 5.22 - 5.23	Where the project is subject to EIA the applicant should ensure that the environmental statement clearly sets out any likely significant effects on internationally, nationally and locally designated sites of ecological or geological conservation importance (including those outside England) on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity and that the statement	Paragraph 1.2 of the NPS NN acknowledges that some schemes will unavoidably result in limited adverse impacts but that these should not outweigh the positive. Chapter 8 Biodiversity of the ES (TR010039/APP/6.1) assesses the predicted effects on internationally, nationally and locally designated sites and other habitats and species. Tables 8-11 and 8-12 in Section 8.9 sets out the mitigation measures for the Scheme while Table 8-14

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	considers the full range of potential impacts on ecosystems. The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.	in Section 8.10 details the predicted significance of residual effects on biodiversity resources following the implementation of committed mitigation. There will be a moderate adverse impact on NERC habitats in respect of the permanent loss of hedgerows, deciduous woodland, coastal and floodplain grazing marsh although these habitats are being compensated. Slight beneficial effects were identified on County Wildlife Sites and NERC habitats (lowland meadows, lowland calcareous grassland and pond) during the construction phase. Beneficial effects will arise from the establishment of new areas of species rich grassland, calcareous grassland and wetland habitat and targeted management plans. There are no significant residual impacts at operational stage. Mitigation measures include reduction of habitat loss where possible; best practice for pollution prevention and water management; planting to restore lost habitat – species rich grassland, trees, hedgerows, flood meadow; protection of soil and turf. See Table 1.5 REAC in the EMP (TR010039/APP/7.4).
5.25	As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.	See response to NPS NN paragraphs 5.20 & 5.22 – 5.23.
5.26	In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and	See response to NPS NN paragraphs 5.22 – 5.23. ES Chapter 9 Geology and Soils (TR010039/APP/6.1) states that the construction of the Scheme will result in the permanent and temporary land-take of Grade 2 and Grade 3a land, which is considered to be

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	geological interests within the wider environment.	BMV agricultural land, as well as Grade 3b land. A Soil Management Plan will be developed to help preserve land quality on the temporary land-take areas and to make effective reuse of the soils taken from the areas of permanent land-take. Long-term residual effects on agricultural soils will consist of the permanent loss of agricultural land. Provided that the mitigation and monitoring measures are effective and areas of temporary land-take are restored back to their former condition, the long-term residual effects on agricultural soils would be limited to the permanent loss of agricultural land. The permanent loss of 11 ha of Grade 2 agricultural land is considered to be of moderate magnitude and very large adverse significance, while the permanent land-take of 8.1 ha of Grade 3a and 9.5 ha of Grade 3b agricultural land is considered to be of moderate magnitude and moderate adverse significance of effect. The operational phase of the Scheme results in a reduced potential for harm as the underlying soils are no longer exposed or disturbed effectively breaking potential pathways to receptors and presents no further impacts to agricultural soils.
5.26	In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment.	See response in relation to NPS NN paragraph 5.22 – 5.23 and 5.26 above. Designated sites have been considered fully within ES Chapter 8: Biodiversity (TR010037/APP/6.1). Following mitigation there will be a moderate adverse impact on NERC habitats in respect of the permanent loss of hedgerows, deciduous woodland, lowland calcareous grassland, coastal and floodplain grazing marsh, arable field margins and ponds. Indirect effects on coastal and floodplain grazing lowland fens, lowland meadows, wood-pasture and parkland and rivers from pollution of habitat, air quality, surface water runoff, water level changes, sedimentation and accidental spillages, Slight beneficial effects were identified on County Wildlife Sites and NERC habitats (lowland meadows, lowland calcareous grassland and pond) during the construction phase. Beneficial effects will arise from

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		the establishment of new areas of species rich grassland, calcareous grassland and wetland habitat and targeted management plans.
5.27	The most important sites for biodiversity are those identified through international conventions and European Directives. The Habitats Regulations provide statutory protection for European sites (see also paragraphs 4.22 to 4.25). The National Planning Policy Framework states that the following wildlife sites should have the same protection as European sites: • Potential Special Protection Areas and possible Special Areas of Conservation; • listed or proposed Ramsar sites; and • sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation and listed or proposed Ramsar sites.	As described within ES Chapter 8 Biodiversity (TR010039/APP/6.1) the assessment considers Nene Washes SAC/SPA/Ramsar. No potential or possible future sites have been identified and no sites are required as compensatory measures. Screening has been undertaken to assess the likelihood of the Scheme to result in any likely significant effects upon European Sites (Report to Inform the Habitat Regulations Assessment (TR010039/APP/6.9)). No significant effects have been found and therefore an Appropriate Assessment is not required. Residual significant impacts are sets out in the response to paragraph 5.26 above. There will be no impact on international sites of importance.
5.28-5.29 (Biodiversity-SSSIs)	Many Sites of Special Scientific Interest (SSSIs) are also designated as sites of international importance and will be protected accordingly. Those that are not, or those features of SSSIs not covered by an international designation, should be given a high degree of protection. All National Nature Reserves are notified as SSSIs. Where a proposed development on land within or outside a SSSI is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted. Where an adverse effect on the site's notified special interest features is likely, an exception should be made only where the benefits of the development at this site clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs. The Secretary of State should ensure that the applicant's proposals to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's	As stated in ES Chapter 8 Biodiversity (TR010039/APP/6.1) the assessment considers: • Nene Washes SSSI • Sutton Bog and Heath SSSI • Wansford Pasture SSSI • West Abbot's and Lound Woods SSSI • Old Sulehay Forest SSSI • Southorpe Roughs SSSI • Southorpe Paddock SSSI • Castor Hanglands NNR and SSSI • Bedford Purlieus NNR and SSSI • Castor Flood Meadows SSSI Castor Hanglands NNR and Bedford Purlieus NNR have been considered as they are assessed as a biodiversity resource of national importance. Residual significant impacts are sets out in the response to paragraph 5.26 above. There will be no impact on SSSI's or NNRs.

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	biodiversity or geological interest, are acceptable. Where necessary, requirements and/or planning obligations should be used to ensure these proposals are delivered.	
5.32 (Biodiversity - Irreplaceable habitats including ancient woodland and veteran trees)	Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.	ES Chapter 8 Biodiversity (TR010039/APP/6.1) states that six sites of ancient woodland of national importance exist within 2km of the Scheme upon which there will be indirect impacts during construction and operation through increased air pollution but these will be of neutral effect. To compensate the loss of two oak trees in the CWS, additional oaks would be planted in the woodland planting south of the A47 aimed at reducing visual impacts near Wittering Brook and within the CWS mitigation area.
5.33 (Biodiversity within and around developments)	Development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design. When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments. The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered.	See response to NPS NN paragraph 5.22 – 5.23. Tables 8-11 and 8-12 in ES Chapter 8 Biodiversity (TR010039/APP/6.1) and Table 1.5 REAC in the EMP (TR010039/APP/7.4) describe the ecological mitigation in detail. It includes: • reduction of permanent habitat loss where possible • best practice methods for pollution prevention and water management • implementation of a construction-phase drainage system • best practice mitigation measures as part of Construction Noise and Dust Management Plan which includes ongoing monitoring • new areas of restored species rich grassland/wild flower/flood meadow • habitat management plan • woodland planting • heavy duty ground protection • sumps for sediment control • reuse of soil

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		• gap filling of species poor hedgerows • timing of works to avoid nesting season • bird and owl boxes/nest tubes/nesting banks • temporary noise barrier during construction/quieter plant • directional lighting • pre construction surveys and tool box talks • bat boxes/stone bat house • creation of foraging habitat and bat hops over and under the road • translocation of water vole if required • building of new replacement badger sett.
5.35 (Biodiversity - Protection of other habitats and species)	Other species and habitats have been identified as being of principal importance for the conservation of biodiversity in England and Wales and therefore requiring conservation action. The Secretary of State should ensure that applicants have taken measures to ensure these species and habitats are protected from the adverse effects of development. Where appropriate, requirements or planning obligations may be used in order to deliver this protection. The Secretary of State should refuse consent where harm to the habitats or species and their habitats would result, unless the benefits of the development (including need) clearly outweigh that harm.	ES Chapter 8 Biodiversity (TR010039/APP/6.1) considers all species and habitats of importance and assesses the residual effects following mitigation. Habitats include: ancient woodland, meadows, the River Nene CWS, hedgerows, species-rich grassland, scrub and buildings. Species include badger, bats, breeding birds (including barn and tawney owl), wintering birds, terrestrial and aquatic invertebrates, great crested newts, otter, water vole, hedgehogs, hare, reptiles and their habitats. Tables 8-11 and 8-12 in ES Chapter 8 Biodiversity (TR010039/APP/6.1) and Table 1.5 REAC in the EMP (TR010039/APP/7.4) describe the ecological mitigation and enhancement measures in detail including replacing lost habitat; timing of construction works to avoid the most sensitive times of year; landscape planting and pollution control measures to prevent damage and degradation to habitats. The Environmental Masterplan (TR010039/APP/6.8) identifies areas for habitat creation to mitigate for the loss of Habitats of Principal Importance (HPI). There are no residual impacts of significance in relation to species and habitats that are not compensated for elsewhere in the Scheme. The EMP (TR010039/APP/7.5) sets out good practice environmental measures that would be implemented for biodiversity during construction, why they are required, who is responsible for delivering them and details any ongoing maintenance arrangements. The EMP is secured through Requirement 4 to the Draft DCO

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5.36 (Biodiversity – Mitigation)	Applicants should include appropriate mitigation measures as an integral part of their proposed development, including identifying where and how that: - 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 is minimised (including as a consequence of transport access arrangements); - habitats will, where practicable, be restored after construction works have finished; - developments will be designed and landscaped to provide green corridors and minimise habitat fragmentation where reasonable; - opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals, for example through techniques such as the 'greening' of existing network crossing points, the use of green bridges and the habitat improvement of the network verge.	(TR010039/APP/3.1). See response in relation to NPS NN paragraphs 5.33 and 5.35 above
5.37	The Secretary of State should consider what appropriate requirements should be attached to any consent and/or in any planning obligations entered into in order to ensure that mitigation measures are delivered.	Schedule 2 of the Draft DCO (TR010039/APP/3.1) includes proposed Requirements. No requirement for planning obligations has been identified. The EMP (TR010039/APP/7.5) details the good practice environmental measures that would be implemented for biodiversity during construction, why they are required, who is responsible for delivering them and any ongoing maintenance and monitoring arrangements. The EMP (TR010039/APP/7.5) is secured through Requirement 4 to the Draft DCO (TR010039/APP/3.1).
5.38	The Secretary of State will need to take account of what mitigation measures may have been agreed between the applicant and Natural England and/or the MMO, and whether Natural England and/or the MMO has granted or refused, or intends to grant or refuse, any relevant	Natural England has been consulted with regard to protected species and the applicant acknowledges there is a statutory requirement to secure any protected species licenses as set out in ES Chapter 8 Biodiversity (TR010039/APP/6.1) and the Consents and Agreements Position Statement (TR010039/APP/3.3).

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	licences, including protected species mitigation licences.	A draft Statement of Common Ground will be developed with Natural England to record the matters that have been agreed between both parties and to identify any matters where comments still need to be resolved.
5.42 (Waste management)	The applicant should set out the arrangements that are proposed for managing any waste produced. The arrangements described should include information on the proposed waste recovery and disposal system for all waste generated by the development. The applicant should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that the alternative is the best overall environmental outcome.	Measures for managing waste and materials and information on their implementation, measuring and monitoring are set out in ES Chapter 10 Material Assets and Waste (TR010039/APP/6.1) ES Appendix 10.2 (TR010037/APP/6.3) Outline Site Waste Management Plan (SWMP) has been prepared to demonstrate how waste generated during the construction phase will be minimised and controlled to reduce impacts. Preliminary information included in the Outline SWMP will be updated and used to develop the detailed SWMP.
5.43	The Secretary of State should consider the extent to which the applicant has proposed an effective process that will be followed to ensure effective management of hazardous and non-hazardous waste arising from the construction and operation of the proposed development. The Secretary of State should be satisfied that the process sets out: - any such waste will be properly managed, both onsite and off-site; - the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is or is likely to be, available. Such waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area; and - adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent to disposal, except where an alternative is the most sustainable outcome overall.	See response to NPS NN paragraph 5.42. The EMP (TR010037/APP/7.5) indicates the environmental mitigation measures that would be implemented during construction. The EMP includes the production of a detailed SWMP that includes procedures for the management of hazardous and non-hazardous waste. It also sets out why measures are required, who is responsible for delivering them and any ongoing maintenance and monitoring arrangements. The EMP is secured through Requirement 4 of the Draft DCO (TR010039/APP/3.1). Minimising the production of waste has been considered throughout the design of the Scheme. The Scheme would apply a waste hierarchy in order to move waste management practices as far up the hierarchy as possible, minimising disposal and maximising re-use and recycling. Measures proposed include: - considering the re-use of waste generated on-site before it is transported off-site for re-use or disposal - use of construction, demolition and excavation waste (with treatment) within the Scheme boundary - use of site-won or recycled material assets as opposed to sourcing new materials, i.e. sand and gravel - the adoption of the good practice in construction waste

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		management principles • re-use and recycling of materials offsite where re-use within the Scheme boundary is not possible. • use of material logistics planning to manage responsible local resourcing of material assets minimal ordering of materials, appropriate segregation and storage-site by waste type, to facilitate re-use. A Contaminated Land: Applications in Real Environment (CL:AIRE) Materials Management Plan (MMP) would be implemented to mitigate the risk arising from the re-use of materials. The CL:AIRE process is documented in Section 9 of Chapter 10 Materials and Waste of the ES (TR010039/APP/6.1) and its production is secured through the EMP and Requirement 4 of the Draft DCO (TR010039/APP/3.1).
5.44	Where necessary, the Secretary of State should use requirements or planning obligations to ensure that appropriate measures for waste management are applied.	No requirement for planning obligations has been identified.
5.45	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. The applicant should consult the MoD, CAA, National Air Traffic Services (NATS) and any aerodrome – licensed or otherwise – likely to be affected by the proposed development in preparing an assessment of the proposal on aviation or other defence interests. Any assessment on aviation or other defence interests should include potential impacts during construction and operation of the project upon the operation of CNS infrastructure, flight patterns (both civil and military), other defence assets and aerodrome operational procedures. 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.	Consultation has been undertaken with the relevant bodies (Ministry of Defence, Civil Aviation Authority, National Air Traffic Services and any aerodrome, licensed or otherwise). It is not expected that the Scheme will result in significant effects on any civil or military aviation interests. Further details of the organisations consulted can be found in the Consultation Report, Annex K (TR010039/APP/5.2).

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5.55 - 5.58 (Civil and military aviation and defence interests)	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. The applicant should consult the MoD, CAA, National Air Traffic Services (NATS) and any aerodrome – licensed or otherwise – likely to be affected by the proposed development in preparing an assessment of the proposal on aviation or other defence interests. Any assessment on aviation or other defence interests should include potential impacts during construction and operation of the project upon the operation of CNS infrastructure, flight patterns (both civil and military), other defence assets and aerodrome operational procedures. 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.	See response to NPS NN 5.45
5.59	The Secretary of State should be satisfied that effects on civil and military aviation and other defence assets have been addressed by the applicant and that any necessary assessment of the proposal on aviation or defence interests has been carried out. In particular, it should be satisfied that the proposal has been designed to minimise adverse impacts on the operation and safety of aerodromes and that reasonable mitigation is carried out. It may also be appropriate to expect operators of the aerodrome to consider making reasonable changes to operational procedures. The Secretary of State will have regard to the necessity, acceptability and reasonableness of operational changes to aerodromes, and the risks or harm of such changes when taking decisions. When making such a judgement in the case of military aerodromes, the Secretary of State should have regard to interests of defence and national security.	See response to NPS NN 5.45

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5.62	Where, after reasonable mitigation, operational changes and planning obligations and requirements have been proposed, development consent should not be granted if the Secretary of State considers that: • a development would prevent a licensed aerodrome from maintaining its licence; • the benefits of the proposed development are outweighed by the harm to aerodromes serving business, training or emergency service needs; or • the development would significantly impede or compromise the safe and effective use of defence assets or significantly limit military training.	See response to NPS NN 5.45
5.82 (Dust, odour, artificial light, smoke, steam)	Because of the potential effects of these emissions and in view of the availability of the defence of statutory authority against nuisance claims s.104 of the Planning Act 2008 described previously, it is important that the potential for these impacts is considered by the applicant in their application, by the Examining Authority in examining applications and by the Secretary of State in taking decisions on development consents.	The Statement relating to Statutory Nuisances (TR010039/APP/6.7) summarises the findings of the ES in relation to dust, artificial light, noise from premises or a vehicle/machinery in a street (TR010039/APP/6.1). ES Chapter 5 Air Quality (TR010039/APP/6.1 – Section 5.8-5.9) presents the results of a qualitative assessment of potential dust effects, undertaken in accordance with the Design Manual for Roads and Bridges (DMRB), LA 105 Air Quality and Institute of Air Quality Management (IAQM). The dust risk potential for the project was classified as large due to the nature of the improvements and the receiving environment sensitivity for the project was classed as high due to the presence of receptors within 50m and 100m from construction activities. However, with the recommendation of best practice construction mitigation measures in place, the impact of construction dust is considered highly unlikely to trigger a significant air quality effect. Therefore, in accordance with LA 105, no significant effects on sensitive receptors have been identified at construction stage. At operational stage there will be no significant effects human or ecological receptors. The assessment has been used to inform the best practice mitigation measures in the EMP (TR010039/APP/7.5).

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		ES Chapter 12 Population and Human Health, Section 12.8 (TR010039/APP/6.1) recognises that during construction, there is the potential for residents and members of the communities to be temporarily affected by increases of noise disturbance including vehicle movements such as HGVs and heavy machinery, all of which could increase noise and vibration impacts for residents or members of the community. Temporary noise barriers would help to reduce these impacts. Subject to the use of temporary and permanent noise barriers, construction noise monitoring and mitigation measures, no receptors have been identified to be significantly affected by noise from construction and construction traffic. During operation adverse noise effects off-line may occur due to increases in traffic flows and speeds on other parts of the local road network. In particular at: • PRoW: Footpath 4: Wansford, Peterborough (road entrance to Sacrewell) (significant during daytime) • PRoW: Hereward Way (road entrance to Sacrewell) (significant during daytime) No further significant effects on receptors have been identified within the ES Chapter 11 (Noise and vibration) (TR0010039/APP/6.1). After the implementation of mitigation outlined within the chapter (low-noise road surfacing to be used, hot rolled asphalt) the final operational significance is determined to be not significant. The operational effect of the Scheme on noise and vibration as a determinant of human health is therefore assessed to be neutral. ES Chapter 8 Biodiversity (TR010039/APP/6.1) details that woodland planting has been included in the Environmental Masterplan to reduce the effects of permanent lighting in areas where breeding birds are found. All lighting will be designed with backlight shields and LED bulbs to reduce light spill onto habitats. Lighting will also be directional and positioned sympathetically to minimise light spill and disturbance for sensitive biodiversity resources including foraging bats. There will also be restrictions on night time working. There will be no significant impacts as a result of Scheme lighting. The relevant ES Chapters and the EMP (TR010039/APP/7.5) set out the mitigation measures that would be implemented during

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		construction. These are secured through Requirement 4 to the Draft DCO (TR010039/APP/3.1).
5.83	For nationally significant infrastructure projects of the type covered by this NPS, some impact on amenity for local communities is likely to be unavoidable. Impacts should be kept to a minimum and should be at a level that is acceptable.	ES Chapter 12 Population and Human Health (TR010039/APP/6.1) states that during construction, there are likely to be some effects on local communities and potentially their health in terms of the noise and dust created by construction activities and the visual amenity impact of construction vehicles and compounds. However, with mitigation in place, these are not expected to be significant. The EMP (TR010039/APP/7.5) sets out the mitigation measures that would be implemented during construction.
5.84 - 5.87	Where the development is subject to an Environmental Impact Assessment, the applicant should assess any likely significant effects on amenity from emissions of odour, dust, steam, smoke and artificial light and describe these in the Environmental Statement. In particular, the assessment provided by the applicant should describe: • the type and quantity of emissions; • aspects of the development which may give rise to emissions during construction, operation and decommissioning; • premises or locations that may be affected by the emissions; • effects of the emission on identified premises or locations; and • measures to be employed in preventing or mitigating the emissions. The applicant is advised to consult the relevant local planning authority and, where appropriate, the Environment Agency about the scope and methodology of the assessment. The Secretary of State should be satisfied that all reasonable steps have been taken, and will be taken, to minimise any detrimental impact on amenity from emissions of odour, dust, steam, smoke and artificial light. This includes the impact of light pollution from artificial	See response to NPS NN paragraph 5.82.

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	light on local amenity, intrinsically dark landscapes and nature conservation.	
5.89	The Secretary of State should ensure the applicant has provided sufficient information to show that any necessary mitigation will be put into place. In particular, the Secretary of State should consider whether to require the applicant to abide by a scheme of management and mitigation concerning emissions of odour, dust, steam, smoke, artificial light from the development to reduce any loss to amenity which might arise during the construction and operation of the development. A construction management plan may help codify mitigation.	See response to NPS NN paragraph 5.82.
5.90 (Flood risk)	Climate change over the next few decades is likely to mean milder wetter winters and hotter drier summers in the UK, while sea levels will continue to rise. Within the lifetime of nationally significant infrastructure projects, these factors will lead to increased flood risks in areas susceptible to flooding, and to an increased risk of flooding in some areas which are not currently thought of as being at risk. The applicant, the Examining Authority and the Secretary of State (in taking decisions) should take account of the policy on climate change adaptation in paragraphs 4.36 to 4.47.	See response to NPS NN paragraphs 4.38 and 4.46. The vulnerability of the Scheme to climate change and the resilience of the Scheme to climate change impacts and associated weather effects, including how the Scheme will take account of the projected climate change has been assessed (see ES Chapter 14 Climate (TR010039/APP/6.1) and Appendix 13.1 to the ES Flood Risk Assessment (TR010039/APP/6.3)).
5.91	The National Planning Policy Framework (paragraphs 100 to 104) makes clear that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. But where development is necessary, it should be made safe without increasing flood risk elsewhere. The guidance supporting the National Planning Policy Framework explains that essential transport infrastructure (including 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.	See response to NPS NN paragraph 5.94.
5.92 - 5.93	Applications for projects in the following locations should be accompanied by a flood risk assessment (FRA): Flood Zones 2 and 3, medium and high probability of river and sea flooding;	See response to NPS NN paragraph 5.94.

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	Flood Zone 1 (low probability of river and sea flooding) for projects of 1 hectare or greater, projects which may be subject to other sources of flooding (local watercourses, surface water, groundwater or reservoirs), or where the Environment Agency has notified the local planning authority that there are critical drainage problems. This should identify and assess the risks of all forms of flooding to and from the project and demonstrate how these flood risks will be managed, taking climate change into account.	
5.94	In preparing an FRA the applicant should: - consider the risk of all forms of flooding arising from the project (including in adjacent parts of the United Kingdom), in addition to the risk of flooding to the project, and demonstrate how these risks will be managed and, where relevant, mitigated, so that the development remains safe throughout its lifetime; - take the impacts of climate change into account, clearly stating the development lifetime over which the assessment has been made; - consider the vulnerability of those using the infrastructure including arrangements for safe access and exit; - include the assessment of the remaining (known as 'residual') risk after risk reduction measures have been taken into account and demonstrate that this is acceptable for the particular project; - consider if there is a need to remain operational during a worst-case flood event over the development's lifetime; - provide the evidence for the Secretary of State to apply the Sequential Test and Exception Test, as appropriate.	Design considerations, mitigation measures and residual risks are described in ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1), supported by detailed studies in ES Appendix 13.1 FRA (TR010039/APP/6.3) and ES Appendix 13.2 Drainage Strategy (TR010038/APP/6.3). These documents demonstrate that the Scheme meets the requirements of the NPS NN. ES Appendix 13.1, FRA (TR010039/APP/6.3) states that although the majority of the Scheme is located within Flood Zone 1 – low risk of flooding but crosses three sections of Flood Zone 2 and 3 where the A1 crosses Mill Stream, where the A47 crosses Wittering Brook and immediately to the west of this crossing. In these locations, the A1 and A47 are elevated above the floodplain. The Scheme runs adjacent to Flood Zones 2 and 3 associated with the River Nene. The assessment of flood risk to the Scheme has been undertaken in consultation with the Environment Agency and Peterborough City Council (as LLFA) in 2018, 2020 and 2021. The Flood Risk Assessment is included as Appendix 13.2 to the ES (TR010039/APP/6.3). Only the embankments of the Scheme are considered to be high risk of flooding and not the carriageway or users, which would be classified as low risk due to the carriageway being elevated above Flood Zone 3.

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		Mitigating measures have been proposed to ensure the Scheme does not increase fluvial flood risk. To mitigate for the loss of River Nene floodplain, 560m³ of flood compensation is proposed. The location and specifications of flood compensation was confirmed with the Environment Agency in March 2021. The FRA has assessed fluvial flood risk, surface water flood risk and the risk of flooding from reservoir, sewer or water main infrastructure failure. The highway drainage shall utilise two existing outfalls plus an additional five new outfalls. SuDS features are proposed as part of the drainage strategy to treat and attenuate surface water runoff. Drainage ditches shall be provided at the toe of embankments where possible and existing drainage ditch flow paths shall be retained where possible from the existing drainage network. It is considered that there would be no increase in the risk of flooding (from any source) to or from the Scheme and it therefore meets the requirements of the Exception Test and the flood risk requirements of the NPS NN paragraph 5.94.
5.96	Applicants for projects which may be affected by, or may add to, flood risk are advised to seek sufficiently early pre-application discussions with the Environment Agency, and, where relevant, other flood risk management bodies such as lead local flood authorities, Internal Drainage Boards, sewerage undertakers, highways authorities and reservoir owners and operators. Such discussions can be used to identify the likelihood and possible extent and nature of the flood risk, to help scope the FRA, and identify the information that will be required by the Secretary of State to reach a decision on the application once it has been submitted and examined. If the Environment Agency has concerns about the proposal on flood risk grounds, the applicant is encouraged to discuss these concerns with the Environment Agency and look to agree ways in which the proposal might be amended, or additional information provided, which would satisfy the Environment Agency's	See response to NPS NN paragraph 5.94.

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	concerns, preferably before the application for development consent is submitted.	
5.97	For local flood risk (surface water, groundwater and ordinary watercourse flooding), local flood risk management strategies and surface water management plans provide useful sources of information for consideration in Flood Risk Assessments. Surface water flood issues need to be understood and then account of these issues can be taken, for example flow routes should be clearly identified and managed.	See response to NPS NN paragraph 5.91.
5.98	Where flood risk is a factor in determining an application for development consent, the Secretary of State should be satisfied that, where relevant: - the application is supported by an appropriate FRA; the Sequential Test (see the National Planning Policy Framework) has been applied as part of site selection and, if required, the Exception Test (see the National Planning Policy Framework).	An FRA has been prepared and is provided at ES Appendix 13.1 (TR010039/APP/6.3). NPPF guidance states that a Sequential Test is required for development in Flood Zone 2 or 3 in order to assess other available sites to find out which has the lowest flood risk. Although route options were assessed during Stage 2, the development is an upgrade of a trunk road on the strategic road network it would not be appropriate to assess alternative sites. It is therefore assumed that the Proposed Scheme passes the Sequential Test. The FRA (TR010039/APP/6.3) states that there would be no increase in the risk of flooding (from any source) to or from the Scheme and it therefore meets the requirements of the Exception Test.
5.99	When determining an application, the Secretary of State should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where (informed by a flood risk assessment, following the Sequential Test and, if required, the Exception Test), it can be demonstrated that: - within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and - 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	See response to NPS NN paragraphs 5.94 and 5.98.

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	planning; and priority is given to the use of sustainable drainage systems.	
5.100	For construction work which has drainage implications, approval for the project's drainage system will form part of any development consent issued by the Secretary of State. The Secretary of State will therefore need to be satisfied that the proposed drainage system complies with any National Standards published by Ministers under Paragraph 5(1) of Schedule 3 to the Flood and Water Management Act 2010. In addition, the development consent order, or any associated planning obligations, will need to make provision for the adoption and maintenance of any Sustainable Drainage Systems (SuDS), including any necessary access rights to property. The Secretary of State, should be satisfied that the most appropriate body is being given the responsibility for maintaining any SuDS, taking into account the nature and security of the infrastructure on the proposed site. The responsible body could include, for example, the applicant, the landowner, the relevant local authority, or another body such as the Internal Drainage Board.	ES Appendix 13.2, the Drainage Strategy (TR010039/APP/6.3) details the design standards applied, incorporation of SuDS and proposed maintenance of the drainage of the Scheme. The detailed design for the Scheme drainage will be in accordance with relevant guidance in the DMRB (Highways England, 2019b; 2020a; 2020b), in particular technical standards under the prescribed headings as set out in Appendix B of DMRB CG 502 'The Certification of Drainage Design'; this document outlines the requirements for the certification of drainage design on motorway and all-purpose trunk roads. The Scheme incorporates new drainage systems employing SuDS where appropriate including: • two new outfalls to the River Nene • a new outfall to Wittering Brook • extension of the A1 culvert at the Mill Stream • realignment and extension of the A47 Wansford • compensatory flood storage • drainage ditch interceptors • new attenuation basins, with pollution control devices, to control discharges to local watercourses.
5.112 - 5.115 (Flood risk – mitigation)	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. The surface water drainage arrangements for any project should be such that the volumes and peak flow rates of surface water leaving the site are no greater than the rates prior to the proposed project, unless specific off-site arrangements are made and result in the same net effect. It may be necessary to provide surface water storage and infiltration to limit and reduce both the peak rate of discharge from the site and the total volume discharged from the site. There may be circumstances where it is appropriate for infiltration attenuation storage to be provided outside the project site, if necessary through the use of a planning obligation.	ES Appendix 13.2, the Drainage Strategy (TR010039/APP/6.3) details the volumes and peak flow rates and demonstrates how they would not be increased. It also details the SuDS components that have been incorporated into the design. ES Appendix 13.1, the FRA (TR010039/APP/6.2) states, the Environment Agency 'flood risk from surface water' map indicates that most of the Scheme is at very low risk from surface water flooding. There are areas where the risk of surface water flooding is identified as being low to high, with significant high risk areas being observed up and downstream of the A1 culvert, upstream and to the west of the A47 culvert and where Sutton Heath Road crosses an unnamed ordinary watercourse. See also response to NPS NN paragraphs 5.94 and 5.98.

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	The sequential approach should be applied to the layout and design of the project. Vulnerable uses should be located on parts of the site at lower probability and residual risk of flooding. Applicants should seek opportunities to use open space for multiple purposes such as amenity, wildlife habitat and flood storage uses. Opportunities can be taken to lower flood risk by improving flow routes, flood storage capacity and using SuDS.	
5.117 - 5.118 (Land instability)	Where necessary, land stability should be considered in respect of new development, as set out in the National Planning Policy Framework and supporting planning guidance. Specifically, proposals should be appropriate for the location, including preventing unacceptable risks from land instability. If land stability could be an issue, applicants should seek appropriate technical and environmental expert advice to assess the likely consequences of proposed developments on sites where subsidence, landslides and ground compression is known or suspected. Applicants should liaise with the Coal Authority if necessary. A preliminary assessment of ground instability should be carried out at the earliest possible stage before a detailed application for development consent is prepared. Applicants should ensure that any necessary investigations are undertaken to ascertain that their sites are and will remain stable or can be made so as part of the development. The site needs to be assessed in context of surrounding areas where subsidence, landslides and land compression could threaten the development during its anticipated life or damage neighbouring land or property. This could be in the form of a land stability or slope stability risk assessment report.	A review of the existing geology and soil baseline conditions, consideration of the potential impacts, identification of proportionate mitigation and identification of residual effects caused by the Scheme is set out ES Chapter 9 Geology and Soils (TR010039/APP/6.1). There are no land stability issues relating to the Scheme.
5.124 (The historic environment)	Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets. The absence	ES Chapter 6 Cultural Heritage (TR010039/APP/6.1) describes the criteria used to assess the value of archaeological remains; in DMRB terminology value equates to significance. This chapter identifies how value or significance has been determined for undesignated assets.

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	of designation for such heritage assets does not indicate lower significance.	The assessment has been undertaken in accordance with DMRB LA 106 (Cultural Heritage Assessment) and has considered designated and non-designated heritage assets including: • 201 Listed Buildings • 13 Scheduled Monuments • 246 non-designated assets • 8 Conservation Areas • 14 non-designated historic landscape types in 138 individual parcels. Designated and non-designated heritage assets are listed in ES Appendix 6.1 Cultural Heritage Baseline (TR010039/APP/6.3) together with an assessment of their historical background and context, value, magnitude and significance of impact.
5.125	The Secretary of State should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including 'local listing', or through the nationally significant infrastructure project examination and decision-making process) on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.	ES Chapter 6 Cultural Heritage (TR010039/APP/6.1) reports the potential significant effects on cultural heritage as a result of the Scheme. ES Appendix 6.1 Cultural Heritage Information (TR010039/APP/6.2) provides a detailed discussion of baseline information including assessment of archaeological potential, contribution of setting to value / significance and of the value / significance of all identified heritage assets designated and non-designated.
5.126 - 5.127	Where the development is subject to EIA the applicant should undertake an assessment of any likely significant heritage impacts of the proposed project as part of the Environmental Impact Assessment and describe these in the environmental statement. The applicant should describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant Historic Environment Record should have been consulted and the heritage assets assessed using appropriate expertise. Where a site on which development is proposed includes	ES Chapter 6 Cultural Heritage (TR010039/APP/6.1) and Appendices 6.1 – 6.6 (TR010039/APP/6.3) is an assessment of cultural heritage undertaken by a heritage consultant who holds corporate membership with the Chartered Institute for Archaeologists (ACIfA). The assessment has been undertaken in accordance with DMRB LA 106 (Cultural Heritage Assessment) and has considered designated and non-designated heritage assets including: • 201 Listed Buildings • 13 Scheduled Monuments • 246 non-designated assets • 8 Conservation Areas • 14 non-designated historic landscape types in 138 individual parcels.

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	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.	The level of assessment is proportionate to the importance of each asset and the likely impact of the Scheme, including an assessment of the significance of the impacts on below ground remains, built heritage assets and historic landscapes during the construction and operational phases of the scheme. In addition to the Historic Environment Record, a variety of other sources were consulted to establish the baseline for cultural heritage assessments. These include archival materials, historic mapping, reports of previous investigations within the study area, and site visits, including a geophysical survey and trial trenching to assess the conditions and settings of heritage assets. Further, the Consultation Report Annex N (TR010039/APP/5.2) provides a summary of responses provided by stakeholders such as Historic England, Peterborough City Council, Cambridgeshire County Council and other interested parties and on heritage matters during statutory consultation. Annex L sets out the relevant bodies that were consulted on heritage as part of the consultation, including Historic England. Annex M of the Consultation Report (TR010039/APP/5.2) provides a summary of ongoing engagement with stakeholders post the 2018 statutory consultation.
5.128	In determining applications, the Secretary of State should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development (including by development affecting the setting of a heritage asset), taking account of the available evidence and any necessary expertise from: - relevant information provided with the application and, where applicable, relevant information submitted during examination of the application; - any designation records; - the relevant Historic Environment Record(s), and - similar sources of information; - representations made by interested parties during the examination; and - expert advice, where appropriate, and when the need to understand the significance of the heritage asset demands it.	ES Chapter 6 Cultural Heritage (TR010039/APP/6.1) has assessed all heritage assets and their settings and has found that there will be only one moderate adverse significant effect as a result of the demolition of the former Wansford Road Railway Station. This will be mitigated by historic building and topographical recording, retention of the platform and linesman's hut if possible and reuse of the building materials.

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5.129	In considering the impact of a proposed development on any heritage assets, the Secretary of State should take into account the particular nature of the significance of the heritage asset and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between their conservation and any aspect of the proposal.	ES Appendix 6.1 Cultural Heritage Information (TR010039/APP/6.3) provides a detailed discussion of baseline information including assessment of archaeological potential, contribution of setting to value / significance and of the value / significance of all identified heritage assets designated and non-designated. ES Chapter 6: Cultural Heritage (TR010039/APP/6.1) reports the significance of effects on heritage assets as a result of the Scheme (see Table 6.1). Design measures are proposed to mitigate the significance of effects as far as possible, as described in ES Chapter 6 Cultural Heritage Section 6.6 (TR010039/APP/6.1).
5.130	The Secretary of State should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution that their conservation can make to sustainable communities – including their economic vitality. The Secretary of State should also take into account the desirability of new development making a positive contribution to the character and local distinctiveness of the historic environment. The consideration of design should include scale, height, massing, alignment, materials, use and landscaping (for example, screen planting).	Mitigation has been embedded into the Scheme design to make a positive contribution to the conservation of heritage assets. Landscaping and planting have been incorporated into the design of the Scheme to reduce adverse effects on the setting of cultural heritage as described within ES Chapter 6 Cultural Heritage Section 6.8 (TR010039/APP/6.1).
5.131	When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset's conservation. The more important the asset, the greater the weight should be. Once lost, heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Given that heritage assets are irreplaceable, harm or loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II Listed Building or a grade II Registered Park or Garden should be exceptional. Substantial harm to or loss of designated assets of the highest significance, including	ES Chapter 6 Cultural Heritage (TR010039/APP/6.1) acknowledges the importance of designated heritage assets. Mitigation has been embedded into the Scheme design to make a positive contribution to the conservation of heritage assets. The single designated heritage asset on which the Proposed Scheme has a residual impact after mitigation is the scheduled barrow cemetery and quadrilateral ditched enclosure (1006796). The impact of the Proposed Scheme on the scheduled monument is considered to constitute "less than substantial harm". This is because only a relatively small section of the scheduled monument will be impacted on and therefore the significance of the heritage asset, including the key elements of its special historic interest, will not be substantially affected.

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	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.	
5.132	Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset, the greater the justification that will be needed for any loss.	See response to NPS NN Paragraph 5.128. The A47 Wansford to Sutton is a Committed Scheme in the RIS. The Scheme also fulfils the aims of the NIDP and the Highways England Delivery Plan which is in the public benefit in terms of relief of congestion and delay to travel times, safety and economic development and therefore significant justification against which to measure the loss of this asset.
5.133	Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm, or alternatively that all of the following apply: - the nature of the heritage asset prevents all reasonable uses of the site; and - no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and - conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and - the harm or loss is outweighed by the benefit of bringing the site back into use.	See response to NPS NN Paragraphs 5.128 and 5.132.
5.134	Where the proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including securing its optimum viable use.	See response to NPS NN Paragraphs 5.131 – 5.132.
5.135	Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. The Secretary of State should treat the loss of a building (or other element) that makes a positive contribution to the site's significance either as substantial harm or less than	The Scheme would not result in any effects on any World Heritage Sites or Conservation Areas as confirmed in ES Chapter 6 Cultural Heritage (TR010039/APP 6.1).

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	substantial harm, as appropriate, taking into account the relative significance of the elements affected and their contribution to the significance of the Conservation Area or World Heritage Site as a whole.	
5.136	Where the loss of significance of any heritage asset has been justified by the applicant based on the merits of the new development and the significance of the asset in question, the Secretary of State should consider imposing a requirement that the applicant will prevent the loss occurring until the relevant development or part of development has commenced.	Any proposed mitigation within the EMP (REAC) (TR010039/APP/7.5) will be secured by a requirement in the DCO. All recording and conservation measures is secured through DCO requirement and captured within a Written Scheme of Investigation (WSI) which will be agreed with Historic England and consulted on with Peterborough City Council as appropriate.
5.137	Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.	The EMP (REAC) (TR010039/APP/7.5) states that heritage enhancement in the area will be reviewed at detailed design and can be achieved through the installation or improvement of information boards and signages. Examples of this could be brown signs for Sacrewell Farm and information signs to identify assets such as Ermine Street Roman Road and the Nene Way.
5.138	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.	ES Appendix 6.1 Cultural Heritage Information (TR010039/APP/6.2) details the baseline conditions of the heritage assets. Any deterioration in the assets due to deliberate neglect or damage is not considered during the assessment of effects.
5.144 - 5.146 (Landscape and visual impacts)	Where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment. A number of guides have been produced to assist in addressing landscape issues. The landscape and visual assessment should include reference to any landscape character assessment and associated studies, as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England. The applicant's assessment should include any significant effects during construction of the project and/or the significant effects of the completed development and its	ES Chapter 7 Landscape and Visual Effects (TR010039/APP/6.1) presents the findings of the Landscape and Visual Impact Assessment (LVIA) including baseline conditions, the potential impacts of the Scheme upon surrounding landscape and visual receptors and identification of appropriate mitigation. The assessment was carried out in accordance with the Design Manual for Roads and Bridges (DMRB), LA107 Landscape and Visual Effects, and the Guidelines for Landscape and Visual Impact Assessment. The LVIA also takes account of local development plan policies in respect of landscape and visual effects. There are no general protective landscape designations associated with the study area for the Scheme. The Nene Valley is identified by Policy LP24 of the adopted Peterborough Local Plan (2019) as an area of recreational, ecological and landscape value and opportunity. This is not considered to constitute a local landscape designation but has been considered as part of the assessment of landscape value.

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	operation on landscape components and landscape character (including historic landscape characterisation). The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation.	The alignment of the Scheme broadly coincides with the boundary of two national landscape character areas (NCA) identified by Natural England: Rockingham Forest (NCA 92) to the north and the Northamptonshire Vales (NCA 89) to the south. These two national character areas broadly correspond with the locally identified landscapes of the Nassaburgh Limestone Plateau to the north and the Nene Valley to the south. The LVIA considers both construction and operational phase impacts and includes an assessment of likely significant effects on key visual receptors, representative viewpoints, landscape character areas, residential properties, PRoW and community facilities. It also considers the effect on tranquillity and night-time effects. Effects are considered over a 15-year period of operation (see ES Chapter 7 Landscape and Visual Effects (Section 7.10 TR010039/APP/6.1)).
5.149	Landscape effects depend on the nature of the existing landscape likely to be affected and nature of the effect likely to occur. Both of these factors need to be considered in judging the impact of a project on landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints, the aim should be to avoid or minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.	Landscape and visual related design interventions and mitigation associated with the Scheme are described in ES Chapter 7 Landscape and Visual Effects, Section 7.9 (TR010039/APP/6.1). ES Chapter 7 Landscape and Visual Effects, Section 7.10 (TR010039/APP/6.1) evaluates and assesses the residual effects of the Scheme on landscape and visual sensitivities following the design refinement process and application of mitigation and enhancement measures. The effect on the Nassaburgh Limestone Plateau and the Nene Valley Landscape Character Areas during construction would be large adverse and significant from the removal of existing vegetation during the various phases of construction and from the effect on the landscape of the temporary presence of construction activity. Mitigation will include best practice in site tidiness; materials delivered on an 'as needed' basis; protection of retained vegetation. Significant large and moderate adverse visual impacts would occur at 11 viewpoints (see Table 7-8 of ES Chapter 7 (TR010039/APP/6.1)) including all aspects of construction including tree and vegetation removal, temporary construction compounds, materials stockpile

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		areas and haul routes. There will also be large adverse effects of significance on residential, community and PRow visual Receptors and 9 moderate adverse effects (see Table 7-9 of ES Chapter 7 (TR010039/APP/6.1)). At year 1 of operation, there would be a moderate adverse effect on both the Nassaburgh Limestone Plateau and the Nene Valley Landscape Character Areas reducing to slight adverse at year 15. In relation to effects on representative viewpoints, at year 1 of operation, there were four moderate adverse significant effects, on footpaths and the village of Sutton. By year 15 these had reduced to slight beneficial, neutral or slight adverse. In year 1 there were 6 moderate adverse effects on residential, community and PRow receptors, these reduced to slight adverse or less at year 15. The combined effect of the Scheme on landscape and visual amenity as a whole has been assessed independently and the outcome combined into a single conclusion on the overall likely significance of effect. Having considered the residual (Year 15) landscape and visual assessments, it is concluded that the Scheme would not result in a significant long term residual effect on overall landscape and visual amenity. While a small number of visual receptors would experience a residual adverse (albeit not significant) visual effect, this would be a relatively limited change.
5.154 - 5.155	The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. This should include projects in England which may have impacts on designated areas in Wales or on National Scenic Areas in Scotland.	Section 7.7 of ES Chapter 7 Landscape and Visual Effects (TR010039/APP/6.1) states that there are no landscape designations within the Scheme study area therefore it would not affect any statutory or locally designated landscapes.

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	The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent.	
5.156	Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development document in England has policies based on landscape character assessment, these should be given particular consideration. However, local landscape designations should not be used in themselves as reasons to refuse consent, as this may unduly restrict acceptable development.	Local landscapes have been considered within the LVIA and reported in Section 7.7 of ES Chapter 7 Landscape and Visual Effects (TR010039/APP/6.1). Findings on significant impacts are reported in the response to NPS NN paragraph 5.149 above.
5.157	In taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation.	ES Chapter 7 Landscape and Visual Effects (TR010039/APP/6.1) addresses how the Scheme has been designed to minimise harm to the landscape, sets out the environmental measures provided as part of the Scheme and the mitigation proposed. The EMP (TR010039/APP/7.7) includes the REAC (Table 1.5) which identifies the mitigation identified within the ES to address the potential significant environmental effects of the Scheme. During construction, measures within the REAC include keeping a tidy site, avoiding stockpiling, protecting retained vegetation, minimising routes of construction vehicles, reducing light disturbance for sensitive receptors and constraining working hours. Landscaping works will include: • new hedgerow, tree, and woodland planting to screen the Scheme • new hedgerow planting to integrate the Scheme with the existing field pattern. See also Section 7.9 of Chapter 7 of the ES (TR010039/APP/6.1) and the Environmental Masterplan (TR010039/APP/6.8).
5.158	The Secretary of State will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development.	See response to NPS NN Paragraphs 5.149. In terms of its benefits, the A47 Wansford to Sutton is a Committed Scheme in the RIS. It fulfils the aims of the NIDP and the Highways England Delivery Plan which is in the public benefit in terms of relief of

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		congestion and delay to travel times, safety, community and economic development which are summarised in the Case for the Scheme Chapters 3 to 6 (TR010039/APP/7.1). These benefits are considered to outweigh any unavoidable residual impacts.
5.159	Reducing the scale of a project or making changes to its operation can help to avoid or mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design or changing the operation of a proposed development may result in a significant operational constraint and reduction in function. There may, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in scale or function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape effects outweigh the marginal loss of scale or function.	The Scheme is a linear highway project and there is accordingly limited scope to reduce scale. Nine potential options were initially considered, then assessed to identify their performance against safety, environmental, engineering, transportation and economic criteria so that they could be compared and contrasted. The Preferred Route 'Option 2 would solve the traffic and safety problems; it could be built with the least disruption to drivers during construction; would have the least impact on the environment; and the existing road could remain for local traffic, pedestrians, cyclists and equestrians. Further information can be found in the Case for the Scheme Section 2.3 (TR010039/APP/7.1) and ES Chapter 3 Assessment of Alternatives (TR010039/APP/ 6.1). The evolution of the Scheme's design is described in Section 2.3 of the Case for the Scheme (TR010039/APP/7.1) and in the Scheme Design Report (TR010039/APP/7.4). The design has considered the adjacent landform and sought to minimise land take and intrusion. It also includes appropriate landscaping measures, to mitigate potentially harmful effects on views associated with the Scheme, which will be more effective as they mature.
5.160	Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure, design (including choice of materials), and landscaping Schemes, depending on the size and type of proposed project. Materials and designs for infrastructure should always be given careful consideration.	See response to NPS NN paragraph 5.159 above. Siting, design and materials are, to a large extent, dictated by engineering and safety considerations related to the construction of highways. Landscape and visual related design, mitigation and enhancement measures associated with the Scheme are described in Section 7.9 of ES Chapter 7 Landscape and Visual Effects (TR010039/APP/ 6.1). The evolution of the Scheme's design is described in the Scheme Design Report (TR010039/APP/7.4). The Scheme design has considered the adjacent landform and sought to minimise intrusion. It also includes appropriate landscaping measures to mitigate potentially harmful effects on views associated with the Scheme which will be more effective as they mature.

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		Landscape planting is illustrated in the Environmental Masterplan (TR010039/APP/6.8). Landscaping works will include: • new hedgerow, tree, and woodland planting to screen the Scheme • new hedgerow planting to integrate the Scheme with the existing field pattern.
5.161	Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site, although if such landscaping was proposed to be consented by the development consent order, it would have to be included within the order limits for that application. For example, filling in gaps in existing tree and hedge lines would mitigate the impact when viewed from a more distant vista.	The Order Limits do not include for off-site landscape mitigation as sufficient mitigation can be delivered within the Scheme boundary. Landscape and visual mitigation measures embedded in the Scheme design are illustrated and detailed in the Environmental Masterplan (TR010039/APP/6.8).
5.165 - 5.167 (Land use including open space, green infrastructure and Green Belt)	The applicant should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan. The assessment should be proportionate. Existing open space, sports and recreational buildings and land should not be developed unless the land is surplus to requirements or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location. Applicants considering proposals which would involve developing such land should have regard to any local authority's assessment of need for such types of land and buildings. During any pre-application discussions with the applicant, the local planning authority should identify any concerns it has about the impacts of the application on land-use, having regard to the development plan and relevant applications, and including, where relevant, whether it	ES Chapter 12: Population and Human Health (TR010039/APP/6.1) identifies existing land uses and receptors in the vicinity of the Scheme and assesses their sensitivity, using the criteria in Table 3.11 of DMRB LA 112, to the potential effects of the Scheme and the potential magnitude of impact. Residential, businesses, agricultural holdings, recreational users, PRoW, new developments and uses proposed in the Development Plan are considered. Consultation has taken place with Peterborough City Council as detailed in the Consultation Report (TR010039/APP/5.1).

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	agrees with any independent assessment that the land is surplus to requirements. These are also matters that local authorities may wish to include in their Local Impact Report which can be submitted after an application for development consent has been accepted.	
5.168	Applicants should take into account the economic and other benefits of the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification). Where significant development of agricultural land is demonstrated to be necessary, applicants should seek to use areas of poorer quality land in preference to that of a higher quality. Applicants should also identify any effects, and seek to minimise impacts, on soil quality, taking into account any mitigation measures proposed. Where possible, developments should be on previously developed (brownfield) sites provided that it is not of high environmental value. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination and how it is proposed to address this.	The Scheme footprint lies within undeveloped agricultural land currently in use by a number of farms and utilises the existing A47 infrastructure. The agricultural land quality within the Scheme boundary is a mixture of Grade 2, Grade 3a (good quality) and 3b (moderate quality) agricultural land as shown below in Table 9 10. and Appendix 9.2 Agricultural Land Classification (TR010039/APP/6.3). The areas of Grade 2 and Grade 3a agricultural land make up approximately 49.5% of the study area. The temporary land-take would be restored and available for agricultural use following completion of the construction phase, subject to the provisions of a Soil Management Plan. Although some land will be permanently lost to agriculture for which there is no mitigation, the soil resources would still be used to provide some ecosystem services. Following mitigation, there will be a very large residual adverse effect on Grade 2 agricultural soils due to the loss of 11 ha of land for permanent works. The footprint of the Scheme has been minimised and soils will be reused where possible subject to a materials management plan. There will also be a moderate adverse impact due to temporary land take of Grade 2 agricultural land for construction compounds, haul roads etc. Soils will be protected and replaced to their baseline condition. There will also be moderate adverse impacts due to land take of 8.1ha of Grade 3a and 9.5 ha of Grade 3b agricultural land for permanent works. The loss of the agricultural land occurs during the construction phase and no additional loss of agricultural land is expected during the operational phase having a neutral effect.

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		Paragraph 1.2 of the NPS NN acknowledges that some schemes will unavoidably result in limited adverse impacts but that these should not outweigh the positive benefits. The residual impacts of this Scheme, following mitigation, do not outweigh its positive overall benefits.
5.169	Applicants should safeguard any mineral resources on the proposed site as far as possible.	ES Chapter 10 Material Assets and Waste (TR010039/APP/6.1) states that the Scheme boundary intersects sand and gravel deposits (River Terrace Deposits and Alluvium) and limestone (Upper and Lower Lincolnshire Limestone). These sand deposits form part of the council's safeguarded mineral resources (sands and gravels). By way of mitigation the re-use of site won excavated materials within the Scheme boundary is proposed without the need for treatment, and by meeting waste exemption, or CL:AIRE DoW CoP criteria. This results in a slight adverse, not significant impact.
5.173	Where the project conflicts with a proposal in a development plan, the Secretary of State should take account of the stage which the development plan document has reached in deciding what weight to give to the plan for the purposes of determining the planning significance of what is replaced, prevented or precluded. The closer the development plan document is to being adopted by the local plan, the greater the weight which can be attached to the impact of the proposal on the plan.	Chapter 6 of the Case for the Scheme Conformity with Planning Policy and Transport Plans (TR010039/APP/7.1) sets out the planning policy justification for the proposal. The Scheme demonstrates compliance with the Government's strategic vision for the development of the national road network. The Scheme is included within the RIS and national, regional and local transport and planning policy. Section 3(6) of the Infrastructure Act 2015 places a duty on the SoS to comply with the provisions of the RIS. By increasing capacity and removing many of the constraints associated with the existing single carriageway between Wansford to Sutton, the Scheme meets many of the objectives contained in the development plan transport and economic strategies for the area. The Scheme delivers the aims of the Peterborough Local Plan and the Local Transport Plan 2020 which supports the Scheme improvements to the A47. The Scheme complies with the development control policies of the Local Plan in addressing its potential impacts on the natural and built environment, mitigating and enhancing where possible. It is demonstrated that the public benefits of the Scheme outweigh any unavoidable residual impacts. The economic assessment demonstrates that, taking into account the

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		total Scheme costs, the effects of delays during construction, accident benefits, indirect taxation benefits, monetised environmental impacts and maintenance costs, the initial Benefit to Cost Ratio represents 'High' Value for Money. Once the wider economic and journey time reliability benefits are factored in, the value for money figure improves further.
5.175	Where networks of green infrastructure have been identified in development plans, they should normally be protected from development, and, where possible, strengthened by or integrated within it. The value of linear infrastructure and its footprint in supporting biodiversity and ecosystems should also be taken into account when assessing the impact on green infrastructure.	ES Chapters 8 Biodiversity and 12 Population and Human Health (TR010039/APP/6.1) take account of the requirements of the Peterborough Green Infrastructure & Biodiversity Supplementary Planning Document (SPD) July 2019 in promoting green infrastructure as part of the Scheme and ensuring any impacts are mitigated against where possible.
5.176	The decision-maker should take into account the economic and other benefits of the best and most versatile agricultural land. The decision maker should give little weight to the loss of agricultural land in grades 3b, 4 and 5, except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy.	See response to NPS NN paragraph 5.168.
5.180	Where green infrastructure is affected, applicants should aim to ensure the functionality and connectivity of the green infrastructure network is maintained and any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space, including appropriate access to new coastal access routes, National Trails and other public rights of way.	ES Chapter 12 Population and Human Health (TR010039/APP/6.1) identifies the walking, cycling and horse riding routes within the study area. The Scheme has been designed to reduce the need to close and divert footways, PRoW or cycle facilities. Where a closure of a WCH route is required, safe and appropriate alternative routes would be provided to ensure access is maintained during construction. Section 12.9 of Chapter 12 details the green infrastructure measures proposed including signage, new and upgraded combined footway/cycle paths, bridleways and new PRoW that will be provided to provide improved connectivity between existing settlements.
5.181	The Secretary of State should also consider whether mitigation of any adverse effects on green infrastructure or open space is adequately provided for by means of any planning obligations, for example, to provide exchange land and provide for appropriate management and maintenance agreements. Any exchange land should be	See response to NPS NN paragraph 5.180. No additional or exchange land is required.

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	at least as good in terms of size, usefulness, attractiveness, quality and accessibility. Alternatively, where Sections 131 and 132 of the Planning Act 2008 apply, any replacement land provided under those sections will need to conform to the requirements of those sections.	
5.182	Where a proposed development has an impact on a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to safeguard mineral resources.	See response to NPS NN paragraph 5.169.
5.183	Where a project has a sterilising effect on land use there may be scope for this to be mitigated through, for example, using the land for nature conservation or wildlife corridors or for parking and storage in employment areas.	See response to NPS NN paragraphs 5.168-5.169.
5.184	Public rights of way (PRoW), National Trails, and other rights of access to land (for example open access land) are important recreational facilities for walkers, cyclists and equestrians. Applicants are expected to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other public rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve access. In considering revisions to an existing right of way consideration needs to be given to the use, character, attractiveness and convenience of the right of way. The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements in respect of these measures might be attached to any grant of development consent.	See response to NPS NN paragraph 5.180.
5.189 (Noise and vibration)	Where a development is subject to EIA and significant noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment, which should form part of the environment statement: a description of the noise sources including likely usage in terms of number of movements, fleet mix and diurnal pattern. For any associated fixed	Chapter 11 Noise and Vibration of the ES (TR010039/APP/6.1) considers the potential noise and vibration impacts of the Scheme. The assessment has been undertaken in accordance with British Standards 5228 parts 1 and 2 and DMRB (LA111) which address the areas detailed by NPS NN paragraph 5.189. It covers daytime and night-time periods, weekdays and weekends. The assessment finds that construction noise is not predicted to result

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	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 as appropriate. • an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive areas. • measures to be employed in mitigating the effects of noise. Applicants should consider using best available techniques to reduce noise impacts. • the nature and extent of the noise assessment should be proportionate to the likely noise impact.	in any significant adverse residual effects. Also, subject to mitigation, vibration due to construction activity is not expected to constitute a significant effect at any vibration-sensitive receptor. No significant adverse noise effects due to construction traffic are predicted. This will be controlled in the Outline Traffic Management Plan (TR010038/APP/7.6). The change in road traffic noise during temporary traffic diversions are therefore not expected to constitute a significant effect. Monitoring will take place during construction. Following mitigation, no significant residual traffic noise effects, adverse or beneficial, are predicted due to the operation of the Scheme. Impacts that may constitute significant environmental effects from noise during construction and operation shall be monitored. However, DMRB LA 111 notes that post construction road traffic noise monitoring cannot provide a reliable gauge for whether the operational impacts are greater or less than those predicted in the assessment due to the following reasons: • the assessment is based on annual average conditions with and without the project to ensure a like for like comparison which is not possible to replicate through monitoring within a reasonable timescale • monitoring in the absence of the project would need to be completed before the start of the construction works and would therefore be a number of years before the monitoring with the Scheme in operation. In addition, the assessment completed for the ES is based on calculated noise levels from road traffic only, whereas ambient noise monitoring can be affected by other noise sources such as people, agricultural activities, military activities, aircraft etc. Operational noise and vibration monitoring is not recommended.
5.190	The potential noise impact elsewhere that is directly associated with the development, such as changes in road and rail traffic movements elsewhere on the national networks, should be considered as appropriate.	ES Chapter 11 Noise and Vibration (TR010039/APP/6.1) considers the construction and operational effects and includes offline impacts where appropriate.
5.191	Operational noise, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance. The prediction of	See response to NPS NN paragraph 5.189.

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	road traffic noise should be based on the method described in Calculation of Road Traffic Noise. For the prediction, assessment and management of construction noise, reference should be made to any relevant British Standards and other guidance which also give examples of mitigation strategies.	
5.192	The applicant should consult Natural England with regard to assessment of noise on designated nature conservation sites, protected landscapes, protected species or other wildlife. The results of any noise surveys and predictions may inform the ecological assessment. The seasonality of potentially affected species in nearby sites may also need to be taken into account.	ES Chapter 8 Biodiversity (TR010039/APP/6.1) states that Natural England were asked in March 2021 to comment on the Report to Inform Habitats Regulations. Comments were received in June 2021 and have been addressed in the Report to Inform a Habitat Regulations Assessment (TR010039/APP/6.9) The results of the noise assessment (ES Chapter 11 Noise and Vibration (TR010039/APP/6.1)) have informed the ecological assessment. For example, disturbance of the foraging areas of wintering birds from construction noise and the disturbance of bats resulting in avoidance and abandonment of habitats/roosts.
5.193	Developments must be undertaken in accordance with statutory requirements for noise. Due regard must have been given to the relevant sections of the Noise Policy Statement for England, National Planning Policy Framework and the government's associated planning guidance on noise.	ES Appendix 11.2: Legislation and policy framework (TR010039/APP/6.3) identifies the legislation, policy, regulations, guidance and standards that are relevant to this assessment, including the Noise Policy Statement for England. The Appendix also states where the policy requirements have been addressed as part of the Scheme assessment.
5.194	The project should demonstrate good design through optimisation of Scheme layout to minimise noise emissions and, where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission. The project should also consider the need for the mitigation of impacts elsewhere on the road and rail networks that have been identified as arising from the development, according to Government policy.	The EMP (TR010039/APP/7.5) and Section 11.9 of ES Chapter 11 Noise and Vibration ES (TR010039/APP/6.1) details the design of mitigation proposed in relation to the Scheme. As described in the response to NPS NN paragraphs 4.3 and 4.31, reducing the environmental effects of the road, is an objective for the Scheme, and the Scheme layout responds to this objective. Reducing noise impacts of the road are central to meeting these objectives. A summary of the mitigation which is proposed to minimise noise emissions includes time limitations on construction works, temporary noise barriers, best practice on-site during construction, good communication with local residents avoiding using local roads, landscaping and low noise surfacing. The need for mitigation elsewhere has been considered as part of the noise assessment but is not proposed.

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5.195	The Secretary of State should not grant development consent unless satisfied that the proposals will meet, the following aims, within the context of Government policy on sustainable development: • avoid significant adverse impacts on health and quality of life from noise as a result of the new development; • mitigate and minimise other adverse impacts on health and quality of life from noise from the new development; and • contribute to improvements to health and quality of life through the effective management and control of noise, where possible.	See response to NPS NN paragraph 5.189 above.
5.196	In determining an application, the Secretary of State should consider whether requirements are needed which specify that the mitigation measures put forward by the applicant are put in place to ensure that the noise levels from the project do not exceed those described in the assessment or any other estimates on which the decision was based.	Mitigation measures required during construction have been identified in the ES. These measures are delivered through the EMP (TR010039/APP/7.5) which is secured by Requirement 4 to the Draft DCO.
5.197	The Examining Authority and the Secretary of State should consider whether mitigation measures are needed both for operational and construction noise over and above any which may form part of the project application. The Secretary of State may wish to impose requirements to ensure delivery of all mitigation measures.	Construction and operational noise mitigation measures have been identified in the ES. Construction mitigation measures are delivered through the EMP (TR010039/APP/7.7) which is secured by Requirement 4 to the Draft DCO. See response to NPS NN paragraph 5.194 above.
5.198	Mitigation measures for the project should be proportionate and reasonable and may include one or more of the following: - engineering: containment of noise generated; - materials: use of materials that reduce noise, (for example low noise road surfacing); - lay-out: adequate distance between source and noise-sensitive receptors; incorporating good design to minimise noise transmission through screening by natural or purpose built barriers; - administration: specifying acceptable noise limits or times of use (e.g., in the case of railway station PA systems).	The EMP (TR010039/APP/7.5) and ES Chapter 11 Noise and Vibration Section 11.9 (TR010039/APP/6.1) set out noise mitigation measures and best practice techniques that are expected to reduce the potential for significant effect occurring due to noise from the construction and operation of the Scheme. It is considered that the mitigation proposed is proportionate and includes all reasonable measures (as far as sustainable), including for construction works. See response to NPS NN paragraph 5.194 above.

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5.199	For most national network projects, the relevant Noise Insulation Regulations will apply. These place a duty on and provide powers to the relevant authority to offer noise mitigation through improved sound insulation to dwellings, with associated ventilation to deal with both construction and operational noise. An indication of the likely eligibility for such compensation should be included in the assessment. In extreme cases, the applicant may consider it appropriate to provide noise mitigation through the compulsory acquisition of affected properties in order to gain consent for what might otherwise be unacceptable development. Where mitigation is proposed to be dealt with through compulsory acquisition, such properties would have to be included within the development consent order land in relation to which compulsory acquisition powers are being sought.	ES Chapter 11 Noise and Vibration (TR010039/APP/6.1) states that there are no dwellings where the façade noise level is at least 68dB LA10,18h and the noise from the new or altered highways causes the total level to increase by at least 1.0dB. As such, no properties are forecast to be eligible for insulation under the Noise Insulation Regulations.
5.200	Applicants should consider opportunities to address the noise issues associated with the Important Areas as identified through the noise action planning process.	There are two NIA within the operational noise study area, identified on the A1: • IA_ID: 5305, asset owner HE • IA_ID: 5303, asset owner HE NIA 5304 has been excluded from the assessment of operational noise as the residential building in the NIA is to be demolished. These NIAs are considered in Section 11.10 and Table 11.21 of ES Chapter 11 Noise and Vibration (TR010039/APP/6.1) which summarises the final operational noise significance, following mitigation, for each of the NIAs which are found to be not significant.
5.203 - 5.205 (Impacts on transport networks)	Applicants should have regard to the policies set out in local plans, for example, policies on demand management being undertaken at the local level. Applicants should consult the relevant highway authority, and local planning authority, as appropriate, on the assessment of transport impacts.	Section 6 of the Case for the Scheme (TR010039/APP/7.1) assesses the Scheme's conformity with Local Development Plans and Transport Plans. Peterborough City Council, as the Local Highway Authority, has been consulted on the traffic modelling and the results. This is summarised in the TA (TR010039/APP/7.3). A record of meetings and items of discussion will be set out in a Statement of Common Ground.

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	Applicants should consider reasonable opportunities to support other transport modes in developing infrastructure. As part of this, consistent with paragraph 3.21 and 3.22 above, the applicant should provide evidence that as part of the project they have used reasonable endeavours to address any existing severance issues that act as a barrier to non-motorised users.	There are no proposed alterations to rail public transport services as part of the Scheme, therefore any impacts are judged to be insignificant. No alterations to bus public transport services are included in the Scheme. It is considered the Scheme's overall impact on bus transport users will be beneficial due to the congestion relief provided for all highway traffic. A Walking, Cycling, Horse-riding Assessment and Review (WCHAR) process has been undertaken as part of the Scheme. The outcome of the assessment is presented in ES Chapter 12 Population and Human Health (TR010039/APP/6.1). The Scheme provides support to walkers, cyclists, horse riders and other vulnerable users by incorporating and upgrading safe, convenient, accessible and attractive routes for pedestrians and cyclists.
5.206	For road and rail developments, if a development is subject to EIA and is likely to have significant environmental impacts arising from impacts on transport networks, the applicant's environmental statement should describe those impacts and mitigating commitments. In all other cases the applicant's assessment should include a proportionate assessment of the transport impacts on other networks as part of the application.	The application is supported by a TA (TR010039APP/7.3) which considers the transport impacts of the Scheme on other networks, including rail and public bus services in addition to impacts on the highway network. The outputs of the traffic modelling and forecasting have also been considered in the relevant ES Chapters (TR010039/APP/6.1) in relation to air quality, biodiversity, noise and vibration, population and human health, and climate.
5.208	Where appropriate, the applicant should prepare a travel plan including management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport and sustainable modes where relevant, to reduce the need for any parking associated with the proposal and to mitigate transport impacts.	A travel plan has not been prepared to support the Application due to the nature of the Scheme not being a generator of additional traffic in itself, rather it is re-distributing existing and future traffic flows.
5.209	For schemes impacting on the Strategic Road Network, applicants should have regard to DfT Circular 02/2013 The Strategic Road Network and the delivery of sustainable development (or prevailing policy) which sets out the way in which the highway authority for the Strategic Road	All statutory and non-statutory public consultations have been carried out, as set out in the Consultation Report (TR010039/APP/5.1). Highways England is the operator of the Strategic Road Network and is the applicant. Peterborough City Council, as the Local Highway

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	Network, will engage with communities and the development industry to deliver sustainable development and, therefore, economic growth, whilst safeguarding the primary function and purpose of the Strategic Road Network.	Authority, has been consulted on the proposals and on the traffic modelling and the results. This is summarised in Section 8 of the TA (TR010039/APP/7.3). Further consideration of plans and policies, including DfT Circular 02/2013, is set out in Section 6 of the Case for the Scheme (TR010039/APP/7.1).
5.210	If new transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by Government for any third-party benefits. Guidance has been issued in England which explains the circumstances where this may be possible. The Government cannot guarantee in advance that funding will be available for any given uncommitted scheme at any specified time, and cannot provide financial support to a scheme that solely mitigates the impacts of a specific development. Any decisions on co-funded transport infrastructure will need to be taken in the context of the Government's wider policy of transport improvements.	Third party funding is not required as the Scheme has funding committed through the Government's RIS. Funding sources are described in the Funding Statement (TR010039/APP/4.2).
5.211	The Examining Authority and the Secretary of State should give due consideration to impacts on local transport networks and policies set out in local plans, for example, policies on demand management being undertaken at the local level.	See response to NPS NN paragraph 5.209. Where relevant, analysis has been included in this document and is provided in the Case for the Scheme (TR010039/APP/7.1).
5.212	Schemes should be developed and options considered in the light of relevant local policies and local plans, taking into account local models where appropriate, however the Scheme must be decided in accordance with the NPS except to the extent that one or more of sub-sections 104(4) to 104(8) of the Planning Act 2008 applies.	The consideration of development plan policies is provided in Section 6 of the Case for the Scheme (TR010039/APP/7.1). The Scheme is supported by and has taken account of the various documents which comprise the area and region's development and transport plans.
5.215	Mitigation measures for Schemes should be proportionate and reasonable, focused on promoting sustainable development.	The ES (TR010039/APP/6.1) contains a full assessment of the relevant impacts that are likely to rise from the Scheme, and where significant impacts are identified, articulates how those impacts can be avoided, reduced or mitigated. The proposed mitigation measures take account of relevant policy and guidance, including the policy focus on promoting sustainable development. Mitigation measures are also set out in the EMP (TR010039/APP/7.7) (secured through Requirement 4 to the Draft DCO) including why they

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		are required, who is responsible for delivering them and detailing ongoing reporting criteria. The Environmental Masterplan (TR010039/APP/6.8) illustrates physical mitigation measures embedded as integral elements of the Scheme design.
5.216	Where development would worsen accessibility, such impacts should be mitigated so far as reasonably possible. There is a very strong expectation that impacts on accessibility for non-motorised users should be mitigated.	See response to NPS NN paragraphs 5.203-5.205.
5.220 (Water quality and resources)	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.	ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1) is supported by Figures 13.1 to 13.7 (TR010039/APP/6.2). The study area is split between two WFD surface water body catchments, both of which are within the Anglian River Basin District: • Nene - Islip to Tidal WFD water body (WBID: GB105032050381) covers the entire southern part of the study area and northern section east of Sutton Heath Road. The River Nene main river flows through the length of the catchment and an unnamed watercourse to the east of the Proposed Scheme is also located within this catchment. It is a heavily modified water body which is part of the Nene Middle Operational Catchment • Wittering Brook WFD water body (GB105032050350) covers the northern part of the study area and contains Wittering Brook and Mill Stream ordinary watercourses. There are no main rivers within the study area that are associated with this water body catchment. It is not designated artificial or heavily modified and is part of the Nene Middle Operational Catchment. Their locations are identified in Figure 13.2 (WFD surface waterbodies) (TR010039/APP/6.2) .

NPS NN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPS NN)	Compliance with the NPS NN
5.221	Applicants should make early contact with the relevant regulators, including the Environment Agency, for abstraction licensing and with water supply companies likely to supply the water. Where a development is subject to EIA and the development is likely to have significant adverse effects on the water environment, the applicant should ascertain the existing status of, and carry out an assessment of the impacts of the proposed project on water quality, water resources and physical characteristics as part of the environmental statement.	See response to NPS NN paragraph 4.54. ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1) notes that the Environment Agency, Anglian Water and Peterborough City Council (as Lead Local Flood Authority) responded to the Scoping Report (TR010039/APP/6.5) via the Planning Inspectorate. Article 21 of the Draft DCO provides powers for the discharge of water. No significant adverse effects on surface water and groundwater receptors are predicted during construction or operation of the Scheme, subject to the mitigation measures included in the EMP (TR010039/APP/7.5).
5.222	For those projects that are improvements to the existing infrastructure, such as road widening, opportunities should be taken, where feasible, to improve upon the quality of existing discharges where these are identified and shown to contribute towards Water Framework Directive commitments.	ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1) considers the effects of the Scheme on water quality and identifies opportunities to improve the quality of existing discharges. The Water Framework Directive Assessment (Section 13.10) states that there are no significant adverse effects (moderate or above) identified within the assessment. However, monitoring of surface water and groundwater is part of the essential mitigation required to ensure construction works in, or near to, the watercourses such as the construction of the proposed culverts, do not have a significant effect.
5.223	Any environmental statement should describe: - the existing quality of waters affected by the proposed project; - existing water resources affected by the proposed project and the impacts of the proposed project on water resources; - 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	ES Chapter 13 Road Drainage and the Water Environment (TR010039/APP/6.1) describes the existing water environment, assesses the impacts of the Scheme, proposes mitigation and examines residual impacts. The Scheme is not expected to give rise to significant adverse (moderate or greater) residual effects during the construction or operational phases with the adoption of mitigation measures. The outcome of this assessment is based on the mitigation measures described in this chapter which will be secured through measures embedded in the design of the Scheme and the implementation of the Environmental Management Plan (TR010039/APP/7.5).

NPS NN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPS NN)	Compliance with the NPS NN
	Framework Directive and source protection zones (SPZs) around potable groundwater abstractions; and • any cumulative effects.	The Scheme is unlikely to result in any significant cumulative effects during construction or operation. In combination with other developments within the ZOI, no significant cumulative effects are anticipated on receptors identified in the ES.
5.226	The Secretary of State should be satisfied that a proposal has had regard to the River Basin Management Plans and the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. The specific objectives for particular river basins are set out in River Basin Management Plans. In terms of Water Framework Directive compliance, the overall aim of projects should be no deterioration of ecological status in watercourses, ensuring that Article 4.7 of the Water Framework Directive Regulations does not need to be applied.	See response to NPS NN paragraph 5.220 above. The WFD assessment therefore concludes that the construction and operational activities affecting the WFD water bodies will be compliant with the requirements of the WFD. This assumes the mitigation is implemented and limits the overall effect of the Proposed Scheme to slight adverse and is localised. Due to this, construction and operational activities affecting the WFD surface water and groundwater bodies are not considered to cause deterioration and should not prevent future attainment of WFD water body targets.
5.227	The Examining Authority and the Secretary of State should consider proposals put forward by the applicant to mitigate adverse effects on the water environment and whether appropriate requirements should be attached to any development consent and/or planning obligations. If the Environment Agency continues to have concerns and objects to the grant of development consent on the grounds of impacts on water quality/resources, the Secretary of State can grant consent, but will need to be satisfied before deciding whether or not to do so that all reasonable steps have been taken by the applicant and the Environment Agency to try to resolve the concerns, and that the Environment Agency is satisfied with the outcome.	ES Chapter 13: Road Drainage and the Water Environment (TR010039/APP/6.1) describes consultation carried out with the Environment Agency and appropriate stakeholders (including Peterborough City Council as Lead Local Flood Authority). Good practice mitigation measures to protect the water environment are set out within the EMP (TR010039/APP/7.5) which is secured by Requirement 4 to the Draft DCO.
5.229	The Secretary of State should consider whether the mitigation measures put forward by the applicant which are needed for operation and construction (and which are over and above any which may form part of the project application) are acceptable. A construction management plan may help codify mitigation.	The EMP (TR010039/APP/7.5) details the environmental mitigation measures proposed to be implemented during construction, why they are required, who is responsible for delivering them and details ongoing reporting criteria. The EMP is secured by Requirement 4 to the Draft DCO.
5.230	The project should adhere to any National Standards for sustainable drainage systems (SuDs). The National SuDs Standards will introduce a hierarchical approach to	See response to NPS NN paragraph 5.100.

NPS NN Paragraph Number	Requirement of the National Policy Statement for National Networks (NPS NN)	Compliance with the NPS NN
	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.	
5.231	The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution control practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be marked clearly.	Section 13.9 of ES Chapter 13 Road Drainage and the Water Environment, (TR010039/APP/6.1), describes the proposed construction and operational design interventions and mitigation. The HEWRAT spillage assessment, as described in Appendix D of DMRB LA 113 and presented in Appendix 13.3 (Surface water quality assessment) (TR010039/APP/6.3) is relevant for assessing the potential water quality impacts of accidental spillages on groundwater bodies. All drainage areas were assessed to have <0.5% annual risk of pollution. Pollution control devices such as penstocks shall also be provided on all catchments to provide additional pollution protection and betterment described in Appendix 13.2 (Drainage strategy) (TR010039/APP/6.3). The EMP (TR010039/APP/7.5) details the environmental mitigation measures proposed to be implemented during construction, why they are required, who is responsible for delivering them and ongoing reporting criteria. The EMP is secured by Requirement 4 to the Draft DCO.