



NORTHAMPTON
GATEWAY
STRATEGIC RAIL FREIGHT INTERCHANGE

CLIMATE CHANGE SUMMARY

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The Northampton Gateway Rail Freight Interchange Order 201X

CLIMATE CHANGE SUMMARY | 19 MARCH 2019

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NORTHAMPTON GATEWAY

CONSIDERATION OF CLIMATE CHANGE – March 2019

1. Introduction - Legislative and Policy Context

- 1.1 Section 10 of the Planning Act 2008 specifically requires the Secretary of State to have regard to the objective of achieving sustainable development when considering the contents and reviewing National Policy Statements. It says (bold emphasis added):

10 Sustainable development

(1) This section applies to the Secretary of State's functions under sections 5 and 6.

*(2) The Secretary of State must, in exercising those functions, do so **with the objective of contributing to the achievement of sustainable development.***

*(3) For the purposes of subsection (2) the Secretary of State **must (in particular) have regard to the desirability of—***

*(a) **mitigating, and adapting to, climate change;***

(b) achieving good design.

- 1.2 In determining an application for a DCO where a National Policy Statement applies (as here) the Secretary of state must, inter alia, have regard to the relevant National Policy Statement and decide the application in accordance with any relevant policy statement unless certain exceptions apply.

- 1.3 Appendix 1 of the Planning Statement sets out the Applicant's position with regard to compliance with the National Policy Statement for National Networks (NPS) (Document 6.6 [APP-376]).

- 1.4 The EIA process is required to include 'climate' issues as part of the Environmental Statement. Part 1 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 Regulations says (emphasis added):

4.—(2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—

*(c) land, soil, water, air and **climate;***

- 1.5 Schedule 4 of the same Regulations provides information for inclusion in environmental statements, which includes:

4. A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and

quality), air, **climate (for example greenhouse gas emissions, impacts relevant to adaptation)**, material assets, cultural heritage, including architectural and archaeological aspects, and landscape.

5. A description of the likely significant effects of the development on the environment resulting from, *inter alia*:.....

(f) the impact of the project on **climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;**

- 1.6 Therefore, in terms of the legislative context, the ExA's assessment of the extent to which the Proposed Development helps achieve the multi-faceted and over-arching objective of delivering 'sustainable development' includes having regard to "*the desirability*" of mitigating and adapting to climate change.
- 1.7 The NPS also makes numerous references to '*sustainable development*' with reference to environmental and health or well-being related issues (e.g. relating to assessment of noise impacts), but does not include an overall definition of it. However, the NPS directly cross-refers to the National Planning Policy Framework (NPPF) in the pursuit of sustainable development, and the NPPF summarises it as "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*". A more detailed definition of sustainable development in the NPPF identifies **three interdependent overarching objectives: Economic, Social, and Environmental.**
- 1.8 Much of the NPS relates to national network infrastructure in general, but there are also specific references to climate change in the context of proposed new SRFIs. The NPS describes SRFIs as part of the Government's vision for a "*low carbon sustainable transport system*", and states (bold emphasis added):
- "The transfer of freight from road to rail has an important part to play in a low carbon economy and in helping to address climate change."***
(NPS paragraph 2.53).
- 1.9 Therefore, the NPS is clear about the positive and important role of SRFIs specifically in helping address and mitigate 'climate change' in this context the NPS also says (bold emphasis added):
- "Rail transport has a crucial role to play in delivering significant reductions in pollution and congestion. Tonne for tonne, rail freight produces 70% less CO₂ than road freight, up to fifteen times lower NO_x emissions and nearly 90% lower PM₁₀ emissions. It also has de-congestion benefits – depending on its load, each freight train can remove between 43 and 77 HGVs from the road."***
(NPS paragraph 2.35)
- 1.10 The NPS also refers to the EIA Regulations, and to '*climate change adaptation*' with reference to Section 10 (3) of the Planning Act. That part of the NPS (paragraphs 4.36

– 4.47) is presented as “*how the NPS puts Government policy on climate change adaptation into practice, and in particular how applicants and the Secretary of State should take the effects of climate change into account*” (NPS, paragraph 4.37).

1.11 The emphasis of that section of the NPS is on **mitigation** to “*minimise the most dangerous impacts of climate change*”¹ over the next 30 years or beyond (NPS, paragraph 4.37), as well as **adaptation** to deal with changes which are already happening².

1.12 The main risks and impacts which climate change could have on the development are referred to in the NPS are

“an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms or wildfires, as well as rising sea-levels.”

(NPS paragraph 4.37)

1.13 The NPS is clear about the causal link between climate change and global greenhouse gas emissions. Therefore, mitigation of climate change through planning and development is usually largely focused on carbon dioxide reductions, and reducing use of fossil fuels.

1.14 At a strategic level, the NPS requires new infrastructure development to be “*planned to avoid increased vulnerability to the range of impacts arising from climate change*” (paragraph 4.38). More specifically, it provides the following guidance and requirements regarding mitigation and adaptation for new ‘*national infrastructure*’, and suggested actions or considerations for applicants (emphasis added):

- When brought forward in areas which are vulnerable, “*care should be taken to ensure risks can be managed through suitable adaptation measures, including through the **provision of green infrastructure***” (paragraph 4.38);
- Applicants must consider the impacts of climate change “*when planning **location, design, build and operation***”, and Environmental Statements (ES) should set out “*how the proposal will take account of the projected impacts of climate change*” (paragraph 4.40);
- The NPS sets out actions where the “transport infrastructure” has “**safety critical elements**”, and with a design year of 60 years or greater – this includes using the UK Climate Projections 2009 (UKCP09) high emissions scenario against the 2080 projections at the 50% probability level;
- Assessments should identify “**appropriate mitigation or adaptation measures**” covering the lifetime of the proposed infrastructure, taking into account “*the potential impacts of climate change using the latest projections*” (paragraph 4.42).
- Applicants should “*demonstrate there are no critical features of the design*” of the national networks infrastructure which may be seriously affected by “*more radical changes beyond that projected in the latest set of UK climate*

¹ i.e. the development’s potential contribution to, or impacts on, climate change.

² i.e. the potential for climate change to have impacts on the development.

projections” (paragraph 4.43). Any potential critical features should be assessed using “**maximum credible scenarios**”;

- Adaptation measures should be based on the latest UK Climate Projections, the national Climate Change Risk Assessment, and consultation with statutory bodies (paragraph 4.44). Adaptation measures themselves must also be assessed as part of any EIA and included in the ES;
- If proposed adaptation measures have consequential impacts these should be considered as part of the consideration of impacts as a whole (paragraph 4.45);
- Adaptation measures “*can be required to be implemented **at the time of construction** where necessary and appropriate*” (paragraph 4.46), but where there would be other effects on other aspects of the project or the environment, the Secretary of State may consider delayed implementation.

2. How the Northampton Gateway (NGW) application demonstrates mitigation of and adaptation to Climate Change

2.1 As described above, the Planning Act places climate change as one component of the wider pursuit of delivering sustainable development which in itself involves consideration of a range of economic, social and environmental objectives and priorities.

2.2 In this regard, climate change is a theme of relevance to numerous aspects and topics of the Environmental Statement (ES), and the application as a whole, and this is reflected in how it is presented and incorporated in the assessment undertaken as part of the Northampton Gateway project. Indeed, the Applicant’s ES Scoping Report (October 2016) described climate change as one of a number of “*cross-cutting issues and multi-faceted issues which will feature in a range of component parts of the application, including but not limited to, the EIA*” (ES Scoping Report, Document 5.1 paragraph 4.1.3 [APP-076]). The Scoping Report specifically described how climate change would be considered within the application, and said

“Climate change adaptation – this will run throughout the ES, but is of particular relevance to the assessment of flood-risk and drainage issues, and transport, as well as design with regard to energy efficiency;”

(ES Scoping Report, paragraph 4.1.3).

2.3 The ES chapters, where relevant, take account of the guidance on climate change adaptation and as such are considered to be fully compliant with the climate change related policy and guidance in the NPS.

2.4 The Northampton Gateway application makes explicit reference to the Planning Act 2008 and EIA Regulations and to the need to consider climate change issues. In addition to relevant consideration as part of ES topic specific chapters, the ES also includes two distinct, specific sections relating to climate change. These are:

- Section 1.5, Chapter 1 (and the Table in Section 1.2);

- Section 15.2 of Chapter 15 which includes a headed section on climate change.
- 2.5 These two specific sections of the ES seek to bring together in summary the key points regarding the relevance of, and consideration of, climate change. They draw upon, and cross-refer to, the assessments undertaken elsewhere in the ES as a direct response to the requirements of the NPS, and in light of the requirement on the Secretary of State to give due regard to climate change issues when determining NSIP applications.
- 2.6 The ES and application as a whole also considers and responds to issues associated with climate change as an integral part of the policy and assessment context and as part of the broader assessment of the extent to which the proposals are 'sustainable development'. In addition to the relevant parts of the ES, the **Design and Access Statement (DAS) (Document 6.9 [APP-379])** and the separate **Sustainability Statement (Document 5.2, Appendix 2.2)** explain how the proposed development responds to a range of factors including climate change and sustainability. This is expressed through consideration given to location, design (layout and buildings), and operation of the proposals, and is referred to below.
- 2.7 However, as referred to in Chapters 1 and 15 of the ES, and as set out below, the likely impacts of climate change on the proposed development, and the impact of the proposed development on the climate, have been considered in accordance with the EIA Regulations.
- 2.8 It is clear from the NPS that the main impacts and risks associated with climate change adaptation which should be considered relate primarily to water resources and flood-risk. With regard to water resources, the NPS is focused on potential storm events and increased flood-risk (including from rising sea-levels), but also potential water shortages as a consequence of generally hotter weather.
- 2.9 The NPS is also clear about the role of greenhouse gases in contributing to climate change now and in the past, with a direct link to issues associated with road transport and traffic, as well as building design, and energy efficiency (including on-site energy generation) which too forms part of the wider resource efficiency agenda.
- 2.10 There are not considered to be any critical factors of the design which may be severely affected by changes to the climate beyond that projected. Elements of the railway infrastructure could be considered to be 'safety critical', however, no part of the railway (existing or proposed) associated with the proposed development is in the floodplain, and as referred to below, the proposals will not create or exacerbate flood-risk off-site.
- 2.11 The ways in which climate change issues and impacts are considered by the Northampton Gateway application are set out below:

a) Sustainability Statement (Document 5.2, Appendix 2.2)

- 2.12 The ES includes a Sustainability Statement (appended to Chapter 2), which provides details of the proposed approach to delivering low carbon and energy efficiency design and construction measures at Northampton Gateway. The statement sets out an energy strategy for the approach to built development including the use of low and zero carbon technologies, with a specific aim of the strategy to reduce the inherent energy and associated carbon dioxide emissions of the development.
- 2.13 The Statement explains that this is to be delivered through a range of both passive and best-practice measures to reduce CO₂ emissions. A range of these measures are secured through the DCO, including the provision of electric vehicle charging on-site (via DCO Requirement 8(e)). The proposals will deliver a minimum of 5% of all car parking as electric vehicle charging points, with a further 15% provided for via passive provision to enable future connectivity subject to demand.
- 2.14 The approach proposed includes a clear objective to deliver BREEAM 2018 'very good' ratings (BREEAM Industrial 2018 'excellent' standard) on all warehouse buildings on the SRFI site – this is secured by Requirement 16 of the DCO.
- 2.15 The proposed energy strategy includes provision of the following low and zero carbon technology on the site:
- Air Source Heat Pump installation;
 - Solar Thermal Evacuated Tube installation;
 - Solar Photovoltaic (PV) Panel installation.
- 2.16 Although the final details of the measures proposed to achieve BREEAM Very Good are to be confirmed and agreed, the measures set out in the Sustainability Statement could provide an overall reduction in CO₂ of around 8.8% compared to notional development performance.
- 2.17 These measures are accompanied by other energy and resource efficiency design measures identified in the , such as high levels of air tightness, and adopting glazing specifications for the buildings to provide excellent thermal and solar performance to minimise summer solar heat gains while maximising daylight factors in the buildings.
- 2.18 The use of solar thermal and PV technology represents both mitigation and adaptation to climate change, by minimising carbon emissions through renewable energy generation, and high levels of energy efficiency, but also making use of the opportunities from a generally warmer climate to exploit suitable renewable technologies.
- 2.19 Opportunities will also be explored for integrating a 'smart grid' approach which could involve the use of battery storage paired to the solar PV system, and which could be used to serve the electric vehicle charging infrastructure proposed.
- 2.20 Associated with the above, it is also relevant to note SEGRO's corporate approach to environmental and sustainability. The company, who would develop and deliver Northampton Gateway if approved, has a range of initiatives and standards in place

based around ambitious carbon reduction and broader sustainable development objectives and targets.

b) ES topic specific chapter – Water Resources and Drainage (chapter 7)

- 2.21 The assessment undertaken is presented in the context of the policies of both the NPS and the NPPF (Section 7.2 of the Chapter).
- 2.22 The site is confirmed as being in Flood Zone 1, the area of lowest risk with a less than 1000 year annual probability of river (or sea) flooding. However, the implications of climate change are clearly and explicitly referred to in the assessment, including in the assessment of the existing (baseline) conditions in Section 7.4 of the Chapter. Reference is made to the modelling which indicates that with a 100 year plus 65% climate change flood event the lower parts of the Main Site close to the existing M1/A508 roundabout are at risk of potential flooding due to a culvert which becomes under capacity. Although this identified risk is associated with the Courteenhall Brook (which is only classified as an 'Ordinary Watercourse'), it is confirmation that the impacts of climate change on the site have been considered.
- 2.23 Similarly, the assessment also refers to small parts of the highway mitigation measures being in Flood Zones 2 and 3 (Pury Road/A508), but confirms that the road is already raised above the floodplain, and that the floodplain would be unaffected by the proposed junction works even with the projected impacts of climate change.
- 2.24 The technical Assessment of flood-risk is provided in **Appendix 7.1 (Flood Risk Assessment report)**, to which the Chapter refers. Also, **Appendix 7.3 (Sustainable Drainage Statement)** is of direct relevance to the consideration of and responses to climate change, as it sets out the principles of the drainage design for the development and summarises the reasoning behind the chosen design. This includes justification of specific flow rates, volumes of attenuation and the level of treatment provided to runoff, all of which have been explicitly determined and assessed with regard to the longer-term impacts of climate change.
- 2.25 Climate change is assessed differently for rainfall events (where it is applied as an increase in rainfall intensity, measured in mm/hr) and fluvial flooding (represented by an uplift in volume of flow, measured in m³/sec). The appropriate allowances are recommended by the Environment Agency and in the context of this application have been agreed with the Lead Local Flood Authority and the Environment Agency.
- 2.26 For drainage, the assessment considers the implications and requirements for a 1 in 200 year event plus 20% climate change allowance (for areas in the Upper Nene catchment) or 100 year plus 20% climate change (elsewhere). The effect of this is to ensure that an additional volume of attenuation is provided within the on-site drainage network to account for future volumes that more intense (i.e. climate change affected) rainfall events create. In this context, the mitigation section of Chapter (Section 7.6) sets out the required volume of surface water attenuation (paragraph 7.6.19) through the provision of new basins or ponds.

- 2.27 For fluvial flood risk, the assessment considers the impact of a 65% uplift in flow in a 1 in 100 year event and suggests mitigation in the form of compensatory storage, to ensure that such volumes can be managed on site. The details of this strategy are presented within the Technical Note that accompanies the FRA.
- 2.28 This requirement has feed into the preparation of the Illustrative Masterplan (**Document 2.11**), both in terms of the land-take, and suitable low-lying locations of these water features, and has also been considered in other parts of the ES (e.g. Ecology and Nature Conservation), with the potential for biodiversity impacts and benefits assessed.
- 2.29 Potential off-site flood-risk and drainage impacts have also been explicitly assessed, and are reported in the ES (and relevant technical appendices). Informed by hydraulic modelling, the mitigation proposed ensures that no land outside the ownership of the applicant will be at an increased risk of fluvial flooding. The conclusions regarding off-site effects includes:
- betterment in regards to water quantity control, particularly for higher return period events (e.g. storm events of heavy rainfall) by restricting the volume generated by the natural catchment of the Wootton Brook and the culvert under the M1, the development will help to reduce the likelihood and severity of flooding downstream of the Main Site. This is also true for the Roade bypass route which ultimately drains to the River Tove.
 - the proposed raising of land around the main site access roundabout and adjacent to the A508 to impound water within the site boundary, and forming floodplain compensation areas adjacent to the existing channel of the Courteenhall Brook (on the southern side), will remove areas proposed for development from the floodplain, and also reduce flows downstream of the M1 in extreme flood events.
- 2.30 Therefore, the ES has assessed the expected implications of climate change of and from the Proposed Development on water and drainage, and both ensured the site is designed to manage these effects, and without creating adverse off-site effects. This includes consideration of any potential cumulative effects with other committed developments nearby (Section 7.8 of the Chapter).
- 2.31 The drainage and flood risk mitigation measures and related actions are secured by DCO Requirements 17, 18 and 19, and for the highway works, Schedule 13 Parts 2 and 3 of the DCO.

c) ES topic specific chapter – Air Quality (chapter 9)

- 2.32 Air quality is often assumed to be directly relevant to the climate change agenda by connection to the role of carbon dioxide emissions as a significant causal factor to climate change. However, the NPS is clear that these are distinct issues, and refers to issues regarding air quality separately to carbon emissions, with the latter referred to directly in the context of climate change (as referred to in the Introductory section above).

- 2.33 As described above, the NPS summarises the key implications of climate change in terms of adaptation and mitigation. With relevance to air quality, these can be summarised as:
- An increase in annual average temperatures;
 - More common drought and/or heatwaves;
 - Weather events - storms or wildfires;
- 2.34 With regards to air quality, an increased likelihood of longer drier spells could have implications on 'dust' – this is explicitly assessed as part of the Air Quality Assessment, not only with regard to the construction phase, but also with regard to the proposed aggregates terminal on-site. Appropriate mitigation and adaptation measures are proposed, set out in Section 9.6 of ES Chapter 9. These are secured through the CEMP (Requirement 12), with regard to soil protection and management measures (Requirement 13), and through the Requirement in the DCO related to the approval of detailed design (Requirement 8). This includes the use of water suppression systems, and wheel washing, to reduce issues with dust both from stored materials on-site and from vehicle movements during construction and operational phases.
- 2.35 The focus of the air quality assessment contained in the ES is driven largely by the local context, and by the emphasis on efforts to address other forms of air pollution, namely Nitrogen Dioxide (NO₂) and particulates (PM₁₀). As set out in the NPS (paragraph 2.35, quoted above), rail freight movements produce up to fifteen times lower NO_x emissions and nearly 90% lower PM₁₀ emissions. Therefore, direct connections and commonalities exist between carbon reduction measures and actions and measures intended to reduce effects on overall air quality because of the shared focus on reducing car and other road transport as key sources of these emissions, as well as carbon dioxide. In this regard, although not focused on carbon dioxide reduction measures, the Air Quality Assessment is of direct relevance to the climate change. A range of measures to enable and encourage travel by sustainable modes are secured via Requirement 4 of the DCO.
- 2.36 The ES concludes that the Proposed Development will have a negligible effect on air quality overall, but with regards to the greenhouse gas emissions associated with climate change, Northampton Gateway would deliver a positive contribution. As an SRFI, a key and explicit objective - arguably the *raison d'être* for the proposal - is enabling the shift of freight from road to rail. By reducing the amount of HGV travel, the proposals will help deliver a reduction in CO₂ and deliver a more carbon efficient transport system. The Air Quality chapter, based on analysis contained in the Transportation Chapter of the ES (see below), provides a quantified estimate of the likely benefits in terms of a reduction of 92 million fewer HGV miles on the UK road network.
- 2.37 As set out above, the NPS is clear about the role of SRFIs as part of the 'low carbon economy' sought by Government. SRFIs like Northampton Gateway are central to the NPS which encourages an expanded network of SRFIs in part due to the climate change benefits, as well as road congestion benefits, they deliver.

d) ES topic specific chapter – Transportation (chapter 12)

- 2.38 As referred to above, there are significant overlaps between consideration of climate change and the wider objectives associated with delivering 'sustainable development' more generally. The links between transport and climate change are generally well known, with carbon dioxide (CO₂) being one of the main greenhouse gases which has caused and continues to contribute to climate change.
- 2.39 The Transportation chapter of the ES makes numerous references to the objectives of carbon reduction of national and local transport and planning policies. With reference to objectives and policies of the West Northamptonshire Joint Core Strategy, and Northamptonshire Transportation Plan, it is clear that the expectation is that climate change mitigation is to be achieved through actions such as:
- *Promoting sustainable design and construction in all new developments.*
 - *Ensuring new developments promote the use of sustainable travel modes.*
 - *Encourage the use of sustainable travel and consequently promote developments which will maximise the use of alternative travel modes in order to combat congestion, reduce carbon emissions and address social exclusion for those in both rural and urban areas who do not have access to a private car.*
 - *Support the introduction of effective and attractive sustainable transport options that will encourage lasting modal shift in Northamptonshire.*
- 2.40 Brought forward in the context of these and other local objectives, and in the context of the wider requirement to consider climate change as part of the achievement of sustainable development, there are several ways in which the Northampton Gateway ES addresses climate change in the context of Transportation. These can be summarised as:
- By enabling a shift of freight from road to rail - a significantly more energy and carbon efficient form of transport;
 - By mitigating the likely transport (traffic) impacts through a package of road improvements to relieve congestion;
 - By encouraging and enabling access to the site by a range of modes of transport, including public transport, walking and cycling as alternatives to the car.
- 2.41 The Transportation Chapter and associated Transport Assessment (TA) (Document 5.2, Appendix 12.1) and its Appendices provide a detailed and comprehensive explanation of the likely effects and impacts of the proposed development.
- 2.42 As an SRFI, the principal contribution made to mitigating the effects and reducing the contribution to climate change is through enabling and planning for a continued shift from road to rail. Section 12.7 of ES Chapter 12 includes an assessment of the HGV mileage reduction benefits based on a worked example of the potential flows of traffic to and from the SRFI. The assessment suggests it would deliver a reduction of 92 million HGV miles per year from the road network once fully operational. This is a mode shift from road freight to rail freight equivalent to 969 HGV loads or 1,938 two-way HGV movements per day. This equates to over £50 million per year in monetised environmental benefits calculated using the methodology set out in the DfT Guide to

Mode Shift Revenue Support Scheme which reflects the broader environmental benefits from a reduction in road traffic and a shift to rail. Details are provided in Appendix 34 of the Transport Assessment. With each tonne of freight moved by train producing up to 70% less carbon than the equivalent trip by road, the contribution made to reducing the role of transport and economic activity on climate change is clear.

- 2.43 However, the impacts associated with carbon reduction include a range of other transport measures and residual effects, including delivering improvements (i.e. reductions) in local congestion on the surrounding road network and congestion as compared to the current baseline conditions. The expected impacts are set out in detail in Section 12.7 of the ES, but include a range of network efficiency and capacity improvements, with resultant reductions in traffic congestion and queuing. In summary, the strategic modelling demonstrates that the proposed highway mitigation works remove existing congestion 'bottlenecks' on the highway network, particularly at M1 Junction 15 and 15A, and on the A508 through Road. Therefore, existing traffic is forecast to reassign to use the principal and strategic road network, with increases in traffic forecast on the A508 between the A5 and M1 Junction 15, and at M1 Junction 15 and 15A.
- 2.44 The highway mitigation proposals remove existing constraints and allow the A508 to accommodate additional traffic and function as intended as part of the Northamptonshire County Council road freight network. This leads to a consequential reduction in traffic on many of the local roads and villages surrounding the SRFI, including the A508 Northampton Road and High Street through Road; Blisworth Road/Courteenhall Road, Towcester Road, High Street, Northampton Road, and Chapel Lane in Blisworth, Rectory Lane in Milton Malsor, and Wootton Road through Quinton. The proposed A508 Road Bypass leads to forecast traffic reductions through Road of around 74% and 52% in the morning and evening peak hours and around 60% throughout the day. This would alleviate congestion within the village and at nearby junctions (study area junctions 24, 25 and 26 referred to in the TA).
- 2.45 The proposals will also deliver new opportunities, and improved connectivity, for non-car users further enabling a modal shift with regard to the movement of people. This includes new and improved cycling infrastructure, and new pedestrian facilities including at Junction 15 of the M1. The Public Transport Strategy sets out the ways in which the scheme will support and enable travel by bus, with the Framework Travel Plan providing a context for a range of site wide and occupier measures to encourage and incentivise travel by more environmentally friendly (low carbon) alternatives to the car. This also includes the provision of electric vehicle parking and charging facilities on-site.
- 2.46 The ES as a whole identifies that as a new distribution hub allowing HGV journey distances and overall mileage reductions on the road network, the modal shift and resultant reduction in overall HGV mileage represents a permanent beneficial impact of major significance.
- 2.47 The residual effects of the Proposed Development and highway mitigation works in general traffic impact terms can be summarised as a permanent beneficial impact of

major significance with regard to traffic flows and congestion relief which are also of direct relevance to greenhouse gas emissions.

- 2.48 The committed actions and measures referred to above are secured through the DCO via Requirements 4, 5, 6 and 8, and through the Section 106.

e) Other parts of the application

Landscape and Green Infrastructure

- 2.49 The Northampton Gateway proposals include extensive areas of green infrastructure containing a range of retained and new habitats on-site. The proposed landscape strategy will support and improve biodiversity enhancements as compared to the arable agriculture dominated habitats, and includes retention of key features and habitats where possible, including the mature woodlands and many hedgerows.
- 2.50 Also, with regard to adaptation, in conjunction with the surface water mitigation measures described above, the green infrastructure provided can manage and protect water resources, and soils, as well as support and protect species which may be displaced or challenged as a result of climate change through new habitat provision. It can ensure shading and cooling opportunities for employees and visitors to the site, including those making use of the walking and cycling routes.
- 2.51 The Landscape and Ecological Management Plan (LEMP) is secured via DCO Requirement 11, and will be the route through which choices of planting, and their management and maintenance, is agreed and implemented. The iterative nature of the LEMP and its monitoring and review enables changes, including those associated with climate change, to be taken into account in the delivery and development of its objectives.
- 2.52 The table below is extracted from Chapter 4 of the ES, and summarises the range of green infrastructure and landscape areas and features contained and/or proposed within the development:

Table: Summary of Landscape and Green Infrastructure Areas (Main Site and Road Bypass Corridor)

Green Infrastructure Landscape Area/ Habitat/ Feature	Area/ Quantity (Approx.)
Existing Conserved Woodland/ Tree Groups	10.70 Ha
Proposed Woodland/ Tree Groups/ Structure Planting (Main Site)	23.35 Ha
Proposed Woodland/ Tree Groups/ Structure Planting (Bypass Corridor)	5.70 Ha
Existing Conserved Hedgerows	3,800 Lin m
Proposed Hedgerows	13,000 Lin m
Existing Conserved Species Rich Grassland/ Meadow/ Non Agricultural Grassland	4.70 Ha
Proposed Conserved Species Rich Grassland/ Meadow/ Non Agricultural Grassland	26.60 Ha
Proposed SuDS features/ Wetlands/ Ponds	3.00 Ha

f) Cumulative Impacts

- 2.53 The Northampton Gateway application includes consideration of the likely cumulative impacts with relevant committed development in the surrounding area, as well as the potential cumulative impacts with the emerging 'Rail Central' SRFI on land to the immediate west. The assessment of the likely effects of Northampton Gateway identified in the ES includes consideration of the likely effects with committed development, and any additional of different potential effects when Rail Central are also taken into account.
- 2.54 With regards to the implications of climate change on flood-risk and surface water, all new developments are required to meet regulations regarding mitigation and management of flood-risk, with the required adoption of sustainable drainage techniques. Therefore, with all new developments including allowances for climate change within their drainage strategies, a cumulative positive effect is expected across common drainage catchment areas, including with regard to reductions in downstream flood-risk.
- 2.55 Building regulations are increasingly stringent regarding the carbon and energy efficiency of new buildings, meaning the stock of new residential and commercial buildings is increasingly resource efficient, and contributes less to climate change than older buildings.
- 2.56 The above cumulative benefits are relevant to Northampton Gateway with committed developments identified and allocated through the West Northamptonshire Joint Core Strategy (including the SUEs at Northampton South, and South of Brackmills), and also to Rail Central.
- 2.57 As discussed at ISH4 of the Northampton Gateway Examination, there is some uncertainty about the details of the Rail Central SRFI with an ongoing review of the transport modelling and highways mitigation package. However, on the assumption

that the Rail Central scheme ultimately identifies a package of proposals which can adequately mitigate the likely transport impacts, a further and potentially significant cumulative impact would be the modal shift benefits associated with two SRFIs. The NPS identifies that rail freight produces 70% less CO₂ than road freight, and is clear about the role of SRFIs in achieving a modal shift and delivering against a range of environmental and climate change objectives.

2.58 As referred to above, Northampton Gateway alone could remove significant numbers of HGVs from the national road network, with potentially significant carbon and congestion benefits. Rail Central would serve an identical function in enabling a shift of freight from road to rail, and as submitted intends to see a similar level of rail freight over the longer-term. Therefore, combined the two SRFIs can reasonably be expected to deliver increased climate change related benefits to those seen by Northampton Gateway alone.

3. Summary of NGW Climate change mitigation and/or adaptation

3.1. As set out above, issues relating to climate change mitigation and adaptation run through a number of themes within the topics of the ES, including water and drainage, air quality, and transport.

3.2. This report sets out the ways in which climate change has been considered, both regarding potential impacts on the proposed development, and potential impacts of the proposed development on climate change. It therefore also serves to identify the ways in which the application has met the requirements of the EIA Regulations to assess the potential impacts on 'climate'.

3.3. The relationship of the proposed development with climate change is linked to the broader resource and energy efficiency agenda. It forms a part of the consideration given to how the proposed development will contribute towards reducing and minimising carbon dioxide emissions which itself forms a key part of national and international policies and objectives regarding the climate change mitigation agenda.

3.4. There are not considered to be any critical factors of the design which may be severely affected by changes to the climate beyond that projected.

3.5. Elements of the railway could be considered to be 'safety critical'. However, no part of the railway (existing or proposed) associated with Northampton Gateway is in the floodplain.

3.6. The table below summarises the climate change related mitigation and adaptation measures, and cross-refers to how they are secured through the DCO and associated documents.

<u>Measures/Actions</u>	<u>Brief description</u>	<u>DCO Requirement or other document securing delivery</u>

<u>Overview of key mitigation measures – minimising the <i>effects of the scheme on climate change</i></u>		
Encouraging modal shift of freight from road to rail	Sits at the heart of the purpose and function of SRFIs, and is a major driver behind the Government’s policy to encourage and enable an expanded network of SRFIs with direct reference to the carbon reduction, and road congestion, benefits.	<i>Requirement 3 Components of development and phasing.</i>
Encouraging and enabling transport by alternatives to the private car	Including public transport and walking/cycling through a range of direct provision, Travel Plan measures, and funding contributions.	<i>Requirement 4 Sustainable Transport Article 12 and Schedule 5 of the DCO. S106 Obligation - Bus Services Fund DCO Schedule 15 – Membership, Role and Protocol of the Sustainable Transport Working Group</i>
Provision of electric vehicle parking and charging	Enabling adoption of lower carbon transport choices – reduces the CO ₂ impacts of car travel to and from the site.	<i>Requirements 8 and 9 Detailed design approval.</i>
Sustainable drainage measures and flood-risk	The site is being designed to accommodate surface water, including having taken account of the likely increases in storm events and more extreme weather due to a changing climate. Also of value to habitat creation and and biodiversity enhancement.	<i>Requirements 8 and 9 Detailed design approval. Requirements 17, 18 and 19 Flood Risk and surface water drainage.</i>
Construction and building ‘design’	<ul style="list-style-type: none"> ○ Resource efficiency – water and energy – to help reduce the carbon footprint of the proposed development, and to reduce the environmental impact of the development overall. ○ Renewable energy and efficient building fabric and services – to minimise energy use, and to contribute towards low carbon (renewable) energy generation. 	<i>Requirement 16 Building sustainability.</i>
<u>Summary of key adaptation measures - responses to the <i>effects of climate change on the development</i></u>		

SUDS and flood-risk reduction/mitigation	The site is being designed to accommodate surface water, including having taken account of the likely increases in storm events and more extreme weather due to a changing climate.	<i>Requirements 8 and 9 Detailed design approval. Requirements 17, 18 and 19 Flood Risk and surface water drainage.</i>
Dust suppression measures	Relevant to climate change, as well as air quality in general, in the context of the potential for longer, hotter summers.	<i>Requirements 8 and 9 Detailed design approval – including measures proposed as a minimum at the operational aggregates terminal.</i>
Construction and building ‘design’	<ul style="list-style-type: none"> ○ Resource efficiency – water and energy – relevant in a context where there may be more common water shortages in the future; ○ Renewable energy and efficient building fabric and services – in part a response to longer, hotter summers which provide greater opportunities for on-site renewable energy generation (solar and PV). 	<i>Requirements 8 and 9 Detailed design approval. Requirement 16 Building sustainability.</i>
Extensive infrastructure landscaping and green	Including retained and provision of new habitats on-site to support biodiversity, and vegetation cover.	<i>Requirement 10 Provision of landscaping. Requirement 11 Landscape and Ecological Management Plan.</i>