# 15. CUMULATIVE IMPACTS

## 15.1 INTRODUCTION

15.1.1 This chapter presents an assessment of the likely cumulative impacts and effects of the Proposed Development. It draws together conclusions from across the ES about the likely residual effects of the Northampton Gateway proposals.

15.1.2 The approach has regard to the advice and suggested methodology set by PINS Advice Note 17, and this process began during ES Scoping.

15.1.3 Cumulative impacts comprise the combined effects of reasonably foreseeable changes arising from the Proposed Development, and other development, within a specific geographical area and over a certain period of time. The significance of cumulative impacts needs to be assessed in the context of characteristics of the existing environment. This is to ensure that all of the developments:

- Are mutually compatible; and
- Remain within the environmental capacity of the area and its environs.

15.1.4 There are two types of cumulative impacts that require consideration and which feature in this Chapter:

1. The combined or synergistic impacts or effects caused by a number of different likely impacts on a particular receptor. This could relate to impacts at either or both the construction and operational phases which, acting together, may cause a more significant impact collectively than they might individually. An example could be the culmination of disturbance from dust, noise, vibration, and lighting or other visual intrusion on sensitive wildlife (e.g. certain bat species) adjacent to a construction site. These are referred to as 'Impact Interactions'; and

2. The combined impact of the Proposed Development together with other known and committed developments, i.e. schemes with planning permission or allocations in local development plan documents. The topic specific ES chapters already include consideration of these types of potential cumulative impacts resulting from the Proposed Development with Committed Developments. This Chapter seeks to ensure that the cumulative effects of any topic specific interactions with committed development is also considered.

15.1.5 The ES has considered the potential for impacts with two allocated sustainable urban extensions – Northampton South, and South of Brackmills in accordance with ES Scoping input – with the exception of the Transport chapter which has considered the Proposed Development in the context of all of the growth and committed development planned through the Joint Core Strategy. The details of the latter was agreed with the relevant consultees through the Transport Working Group, and is explained in further detail in Chapter 12 of the ES.

15.1.6 The Air Quality, and Noise and Vibration chapters which rely on data produced through the Transport Assessment process equally take account of the cumulative effect of the commitments assumed in the Transport Assessment. This much wider list of commitments are not relevant to most other Chapters, and will therefore not be considered here.

15.1.7 In addition to item 2 in paragraph 15.4 above, this Chapter also provides a summary of the assessment of the potential cumulative effects should the emerging 'Rail Central' SRFI proposed to the west of Northampton Gateway also proceed in addition to the committed developments.

15.1.8 The 'impact interactions' have been assessed in the relevant technical chapters of this ES, with each thematic chapter identifying the relevant receptor or receptors likely to be affected. For example, the cumulative impacts of construction activity, considering noise, air quality, and lighting impacts on wildlife and biodiversity within and close to the site are addressed in the Ecology Chapter, with relevant cross-references to the relevant thematic chapters where appropriate.

15.1.9 A summary overview of impact interactions in relation to representative receptors is provided in this chapter which seeks to provide a balanced judgement of the likely overall effects on representative receptors. This assessment is based on the experience of the impact of similar types of schemes and the types and sensitivities of receptors being assessed. Primarily the assessment of impact interactions is approached from the perspective of likely changes compared with baseline conditions at specific sensitive receptors, based on information presented in the technical chapters of this ES.

15.1.10 The main focus is on the cumulative effects on human receptors or communities rather than a range of environmental receptors which are covered in the various ES Chapters. However, the likely cumulative impacts on on-site ecological receptors is considered.

## 15.2 ASSESSMENT OF IMPACT INTERACTIONS

15.2.1 This assessment seeks to identify broad representative sensitive receptors to provide an appraisal of likely cumulative effects. It is not intended to address each and every individual receptor which has been covered in the technical ES chapters. The assessment set out in each ES chapter seeks to identify ways to effectively minimise or eliminate adverse effects on the key receptors so as to limit and manage the residual effects. As described above, this cumulative assessment considers those residual effects in combination.

15.2.2 It is considered that such issues as geology, soils and groundwater, agricultural land, on-site cultural heritage (archaeological) features, are topic specific and highly site specific, and therefore are not considered further in this wider assessment. They would be affected by the Proposed Development, but would not be affected in more than one way by the process of development, and in that sense are not as useful or relevant to this assessment of likely or potential cumulative impacts.

15.2.3 The landscape related impacts are considered as part of the visual impacts. This is because 'the landscape' is a receptor in its own right, but the assessment of visual effects intrinsically considers the extent and nature of that change in terms of the visual effects on individual addresses or communities. This requires judgements to be formed using the various conclusions reached in Chapter 4 of the ES. The analysis of the wider landscape effects (at national and landscape character area scale) is provided in Chapter 4, and in Appendix 4.4.

15.2.4 Table 15.1 below presents a summary of the likely impact interactions between the relevant environmental topics following implementation of the recommended mitigation measures set out in the relevant ES chapters. The narrative below the table provides a fuller overview of the likely cumulative effects on these representative receptors during the construction phase.

15.2.5 The construction process will have a range of different impacts on different communities close to the Proposed Development. It is important to note that the impacts will be temporary and intermittent during construction works, and that the impacts on any given community or receptor change as the construction activity moves, and progresses, within the Order Limits. An overarching Construction Environmental Management Plan (CEMP) has been submitted (Appendix 2.1) and sets out how environmental effects during construction will be managed, reduced and controlled. Furthermore, the construction works will be phased to minimise effects and bring forward mitigation measures early where practical. This will include measures to manage dust, construction noise, and lighting, as well as the routeing of construction traffic.

**Table 15.1: Matrix of impact interactions – construction phase (temporary effects)**

| Significance of impact at representative receptors | | | | | |
|---|---|---|---|---|---|
| **Topic** | **Residents (in vicinity of Main Site)** | **Residents (in vicinity of Bypass)** | **Users of local rights of way (pedestrians, cyclists and equestrians)** | **Users of Road Network** | **On-site Ecology/ Biodiversity** |
| Socio-economic | *Minor Beneficial* | *Minor Beneficial* | *Negligible* | None | None |
| Landscape and Visual impacts | *Minor to Major Adverse* | *Minor to Major Adverse* | *Moderate Adverse* | *Minor to Moderate Adverse* | None |
| Drainage and Flood Risk | *Negligible* | *Negligible* | *Negligible* | *Negligible* | *Negligible* |
| Noise | *Negligible to Minor Adverse* | *Negligible to Minor Adverse, with occasional Major Adverse* | *Negligible* | *Negligible to Minor Adverse* | *Negligible* |
| Air Quality | *Negligible* | *Negligible* | *Negligible* | *Negligible* | *Negligible* |
| Lighting | *Negligible to Moderate Adverse* | *Negligible to Moderate Adverse* | *Negligible* | *Negligible* | *Negligible* |
| Transport | *Moderate Adverse* | *Minor Adverse* | *Minor Adverse* | *Moderate Adverse* | None |
| Overall Interaction of likely construction effects | ***Minor to Moderate Adverse*** | ***Minor to Moderate Adverse*** | ***Negligible to Minor Adverse*** | ***Negligible to Minor Adverse*** | ***Negligible to Minor Adverse*** |

15.2.6 Nevertheless, there will inevitably be some adverse effects from construction, particularly during the earliest phases. The greatest impacts are predicted during the enabling works when the Main Site will be cleared in advance of the earthworks bunding (and new planting) being fully in place. These impacts, including noise, will be most apparent at the receptors on the west of the M1 that are furthest from the motorway and closest to the Main Site i.e. those nearest to the western Main Site boundary. – Those receptors to the east of the M1 (e.g. in Collingtree) are less likely to experience any adverse effects due to construction noise because of the existing noise from traffic on the M1.

15.2.7 Similarly, the landscape and visual impacts of construction will be most pronounced during the early stages, and before the earthworks bunding is complete when there will be some visibility of the site works from surrounding viewpoints and receptors near the Main Site. However, the earthworks will begin as part of the first stages of work on site, and the bunding will be progressively formed as material is moved within the Main Site. Therefore, the visual (and noise, and lighting) impacts will diminish as this process progresses, with the earthworks providing mitigation from the worst of the effects.

15.2.8 During the construction phase of the Roade Bypass, some adverse impacts are expected at a smaller number of receptors. The properties closest to the route are likely to experience some adverse noise impact, which at times could cause a significant adverse effect (as referred to in Table 15.1). Again, the impacts will be reduced by the landscaping once implemented, and by the fact the bypass is partly in cutting. However, the duration of the construction phase will be shorter for the bypass than the Main Site, so any adverse effects will be experienced for a shorter period of time.

15.2.9 Use of Best Practicable Means and other measures in the CEMP will help to minimise the extent and duration of these temporary construction effects. The CEMP will also ensure no adverse impacts from construction regarding flood-risk or drainage issues.

15.2.10 It should be noted that a positive impact is predicted as a result of the creation of jobs during construction of the Proposed Development.

15.2.11 Overall, the construction phase is shown to have a range of temporary adverse effects on all receptors.

15.2.12 Table 15.2 summarises the impact interactions between the relevant environmental topics assessed once the development is operational and following the implementation of the recommended mitigation measures.

15.2.13 As shown, many of the likely impacts on the identified receptors are in a range from negligible to minor, with some larger in magnitude, and also a range of both adverse and beneficial impacts. This is a result of the significant design and mitigation measures proposed, and represents a summary of a comprehensive assessment which identifies a range of likely effects.

**Table 15.2: Matrix of impact interactions – Operational, post mitigation and once established**

| Significance of impact at representative receptors | | | | | |
|---|---|---|---|---|---|
| **Topic** | **Residents in vicinity of Main Site** | **Residents in vicinity of Bypass** | **Users of local rights of way (pedestrians, cyclists and equestrians)** | **Users of Road Network** | **On-site Ecology/ Biodiversity** |
| Socio-economic | *Moderate to Major Beneficial* | *Moderate to Major Beneficial* | *Negligible to Minor Beneficial* | *Minor Beneficial* | None |
| Landscape and Visual impacts | *Negligible to Moderate Adverse* | *Negligible to Minor Adverse* | *Negligible to Moderate Adverse* | *Negligible to Minor Adverse* | *Minor Adverse to Minor Beneficial* |
| Drainage and Flood Risk | *Moderate Beneficial* | *Moderate Beneficial* | *Negligible* | *Negligible* | *Negligible to Minor Beneficial* |
| Noise | *Negligible to Minor Adverse* | *Negligible to Minor Adverse*[1] | *Negligible to Minor Adverse* | *Negligible to Minor Adverse* | *Minor Adverse* |
| Air Quality | *Negligible* | *Minor to Moderate Beneficial* | *Negligible* | *Negligible* | *Negligible* |
| Lighting | *Negligible to Minor Adverse* | *Negligible to Minor Adverse* | *Negligible* | *Negligible* | *Negligible* |
| Transport | *Moderate to Major Beneficial* | *Moderate to Major Beneficial* | *Negligible to Minor Adverse* | *Major Beneficial* | None |
| **Overall Interaction of effects** | ***Negligible to Minor Adverse*** | ***Minor to Moderate Beneficial*** | ***Negligible to Minor Adverse*** | ***Moderate to Major Beneficial*** | ***Negligible to Minor Beneficial*** |

[1] *– also see further narrative at paragraph 15.29 below.*

15.2.14 A judgement has been reached to identify an overall interaction of effects, and there is a degree of balance required in assessing overall cumulative effects given the likelihood of a range of negligible, adverse and beneficial effects and the fact that these receptors represent numerous different individual addresses or locations.

15.2.15 The Proposed Development would result in changes to the site and immediate surrounding (local) landscape, and the introduction of new large-scale built development and infrastructure will clearly be adverse without appropriate mitigation. However, the efforts made by the Applicant to devise a comprehensive landscape and earthworks strategy, coupled with the natural topography of the Main Site and surrounding area, mean that once operational receptors will mostly see the new landscaped bunding and planting, rather than the built development (buildings and terminal). The Bypass too will introduce a new road into what is currently farmland, but will be largely screened by being partly in cutting, plus earthworks, planting and selective use of fencing. Therefore, the change needs to be viewed in this context, and contrasted with a change to views where the new urban elements were prominent and more visible in the landscape.

15.2.16 Similarly, while there would be change for users of the existing rights of way networks, there would also be new foot and cycle links provided within the Main Site, along the A508, and along the Bypass corridor. Existing connections and routes, while subject to diversion or change would be retained with new routes added. This includes an underpass beneath the Bypass to retain the existing bridleway access west of Roade for walkers, cyclists and equestrians linking route KZ10 and RZ1. The fact that the environmental context would change for some parts of the existing public rights of way network is reflected in the overall assessment of impacts – for example, the change from a route through farmland to a more managed and semi-urban environment around the periphery of the Main Site – but it also seeks to reflect the fact that existing and new routes would be provided.

15.2.17 As described in paragraph 15.12 above, the landscape related impacts are considered as part of the visual impacts. In assessing the overall landscape character effects judgements are required to balance the change created by the proposed introduction of new built development with the benefits of retained existing woodland and other features and the significant new landscaping proposed, including new footpaths and accessible open spaces.

15.2.18 On-site habitats are currently dominated by open arable fields which tend to support relatively limited biodiversity. The impact of the Proposed Development will see loss of existing hedgerows and other habitats across the Proposed Development site, but these will be replaced (or translocated where appropriate), and the existing woodland habitats retained within the on-site landscaping particularly on the Main Site. With substantial new woodland, additional hedgerow planting, and new aquatic habitats created, the overall effects on biodiversity and ecology are considered to be at worst negligible, but likely to be minor beneficial. This judgement which balances the loss of existing habitats and disturbance to some species with a net gain in local biodiversity as a result of new habitat creation, including the additional hedgerow and other planting which deliver a net increase overall compared to the existing.

15.2.19 As shown in Table 15.2, there are numerous likely negligible or beneficial residual impacts. Included in this judgement are the reductions in through-traffic in local village centres as a result of the improvements at Junction 15, 15A, the Bypass and the Highways Mitigation Works. This will deliver some local benefits in terms of noise, with Major Beneficial noise impacts predicted through the centre of Roade as a result of the Bypass. However, a small number of properties close to the Bypass are expected to experience relatively large changes in road traffic noise levels (up to Major Adverse in scale, but not significant in terms of the resulting effect). The Main Site is unlikely to generate any significant operational noise effects, with mostly negligible or minor impacts expected at nearby receptors. Road traffic noise is the only residual issue which is to be addressed through additional specific mitigation at a small number of properties.

15.2.20 The overall summary of Air Quality effects is reported as negligible, but this masks the detailed assessment results which show that many local areas will see small-scale improvements in air quality over the longer-term once the Proposed Development and all mitigation measures are in place. As referred to below, relevant parts of this assessment (as for the noise assessment) consider the Proposed Development alongside all of the committed and planned growth in the West Northamptonshire Joint Core Strategy.

15.2.21 Negligible lighting effects can be secured through technological and physical measures (including the mounding/bunding screening). The Table above also reflects that off-site flood-risk will be improved for downstream communities as a result of the drainage strategy proposed.

15.2.22 However, the main benefits are shown to be those relating to 'socio-economic' – employment, Gross Value Added to the economy, and business rate retention – and transport. The residual improvements to transport reliability, journey times and reduced congestion will have a range of significant benefits, of relevance to environmental, health and economic issues and most directly related to the communities nearest to the Proposed Development.

15.2.23 Taking all of the likely effects into account, once the Proposed Development is complete and operational, with the mitigation and design measures fully implemented and established, the overall residual effects on local residents closest to the Main Site is anticipated to be negligible to minor adverse, with Minor to Moderate Beneficial effects for residents in Roade. Moderate to Major benefits are likely to local road users, including local residents but also all users of the part of the network around Junction 15 and 15A.

**Human Health**

15.2.24 The Proposed Development is likely to have a negligible effect on human health overall, but in relation to several categories of potential impacts is likely to have a beneficial effect. The assessment has considered potential direct health impacts, but also opportunities to enable and encourage health and healthy lifestyles (the 'health promotion' agenda) which can have less direct, but still relevant, impacts on health.

15.2.25 Key examples of the ways in which the Proposed Development is likely to produce positive health impacts are under the 'Socio-economic aspects', where provision of new employment and skills opportunities is seen as a direct and positive part of the wider health and well-being agenda. The proposals are not in or close to particularly deprived areas, but there are pockets of relative deprivation relatively nearby, and if approved the project would generate positive opportunities to further improve health and well-being as result of a range of new employment opportunities. The provision of new employment close to Northampton and other communities will reduce the need for out-commuting from South Northants to other areas, or, for example, from Northampton to Milton Keynes. This ability to work closer to home can also have positive, albeit less direct well-being and lifestyle impacts, as well as reducing the environmental effects of travel.

15.2.26 Related in part to these same issues, the Proposed Development would deliver new links and opportunities for walking and cycling. This not only includes links to and from the SRFI site from Collingtree and Northampton, but also includes a new link between Roade and the Main Site (alongside the A508). Also, diverted rights of way would be retained and extended with new links provided within the main site, and new connectivity offered. This would include retained links to the west of the Main Site, enabling walking to and from Milton Malsor and Blisworth. The landscaping areas within the site will incorporate some of these new and diverted routes, creating a resource for local people, but also for employees of the site. This will support health initiatives relating to exercise and access to open spaces, with potentially positive physical as well as mental health outcomes.

15.2.27 As referred to above, the Bypass design will retain the existing bridleway via an underpass below the new road to protect access to the countryside and wider rights of way network to the west of Roade. This bypass will therefore protect existing walking, cycling and equestrian access to and from the village, and will retain this health and recreational benefit for local people. Other existing routes will also be retained with crossing points incorporated into the bypass, as well as cycleway/footway alongside the bypass itself.

15.2.28 Potentially adverse effects on health and well-being are addressed and mitigated through the Proposed Development. For example, adverse impacts on the amenity of local residents could have a potentially adverse effect on health in general terms, and in that context noise, and lighting (visual) effects are of potential relevance, as would any adverse impacts on air quality.

15.2.29 In fact, the assessment suggests that impacts on air quality from Northampton Gateway will be negligible overall, albeit with notable benefits in some areas as a result of the transport strategy which will stimulate a redistribution of traffic with positive outcomes for many local communities. Reductions in through-traffic in villages will have beneficial impacts on congestion, air quality, and noise which will be beneficial with regard to health and well-being.

15.2.30 Furthermore, the Proposed Development will contribute a range of 'low emissions strategy' measures which will add local and site specific benefits to the more strategic benefits to air quality by enabling the removal of HGVs from the national road network (also see below regarding climate change). This will include not only the walking and cycling measures referred to above, but also the provision of new public transport services and connectivity which will help reduce reliance on the private car. Also, through design measures including adoption of solar and photo-voltaic technology, and on-site electric car charging, the proposals will minimise the local effects on air quality.

15.2.31 Similarly, through best practice design and specification of the lighting strategy, the impacts on amenity will be limited with no significant intrusive effects such as glare or direct light-spill on residential properties or gardens. Effects will be limited to 'light-presence' effects (being able to see lit elements in otherwise dark views), and mostly negligible in significance.

15.2.32 In the ways highlighted above, the overall effect of the Proposed Development can be seen as positive with regards to a range of aspects within the human and public health agenda.

**Climate Change**

15.2.33 The ES considers the implications on climate change, both as an intrinsic part of the EIA process, but also by inclusion of an explicit summary of the ways in which the Proposed Development might affect climate change. Chapters 1, 2 and Chapter 15 refer to this in general terms, but more detailed issues relating to climate change are also identified in a number of the topic specific chapters (such as Air Quality, Drainage and Water Resources, and Transport).

15.2.34 As a Strategic Rail Freight Interchange (SRFI), the Proposed Development could make a direct and meaningful contribution towards implementing an important component of national policies regarding climate change. Through enabling and supporting a shift from road to rail for the movement of freight, SRFIs are seen by national policy (the National Policy Statement) as a type of development of direct relevance to addressing the role of transport in the causes of climate change. As each freight train can remove between 43 and 77 HGVs from the road[1], and with rail transport much more efficient in terms of carbon emissions than road transport[2], it is clear that SRFIs like Northampton Gateway would make a positive contribution to reducing carbon emissions.

15.2.35 Added to this, through the reduction in HGV mileage on the national network, Northampton Gateway would also have decongestion benefits helping improve reliability and efficiency of the road network. The ES estimates that the Proposed Development could remove 92 million HGV miles from the national network every year once fully operational.

15.2.36 With regard to other aspects of the climate change agenda, the potential impacts on drainage and flood-risk have also been assessed, and the Flood Risk Assessment and drainage strategy proposed include an explicit allowance for the effects of climate change in terms of rainfall intensity. The drainage strategy proposed is designed to enable the site to manage surface water in such a way as to ensure no downstream flood-risks or issues are either exacerbated, or created. Indeed, through better management of surface water, the proposals are likely to create some improvements (i.e. reduced risk) for downstream areas associated with the Wootton Brook.

15.2.37 Although detailed design of the buildings (appearance, materials, etc) is not part of the application, a framework is provided which will translate into a range of measures which will directly address climate change issues. Chapter 2 includes a Sustainability Strategy related to the delivery of BREEAM 'Very Good' standards on-site through energy efficient design and materials as well

1 NPS, paragraph 2.35

2 NPS paragraph 2.35 – rail freight produces 70% less $CO_2$ than road freight.

as incorporating technology to increase energy efficiency and use of renewables. This includes delivering electric car charging points, with the potential for this to be tied in with on-site power generation through photo-voltaic panels. Further to this, the proposals also include walking and cycling links and infrastructure, and new public transport provision, all of which will also contribute to the ways in which the Northampton Gateway proposals address climate change, as well as local air quality (referred to above).

15.2.38 Therefore, the ES underlines a range of ways in which both strategic or 'macro-level' outcomes and local, site-specific and 'micro' level actions will be taken in response to the climate change agenda.

## 15.3 ASSESSMENT OF IMPACTS WITH COMMITTED DEVELOPMENT

15.3.1 The ES technical chapters consider the cumulative effects with other committed developments. For many environmental receptors the impacts are highly site specific and there is limited interaction with other sites. For example, cumulative site drainage and flood-risk effects are limited due to the requirements of the guidance and regulations which requires each site to retain (or improve upon) greenfield runoff rates. With each site implementing Sustainable Drainage Systems to manage and control water even large sites close together can have very limited or no cumulative adverse effects, but can also have significant beneficial effects where flood-risk elsewhere is reduced through relatively small-scale benefits are provided by several separate sites on the same part of the drainage network. Similarly, on-site ground conditions or contamination is largely unaffected by other sites, as are any underground heritage assets (archaeology).

15.3.2 For other parts of the ES, there can be potential cumulative effects with or from other relevant sites. Each ES chapter provides a specific assessment of the likely cumulative effects with the relevant committed developments. Following the ES Scoping process in 2016 the assessment considers the following committed developments:

- 'Northampton South' Sustainable Urban Extension (SUE) – located at Collingtree on the opposite side of the M1 from the Proposed Development, for approx. 1,000 dwellings, with a new local centre and primary school. This site is located on the opposite side of the M1 to the Northampton Gateway main site, and further north-west, to the west of Collingtree;
- 'South of Brackmills' SUE – located on the eastern edge of Northampton adjacent to the Brackmills industrial area, for approximately 1300 dwellings, new local centre and primary school. This site is located some 5km from the Northampton Gateway site, separated by Wooton and Grange Park.

15.3.3 In addition to the above, the Transport Assessment considers not only the two SUEs named above but all of the growth planned or allocated through the West Northamptonshire Joint Core Strategy, as well as other relevant sites with planning permission and expected 'background growth' in traffic. All of that traffic growth already forms part of the Northamptonshire Strategic Transport Model (owned and operated by the County Council) which has been used to undertake the Applicant's assessment of the traffic and transport impacts, and to inform the package of highway mitigation.

15.3.4 The assessment also takes into account the Highways England Smart Motorways proposals which are planned for the M1 motorway including Junction 15.

15.3.5 As described above, the Transport Assessment and ES chapter show that as a result of the proposed mitigation works and measures, including substantial infrastructure improvements at Junction 15 of the M1, an upgrade to Junction 15A, and the Roade Bypass, the transport effects of the Proposed Development would be beneficial, with reduced congestion, improved capacity,

and more reliable journeys at some key existing congestion 'hot-spots'. The transport strategy would also see reduced 'rat-running' through the nearby villages compared to that likely in the future without the Proposed Development as a result of the A508 improvements and Bypass attracting traffic back to this corridor and away from less appropriate routes.

15.3.6 The Air Quality assessment, and the relevant part of the Noise and Vibration assessment, uses data from the Transport modelling which as described above, considers the future conditions taking into account all planned and committed growth as well as the Proposed Development. In this context, cumulative effects have inherently been assessed, and as explained in detail in Chapter 9, residual air quality effects are shown to be negligible overall, including some local beneficial effects.

15.3.7 Similarly, the noise assessment includes consideration of the cumulative changes in road traffic noise based on the same data, with the results described in detail in Chapter 8 and summarised in Table 15.2 above.

15.3.8 For most parts of the ES, for the reasons given above, there are limited if any likely significant cumulative effects with the committed sites. Indeed, there are no likely cumulative effects with the South of Brackmills SUE given proximity from the Proposed Development site. The exception would be an increase in the amount of highest-value agricultural land lost to development around Northampton.

15.3.9 With regard to those issues where there could be cumulative effects, any landscape effects of the Proposed Development with the closer Northampton South SUE are likely to be limited to a small landscape area focused along a short stretch of the motorway corridor. This landscape is already dominated by the motorway with other nearby urbanising influences. There would be no significant cumulative landscape effect arising from the Proposed Development and the South Northampton SUE. There could be some very limited and localised cumulative visual effects for users of the M1 motorway and Ash Lane/ Collingtree Road, with restricted or glimpsed views towards both developments close to the bridge over the motorway. However, given the limited intervisibility of the two sites there would be no significant cumulative visual effects.

15.3.10 Similarly, the remainder of the ES concludes that the cumulative effects with the committed developments are either negligible or minor, with no significant effects likely. This is in part because planning policies, regulations, or best practice require all developments to minimise or eliminate as many adverse effects as possible through design and other measures. Therefore, with regards to sometimes sensitive issues such as biodiversity, flood-risk, noise, and lighting, the ES concludes that any cumulative effects with the committed developments are limited.

**Emerging 'Rail Central' SRFI**

15.3.11 It should be noted that the Rail Central scheme as currently proposed (Stage 2 consultation) is incompatible with the Northampton Gateway development applied for in respect of the footpath proposed by Rail Central to the east to the Northampton Loop Line. It may also be incompatible in terms of its proposals for rail connections.

15.3.12 The ES suggests that were Rail Central to proceed there could be some significant adverse cumulative effects. The assessment is at this stage tentative and interim, as much of the Rail Central environmental information is incomplete or not yet available in final form. However, most notably, the likely combined landscape and visual effects are likely to be major adverse, driven by the more significant impacts of the Rail Central scheme which is in a more prominent and exposed location in relation to many local receptors in Milton Malsor and Blisworth.

15.3.13 Also, were both Rail Central approved in addition to Northampton Gateway and the committed developments the transport benefits delivered by the infrastructure improvements are likely to be less significant than the benefits seen with Northampton Gateway alone. Notwithstanding this reduction in the scale of the likely transport benefits, with both schemes (as well as committed

developments) the transport network seems likely to operate better than is likely if neither project were approved, particularly around the M1 and Junctions 15 and 15A where committed growth is likely to create a gradual worsening of congestion and delays.

15.3.14 There would also be some likely local changes to the noise impacts, with some minor increases to some of the nearest receptors both during the day and at night. Cumulatively, there could be some additional day and night-time effects for two of the receptors considered in Chapter 8. The assessment shows that the majority of the adverse noise effects on those receptors (Barn Lane, and Courteenhall Road) in a scenario with both SRFIs in place would be from Rail Central as opposed to Northampton Gateway.

15.3.15 The cumulative air quality effects may not be significant, but to assess them fully requires final detail of the highways impacts of Rail Central which is not currently available.

15.3.16 Were the Rail Central site also approved it would result in a greater loss of agricultural land in the same local area, but in the wider context this is not considered significant, especially as the loss of the highest-quality land categories which dominates much of Northamptonshire would be very small.

15.3.17 Similarly, in most other respects, the cumulative effects with Rail Central included in the assessment are not significantly different to the likely residual effects of the Northampton Gateway with the committed developments. This is because best practice, policy, and other material considerations requires all development to seek to minimise or eliminate as many adverse effects as possible through design and mitigation measures.

## 15.4 CUMULATIVE ASSESSMENT MATRICES

15.4.1 The assessment of cumulative effects began at the ES Scoping Stage, focused on completion of matrices in accordance with the PINS Advice Note 17. There is no single way to approach this, and it is clear that PINS recognises that the approach to the assessment of cumulative effects will vary from project to project. However, Advice Note 17 provides advice and a methodology which is offered to Applicants as one way of approaching the assessment.

15.4.2 The PINS methodology is based around four related stages and the completion of matrices to capture and record key issues associated with those projects of potential relevance to the Proposed Development with regard to cumulative effects. The Applicant has based the assessment around the PINS advice, and the matrices are included below.

15.4.3 Matrix 1 contains those committed developments of most direct relevance to the Proposed Development site and the 'study area' (or Zone of Influence, 'ZoI') identified for the ES. As explained earlier in this Chapter, and in other parts of the ES, the Transport chapter of the ES, plus much of the air quality and noise and vibration assessments are based around consideration of the cumulative effects from a much larger list of committed, approved (permitted) and allocated developments. This is explained in detail in Chapter 12.

15.4.4 Matrix 2 has been completed using the ES chapters, and any additional or updated information about the other relevant projects. With regard to the emerging Rail Central SRFI proposals, this draws on the Northampton Gateway project team's assessment of the draft Rail Central Preliminary Environmental Information of March 2018. To this extent, the conclusions at this stage are tentative and interim in the absence of the full and complete ES and associated details about the Rail Central proposals.

15.4.5 The matrix has been completed with a headline summary of the conclusions from across the ES. More detailed assessments and narrative are provided in the relevant topic specific chapters (as referred to in the matrix table).

**'MATRIX 1' – summary of Cumulative Effects Assessment Stages 1 and 2: Identification of 'other development'**

| ID | Application Ref (if relevant) | Applicant, and brief description | Distance from project | Status | Tier | |
|---|---|---|---|---|---|---|
| 1 | | Bovis Homes. Sustainable Urban Extension at Collingtree ('Northampton South SUE') | Less than one km | Allocated in Adopted Core Strategy (2014). Planning permission approved at appeal, July 2016 | 1 | |
| | | | | | | |
| 2 | | 'Rail Central' SRFI – Ashfield Land | Less than one km | Emerging NSIP – Scoping Report submitted, statutory consultation undertaken | 2 | |
| | | | | | | |
| 3 | | Highways England 'Smart Motorways' programme (M1 motorway) - north and south of Junction 15 (13-16) | Less than one km | Committed programme of Highways England | 3 | |
| | | | | | | |
| 4 | | Sustainable Urban Extension South of Brack-mills | Approx 5km | Allocated in Adopted Core Strategy (2014). | 3 | |

| | Stage 1 | | Stage 2 | | | |
|---|---|---|---|---|---|---|
| | **Within ZOI** | **Progress to Stage 2?** | **Temporal Overlap?** | **Scale/nature likely to have significant effect?** | **Other factors?** | **Progress to Stage 3 / 4?** |
| | Yes | Yes | Yes, likely to overlap for construction and operation/ occupation | Some potential – transport, air quality, visual, as key potential effects. | n/a | Yes – cumulative assessment in the ES |
| | | | | | | |
| | Yes | Yes | Yes – potentially for both construction and operation | Yes – potentially significant impacts re: transport, air quality, landscape and visual, socio economic. | Alternative SRFI site | Yes – cumulative assessment in the ES |
| | | | | | | |
| | Yes | Yes | Yes – potentially for both construction and operation | Transport. Is intended to have positive impacts on M1 traffic conditions. Would move M1 traffic closer to Collingtree receptors (air quality, and noise). | Potential implications for the detail of proposed Junction 15 improvements | Yes – considered as part of ongoing consideration of technical highways design, and the Transport Assessment. |
| | | | | | | |
| | Yes | Yes | Yes, likely to overlap for construction and operation/ occupation | Some potential, albeit limited by distance – transport and related air quality, as key potential effects. | n/a | Yes – cumulative assessment in the ES |

**'MATRIX 2' – Summary of potential cumulative effects (stages 3 and 4): Assessment Matrix**

| ID | Tier | Application Ref (if relevant) | Applicant, and brief description | Assessment of cumulative effect with NSIP | |
|---|---|---|---|---|---|
| 1 | 1 | | Bovis Homes. Sustainable Urban Extension at Collingtree.<br>Approx. 1,000 dwellings, with a new local centre and primary school. | *Limited likely cumulative effects overall. There is limited intervisibility between the sites due to the M1 which separates them, and the existing topography, with few visual or landscape receptors in common (Chapter 4).*<br>*Negligible lighting (Chapter 11) impacts are likely given the presence of, and separation by, the M1, and the earthworks/ landscape screening proposed coupled with natural topography of both sites.*<br>*The two sites are largely self-contained regarding most other topics and receptors such as ecology (Chapter 5), ground conditions (Chapter 6), flood-risk (Chapter 7), archaeology and built-heritage (Chapter 10).*<br>The Highways Mitigation Strategy addresses the future highways and transport effects of the Proposed Development with this and all other commitments. This has also fed into the noise and air quality (Chapters 8 and 9) assessments. | |
| | | | | | |
| 2 | 2 | | 'Rail Central' SRFI – Ashfield Land.[1] | *A limited number of cumulative effects are likely, but some should be anticipated based on the available (incomplete) information.*<br>A small number of receptors common to both the Proposed Development and Rail Central would be likely to experience a worsening of noise effects (day and night). Cumulative landscape and visual effects would be adverse, with the worst of the additional effects created by Rail Central. The highways impacts of both projects would be beneficial compared to the reference case (i.e. the future with all commitments but without either SRFI), but the benefits would be reduced to those likely from the Proposed Northampton Gateway Development alone. | |

| | Proposed mitigation applicable to NSIP | Residual cumulative effects |
|---|---|---|
| | No additional mitigation is required as a result of consideration of any likely cumulative effects.<br>Requirements secure the relevant measures regarding screening and mitigation of off-site effects, key requirements being:<br>Requirement 3 components of development and phasing;<br>Requirement 8 detailed design approval;<br>Requirement 10 provision of landscaping;<br>Requirement 12 CEMP;<br>Requirement 15 Lighting details.<br>The Highways Mitigation Strategy addresses the future highways and transport effects of the Proposed Development with all other commitments. | Residual effects are unchanged from those identified for the Proposed Development, as presented in the ES.<br><br>Negligible lighting (Chapter 11) impacts are likely given the presence of, and separation by, the M1, and the earthworks/landscape screening proposed coupled with natural topography of both sites.<br><br>The SUE is not a noise generating development, so no significant cumulative noise effects on other receptors are likely. |
| | | |
| | Rail Central is not a commitment, or subject to an NSIP application, and does not yet have a final ES or other application documentation and final details.<br>No additional mitigation has been considered or proposed in response to the likely cumulative impacts.<br><br>Given that the most significant likely cumulative effects would be generated by Rail Central, as opposed to Northampton Gateway, it is unclear what further actions the Applicant could take. | Based on the draft Rail Central Preliminary Environmental Information of March 2018, the residual cumulative effects would be largely unchanged from those with Northampton Gateway alone, with additional adverse effects likely with regard to:<br>Noise (receptors closest to both sites);<br>Landscape and Visual (most notably for receptors at Milton Malsor and Blisworth).<br>Increased loss of quality agricultural land.<br>Highways impacts would be less beneficial than those likely with Northampton Gateway alone. |

| ID | Tier | Application Ref (if relevant) | Applicant, and brief description | Assessment of cumulative effect with NSIP | |
|---|---|---|---|---|---|
| 3 | 3 | | Highways England 'Smart Motorways' programme (M1 motorway) - north and south of Junction 15 (13-16). | *This project is included as a 'commitment' within the detailed transport modelling and TA exercise. It is therefore factored into the ES, including the Air Quality and Noise Assessments.*<br>*No additional or separate assessment of effects considered necessary or relevant.* | |
| | | | | | |
| 4 | 3 | | Sustainable Urban Extension South of Brackmills. | *At approximately 5km from the Proposed Development, there are few direct likely cumulative effects. The assessment has identified no other direct impacts or effects are likely given the distance and lack of intervisibility between the sites.*<br><br>*This project is included as a 'commitment' within the detailed transport modelling and TA exercise. It is therefore factored into the ES, including the Air Quality (and Noise) Assessments.* | |

**1 As described at paragraph 15.60, these summary conclusions from the assessment undertaken are tentative and interim in the absence of a complete ES and associated final details about the emerging Rail Central proposals.**

| | Proposed mitigation applicable to NSIP | Residual cumulative effects |
|---|---|---|
| | *The Highways Mitigation Strategy addresses the future highways and transport effects of the Proposed Development with this and all other commitments.*<br><br>*No additional mitigation is required.*<br><br>*Requirements 5 and 6 design and phasing of highway works is of direct relevance regarding delivery of the Highways mitigation works. Requirement 7 refers to a scenario were the Smart Motorways scheme is not implemented, with alternative amendments to the Junction 15 designs prepared.* | *Residual effects are unchanged from those identified for the Proposed Development, as presented in the ES.* |
| | | |
| | *No additional mitigation is required as a result of consideration of any likely cumulative effects.*<br><br>*The Highways Mitigation Strategy addresses the future highways and transport effects of the Proposed Development with all other commitments.*<br><br>*Requirements 5 and 6 design and phasing of highway works is of direct relevance regarding delivery of the Highways mitigation works.* | *Residual effects are unchanged from those identified for the Proposed Development, as presented in the ES.* |