A47 Wansford to Sutton Dualling

Scheme Number: TR010039

Volume 6
6.1 Environmental Statement
Chapter 7 – Landscape and visual effects

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ENVIRONMENTAL STATEMENT
Chapter 7 – Landscape and visual effects

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7.1. Introduction

7.1.1. Highways England (the Applicant) has submitted an application for an order to grant a development consent order (DCO) for the A47 Wansford to Sutton Scheme (hereafter referred to as 'the Proposed Scheme'). The Proposed Scheme comprises the dualling of a section of the A47 between Wansford to Sutton; improvements to the A47 Wansford junction; creation of the A47 Sutton Heath roundabout to replace the Nene Way roundabout; associated side road alterations; and walking, cycling and horse-riding connections.

7.1.2. This section of A47 road is currently unable to cope with the high traffic volume and there are limited opportunities to overtake slower moving vehicles on the single carriageway. The Proposed Scheme aims to reduce congestion related delay, improve journey time reliability and increase the overall capacity of the A47. Full details of the Proposed Scheme are provided in Environmental Statement (ES) Chapter 2 (The Proposed Scheme) (**TR010039/APP/6.1**).

7.1.3. The key elements of the Proposed Scheme include:

- approximately 2.6km of new dual carriageway constructed largely offline of the existing A47, including the construction of two new underpasses
- a new free-flow link road connecting the existing A1 southbound carriageway to the new A47 eastbound carriageway
- a new link road from the Wansford eastern roundabout to provide access to Sacrewell Farm, the petrol filling station and the Anglian Water pumping station
- closure of the existing access to Sacrewell Farm with a new underpass connecting to the farm from the link road provided
- a new slip road from the new A47 westbound carriageway also providing access to the petrol filling station
- a link road from the new A47 Sutton Heath roundabout, linking into Sutton Heath Road and Langley Bush Road
- new junction arrangements for access to Sutton Heath Road and Langley Bush Road
- closure of the existing accesses to the A47 from Sutton Heath Road, Sutton Drift and Upton Road
- new passing places and limited widening along Upton Drift (also referenced as Main Road)
- new walking and cycling routes, including a new underpass at the disused railway
- new safer access to the properties on the A1, north of Windgate Way
- installation of boundary fencing, safety barriers and signage
- new drainage systems 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 sluice
    - compensatory flood storage
    - drainage ditch interceptors
    - new attenuation basins, with pollution control devices, to control discharges to local watercourses
- River Nene compensatory flood storage area
- works to alter or divert utilities infrastructure such as electricity lines, water pipelines and telecommunications lines
- temporary compounds, material storage areas and vehicle parking required during construction
- environmental mitigation measures

7.1.4. Under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, the Proposed Scheme is an Environmental Impact Assessment (EIA) development and as such requires submission of an Environmental Statement (ES) presenting the likely significant environmental effects of the Proposed Scheme.

7.1.5. As part of the EIA process, this ES chapter presents the findings of a Landscape and Visual Impact Assessment (LVIA). This assessment includes a description of existing baseline conditions, consideration of the potential impacts of the Proposed Scheme upon surrounding landscape and visual receptors and identification of appropriate mitigation.

7.1.6. The approach to the assessment is consistent with the EIA Scoping Report (2018) **(TR010039/APP/6.5)** and subsequent Scoping Opinion (March 2018) **(TR010039/APP/6.6)** for the Proposed Scheme, in combination with the most up to date standards for assessment in the Design Manual for Roads and Bridges (DMRB), LA 107 Landscape and Visual Effects (revision 2, February 2020).

7.1.7. The main chapter text is supported by Appendices 7.1 to 7.7 (**TR010039/APP/6.3**) which contain:

- A summary of relevant planning policy.
- The viewpoint visualisation methodology.
- A detailed assessment of the effects of the Proposed Scheme on landscape character areas, visual receptors, and representative viewpoints (refer to Figure 7.4 Visual Context (**TR010039/APP/6.2**) for the location of these viewpoints).
- An arboricultural survey and impact assessment (AIA).
- A specialist assessment of lighting effects.

7.1.8. The assessment considers the effect of the Proposed Scheme on landscape character within the study area, including the direct impact on existing landscape features within the Proposed Scheme boundary such as: vegetation (woodlands, trees and hedgerows); and landform; the field pattern; or hydrological features such as the River Nene. In accordance with DMRB LA 107 the term 'landscape' is used throughout the early stages of the assessment to refer to the potential for both 'landscape' and 'townscape' effects. The rural context, however, means that effects on townscape character would not occur and have therefore been scoped out.

7.1.9. Landscape and visual effects are interrelated but distinct. Landscape effects relate to changes in the physical components or character of the area irrespective of their visibility (effects on the landscape resource), while visual effects refer to the change in view experienced by people in specific locations (referred to as visual receptors).

7.1.10. All land within the Proposed Scheme boundary is hereafter referred to as 'the Site'. Please refer to Figure 7.1 (**TR010039/APP/6.2**) which illustrates the site.

7.2. Competent expert evidence

7.2.1. Drawing on published standards and guidance, landscape and visual impact assessment relies on an element of reasoned professional judgement. This assessment has been undertaken by Chartered Members of the Landscape Institute (CMLI) with experience in assessing the landscape and visual effects of developments including large-scale linear infrastructure.

7.2.2. The landscape competent expert holds a BA (Hons) Degree in Landscape Architecture, CMLI status, and over 20 years' experience working in the field of landscape assessment and design. This includes numerous large-scale highway schemes across the UK. The competent expert has also represented landscape and visual issues at topic specific hearings as part of the Nationally Significant Infrastructure Project (NSIP) application process and examination.

7.3. Legislative and policy framework

7.3.1. The legislative and policy context of the Proposed Scheme is considered in Chapter 1 (Introduction) (**TR010039/APP/6.1**).

7.3.2. National and local landscape planning policy which is relevant to the potential landscape and visual effects of the Proposed Scheme is further summarised and considered in Appendix 7.1 (Planning Policy Context) (**TR010039/APP/6.3**). This has informed the focus of the assessment and has been factored into the assessment of the sensitivity of some receptors.

7.3.3. The National Policy Statement for National Networks (2014) (NPS NN) is the primary basis used by the Secretary of State (SoS) for making decisions on development consent applications for major highway schemes. It underlines the importance of good design in response to the specific local landscape character context (paragraphs 4.28, 4.34 - 4.35, 5.144 – 149 and 5.156 - 158).

7.3.4. Local planning policies of relevance to the potential landscape and visual effects of the Proposed Scheme are found in the Peterborough Local Plan (2019) (the Site and the whole of the Proposed Scheme fall within Peterborough) and the Huntingdonshire Local Plan (2019) (the boundary of Huntingdonshire extends to within approximately 100m of the Proposed Scheme). Local policies include the following key themes:

- Policies to protect existing landscape character and to ensure that the design of new development recognises and responds to its distinctiveness (Policies LP16 and LP27 of the Peterborough Local Plan).
- Policies relating to the promotion of landscape, recreational and biodiversity enhancements within the Nene Valley as part of its promotion as a green infrastructure resource (Policy LP24 of the Peterborough Local Plan).

7.3.5. These policy objectives have guided the focus of the landscape and visual impact assessment of the Proposed Scheme as well as the development of the mitigation proposals set out within the Environmental Masterplan (**TR0100039/APP/6.8**) and Record of Environmental Actions and Commitments (REAC) contained within the Environmental Management Plan (EMP) (**TR010039/APP/7.5**).

7.4. Assessment methodology

Reference sources

7.4.1. Projects that require an EIA are assessed and reported in accordance with the standards and procedures set out within DMRB. DMRB in turn recognises other relevant guidance to inform the consideration of effects. This assessment of landscape and visual effects complies with DMRB and takes account of other guidance and standards as follows:

- DMRB LA 104 Revision 1 Environmental Assessment and Monitoring (Highways England, August 2020)
- DMRB LA 107 Revision 2 Landscape and Visual Effects (Highways England, February 2020)
- Guidelines for Landscape and Visual Impact Assessment Third Edition (Landscape Institute & Institute of Environmental Management and Assessment, 2013) (GLVIA3)

- An Approach to Landscape Character Assessment (Natural England and Department for Environment, Food and Rural Affairs, 2014)
- Landscape Institute Technical Information Note 08/15, Landscape Character Assessment (The Landscape Institute, 2016)
- Landscape Institute Technical Guidance Note 06/19, Visual Representation of Development Proposals (The Landscape Institute, 2019)

Structure of assessment

7.4.2. The LVIA process involves:

- Identification of landscape and visual **receptors** and a description of existing baseline conditions.
- An assessment of the **sensitivity** of the receptors to the type of development proposed (taking account of receptor value and susceptibility to change).
- Identification of the **potential impacts** on receptors associated with the Proposed Scheme.
- Identification of **mitigation.**
- An assessment of the **magnitude** of change to the receptor (considering the scale, extent, duration, and potential reversibility of the change).
- An assessment of the **significance** of the effect on the receptor (during the temporary construction period and both in year 1 immediately following construction and at a nominal time horizon of 15 years later when new planting to mitigate the effects of the Proposed Scheme would have begun to mature and take effect).

Approach to assessment

7.4.3. The approach to assessment has comprised desktop study and site survey to establish the nature and extent of potential receptors, to identify their likely sensitivity, and to record the potential landscape and visual effects of the Proposed Scheme on them.

7.4.4. The landscape receptors with the potential to experience change because of the Proposed Scheme comprise landscape character areas. The assessment of the effect on landscape character areas includes considerations of the effects on constituent components (or distinctive features) of the landscape which are key or prominent contributors to landscape character (such as landform, field pattern, woodlands, distinctive individual trees, or hedgerows). An understanding of the direct physical impacts of the Proposed Scheme on landscape components (or features) informs the assessment of the significance of the overall effect on perceived landscape character.

7.4.5. The visual receptors with potential to experience change because of the Proposed Scheme comprise selected representative viewpoints as well as a schedule of individual receptor locations (people in specific locations such as their homes, community facilities, places of work, public rights of way (PRoW) or roads). The assessment of the effects on representative viewpoints informs the assessment of the significance of the effects on the individual visual receptors locations whilst also providing illustration of typical views of the Proposed Scheme.

7.4.6. The assessment of landscape and visual effects includes consideration of the following:

- Seasonal differences between conditions in summer (with deciduous foliage) and winter (without deciduous foliage).
- Both day and night-time conditions.
- The effect on landscape character and views of changes to, or the removal of, key existing landscape components or features (for example landform, areas of woodland, or prominent existing individual mature trees).
- The effect of temporary construction activity (for example, presence of construction compounds, plant, temporary buildings, materials stockpile areas and construction traffic movements along haul routes).
- The effect of the introduction of the full range of associated new highway infrastructure (for example, earthworks, cuttings and embankments, carriageways, signage, lighting, and fencing).
- The effect of vehicles travelling along the Proposed Scheme.
- Wider forces for landscape character and visual change.

7.4.7. The assessment considers the effects of the Proposed Scheme at the following points in time:

- Construction; short term (temporary) effects.
- Year 1 during operation; short term (temporary) effects. The visual assessment considers both winter and summer effects and the description of each effect includes reference to key differences in seasonal effects where applicable. However, the judgement with regards the level and significance of effect on each visual receptor refers to winter. Visual effects experienced during winter months are considered to be the ‘worst-case’ in assessment terms as trees are without leaf and visibility tends to be more open.
- Year 15 during operation (mitigation design year once planting has gained a relative stage of maturity); long term (residual) effects. Similar to the Year 1 assessment, reference has been made to visual effects at Year 15 during both summer and winter and the focus of this assessment is the extent to which proposed mitigation planting would have established and the subsequent change in effects during both seasons, albeit with the level and significance of effect on each visual assessed as a worst-case during winter.

7.4.8. In considering forces for landscape and visual change, any known likely changes to baseline conditions in future years, and the likely duration of any temporary effects, the assessment assumes the following approximate timescales for the delivery of the Proposed Scheme:

- Start of construction works – 2023
- Estimated duration of construction – 23 months
- Fully open to traffic – 2025

7.4.9. The potential combined and cumulative landscape and visual effects of the Proposed Scheme are considered in Chapter 15 (Cumulative Effects) (**TR010039/APP/6.1**).

7.4.10. The outcome of the assessment has informed the planting proposals contained in the Environmental Masterplan (**TR010039/APP/6.8)** for the Proposed Scheme.

Update to standards and scope of assessment

7.4.11. Revision 2 of DMRB LA 107 was published in February 2020 after the EIA Scoping Report (**TR010039/APP/6.5**) for the Proposed Scheme was submitted to the Planning Inspectorate in 2018. The updated DMRB standard sets out additional requirements for the scoping stage of any project. In accordance with DMRB LA 107 paragraph 3.9, Tables 7-1 and 7-2 below set out the proposed scope for further assessment in the ES. Where the response to one or more of the scoping assessment questions taken from paragraph 3.9 is 'yes', further assessment has been undertaken.

Table 7-1 : Summary of proposed scope (landscape effects)

Scoping question	Comment	Scope in?
Is the project likely to affect designated landscapes (statutory or local designation)?	No. There are no locally designated landscapes such as Special Landscape Areas in the vicinity of the Proposed Scheme. The assessment does, however, acknowledge the recreational, ecological and landscape value and opportunity associated with the Nene Valley landscape which is recognised within local planning policy. This is not considered to constitute a 'local landscape designation'.	No
Is the project likely to affect the distinctiveness of a landscape character area or type?	Yes. The Proposed Scheme has the potential to affect the distinctiveness of the Nassaburgh Limestone Plateau landscape character area and the distinctiveness of the Nene Valley landscape character area.	Yes
Is the project likely to affect national, regional, or local characteristics or distinctive features?	Yes. The Proposed Scheme has the potential to affect woodlands, trees and hedgerows in both landscape character areas and the River Nene.	Yes

Scoping question	Comment	Scope in?
Is the project likely to affect the condition or quality of a landscape?	Yes. The Proposed Scheme has the potential to affect the condition or quality of the Nassaburgh Limestone Plateau landscape and the condition or quality of the Nene Valley landscape.	Yes
Is the project likely to affect the intrinsic character, qualities, and local identity of the urban environment (sense of place)?	The Proposed Scheme alignment does not coincide directly with any urban areas. The Proposed Scheme alignment does pass close to the settlements of Wansford and Sutton, however physical change to the settlements would be limited and visibility of the Proposed Scheme is limited, therefore it would not affect urban setting or sense of place.	No

Table 7-2 : Summary of proposed scope (visual effects)

Scoping question	Comment	Scope in?
Is the project likely to affect receptors (individuals or range of people) views and the visual amenity of the area?	Yes. Visual receptors of various types are located within the identified 1km radius study area.	Yes
Is the project likely to affect the sensitivity of views to and from designated and/or valued landscapes, or from public rights of ways, public open spaces or from national trials?	Yes. The locally promoted Nene Way long distance footpath passes close to the Proposed Scheme.	Yes
Is the project likely to affect a range of viewpoints and nature of views from which the project is visible?	Yes. A Zone of Theoretical Model (ZTV) has demonstrated likely visibility from surrounding areas.	Yes
Is the project likely to generate significant visual effects (daytime or night-time)?	Yes. The surrounding area is settled and therefore visual receptors, particularly residential properties and settlements, may be affected by night-time visibility of the Proposed Scheme (either because of changes to the location and extent of road lighting at junctions or because of visibility of traffic headlights, including in some areas where there is no existing highway).	Yes

7.4.12. Since the EIA Scoping Report in 2018 (**TR010039/APP/6.5**) there has also been change in guidance on Visual Representation of Development Proposals (Landscape Institute Technical Guidance Note 06/19). Detail on the approach to visualisation is included in Appendix 7.2 (ZTV and Verified Photomontage Methodology) (**TR010039/APP/6.3**). This has not materially changed since the approach previously advised in the EIA Scoping Report.

7.4.13. The changes in the DMRB assessment standard and related professional guidance noted above do not materially affect the focus of points raised in the received Scoping Opinion (**TR010039/APP/6.6**).

Consultation

7.4.14. An EIA Scoping Report was submitted to the Planning Inspectorate in February 2018 (**TR010039/APP/6.5**). No landscape or visual matters were proposed to be scoped out. A Scoping Opinion was received from the Planning Inspectorate in March 2018 (**TR010039/APP/6.6**). Matters raised specifically relating to landscape (section 4.3 of the Scoping Opinion) included (ID 16 to 19 inclusive):

- Study area – a suggestion that the study areas for the landscape and for the visual assessments be carefully justified and efforts made to agree them with relevant consultees. A general study area of 1km radius around the Site was agreed with Peterborough City Council in October 2019. Further justification for the study areas used in the assessments are provided later in this Chapter.
- ZTV methodology – a query was raised regarding the viewer height used to produce the ZTV. A height of 1.6m has been used in the final ZTV. This is consistent with DMRB LA 107 and GLVIA3. An earlier reference in DMRB to a different height is now superseded. LA 107 does not stipulate a height and the approach is based on guidance in GLVIA3 (paragraph 6.11).
- Potential effects – a suggestion that the assessment be supported by appropriate graphic material to understand the likely significant landscape and visual effects of the Proposed Scheme. Photomontage visualisations have been prepared which highlight locations where landscape character and visual amenity would be potentially most impacted (refer to Table 7-5 for photomontage locations).
- Mitigation – a series of suggestions regarding mitigation planting including a suggestion that planting specification, species mixes, and the aftercare period be agreed with relevant consultees. Mitigation planting is set out within the Environmental Masterplan (**TR010039/APP/6.8**). Tree and hedgerow information is provided within the ecological chapter of the ES Chapter 8 (Biodiversity) (**TR010039/APP/6.1**) and within the Arboricultural Impact Assessment (AIA) (Appendix 7.6 to this chapter) (**TR010039/APP/6.3**). Further consultation will take place with Peterborough City Council at detailed design to agree the detailed planting proposal and aftercare period.

7.4.15. Appendix 4.1 to ES Chapter 4 (Environmental Assessment Methodology) (**TR010039/APP/6.3**) provides additional detail regarding how these matters which were raised in the Scoping Opinion have been responded to.

7.4.16. In response to layout changes (where a more northerly alignment for the Proposed Scheme was developed to the north of the village of Sutton during 2020), further consultation with Peterborough City Council took place in

September 2020, specifically focusing on the representative viewpoints to be used for the visual assessment. A schedule of representative viewpoint locations had been originally agreed with Peterborough City Council in October 2019 to allow winter photography to progress. In response to the layout changes in September 2020 Peterborough City Council raised a number of further viewpoint suggestions for consideration. These suggestions did not relate to those parts of the Proposed Scheme that had changed but revisited the viewpoint selection previously agreed in October 2019. The response in September 2020 also contained a request to provide some reasoning or rationale within the DCO application where further consideration of suggested viewpoints led to them not being included in the final assessment.

7.4.17. Peterborough City Council's additional viewpoint suggestions made in September 2020 were given careful consideration. Some changes were made to the number of directions of view presented at some viewpoints such as inclusion of views east from the Nene Way along the riverside areas east of Wansford and east of the Petrol filling station. However, other suggestions have not been included due to their distance from the Proposed Scheme, the absence of potential visibility, or because they would duplicate viewpoints already agreed and included.

7.4.18. Several of the viewpoint suggestions made by Peterborough City Council in September 2020 were located at a considerable distance from the Proposed Scheme (for example, at South Wittering more than 2km to the north on the opposite side of the A1 corridor), outside of the agreed 1km study area, or outside of the final Proposed Scheme ZTV (the ZTV provided at Figure 7.4 Visual Context (**TR010039/APP/6.2**) had not been available to Peterborough City Council at the time of the consultation). Consideration was given to the potential for a significant visual effect at suggested locations but in several cases, it was clear that there would be no visibility of the Proposed Scheme. In this regard it should be noted that the extent of the Site did reduce during the latter stages of project development and some of the Council's suggestions stemmed from an inferred understanding that the Proposed Scheme would extend over a slightly wider area than was in due course the case (for example, the Proposed Scheme reduced in extent to the west of the A1, northwards along the A1 and at its far eastern end).

7.4.19. The viewpoints included in this assessment, which include all of those agreed with Peterborough City Council in October 2019 plus some additional directions of view from them, are judged to adequately cover the potentially significant visual effects of the final layout of the Proposed Scheme. In addition, in April 2021 the final viewpoint list was sent to Huntingdonshire Council for information and the Landscape Officer confirmed that the viewpoints are satisfactory.

7.4.20. Statutory consultee responses and ongoing discussions with stakeholders and landowners relevant to the potential landscape and visual effects of the Proposed Scheme have also been reviewed. Points have been responded to within the scope and focus of this assessment and by the mitigation planting proposals included in the Environmental Masterplan (**TR010039/APP/6.8**). Key topics raised by statutory consultees, other stakeholders and landowners included:

- The potential visual effects on the Sacrewell Farm Visitor Centre and changes to its access.
- The ecological value of the Sutton Meadows North County Wildlife Site to the west of the disused railway and Wittering Brook (see Figure 8.2) (**TR010039/APP/6.2**), and the ways in which impacts could be compensated for and biodiversity along the riverside more widely enhanced within the Environmental Masterplan (**TR010039/APP/6.8**).
- Potential views of the Proposed Scheme from the northern edges of the village of Upton in a south-west direction.
- Cross-valley views of the elevated roundabout to the east of Wansford and countryside to the south of the River Nene.
- Views from the south, looking north, arising from the increase in elevation of the Proposed Scheme and associated vehicle movement.

Assessment criteria

7.4.21. The assessment criteria defined by DMRB have been used to assess the landscape and visual effects of the Proposed Scheme. The overarching criteria used for determination and definition of the significance of effects is as set out in tables 3.7 and 3.8.1 of DMRB LA 104 (revision 1, August 2020).

7.4.22. The significance of landscape effect has been determined by combining the sensitivity of the affected landscape (as defined in table 3.22 in LA 107) with the magnitude of landscape change associated with the introduction of the Proposed Scheme (as defined in table 3.24 in LA 107). The evaluation of the sensitivity of the landscape resource is based on factors and attributes which affect the value of the landscape and the susceptibility of its key characteristics to change.

7.4.23. The significance of visual effects has been determined by combining the sensitivity of the visual receptor (as defined in table 3.41 in LA 107) with the magnitude of visual change associated with the introduction of the Proposed Scheme (as defined in table 3.43 in LA 107). The visual sensitivity of individual receptor locations depends primarily upon receptor type (the activity associated with the receptor and the importance likely to be attached by people to their available view) but also the value attributed to the view, for example where a

view may include a designated landscape within the view. It is also sometimes the case that different types of visual receptor might be present at a selected representative viewpoint, for example, a selected location may include both residential properties and road users suggesting different levels of sensitivity. In such cases the more sensitive receptor category is identified as the basis for assessment.

7.4.24. The assessment of the significance of residual landscape and visual effects (as defined in tables 3.7 and 3.8.1 in LA 104) takes into consideration mitigation measures implemented as part of the Proposed Scheme. Moderate, Large and Very Large effects are deemed to be 'significant'.

7.5. Assessment assumptions and limitations

7.5.1. The visual effects of the Proposed Scheme have been assessed by site visits to nearby publicly accessible locations. It has not therefore been possible to exactly confirm the potential for all views from all receptors, nor to exactly define the nature of views from all private locations (for example, rear garden views or views from upper storey windows). The site survey does however reflect the best estimate of those effects and access to areas reasonably close to all receptors was possible. That access to private property was not arranged, including internal areas of residential properties, is not considered to be a significant limitation within the assessment.

7.6. Study areas and receptors

7.6.1. The study areas for the assessment of the landscape and visual effects of Proposed Scheme have been established with reference to criteria set out in DMRB LA 104 Environmental Assessment and Monitoring (paragraph 3.13) and LA 107 Landscape and Visual Effects (paragraph 3.11 and paragraphs 3.31 to 3.33).

7.6.2. The initial study area for both the landscape and the visual assessments extended to 1km from the Site (refer to Figure 7.1 Site Location) (**TR010039/APP/6.2**). This distance was verified on-site and considered adequate given the limited vertical height of the main components of the Proposed Scheme and the generally low lying, only gently undulating and well-wooded landscape context. The Proposed Scheme is not overlooked from higher ground (refer to Figure 7.2 Landscape Context) (**TR010039/APP/6.2**). The main components of the Proposed Scheme with the potential to cause landscape or visual effects (such as the embankments and new junctions) would also lie close to the existing A47 highway corridor. This presence of existing large scale

highway infrastructure precludes any likelihood of any significant landscape and visual effects occurring at distances of greater than 1km.

7.6.3. In due course, the landscape assessment established the need to consider the landscape effects of the Proposed Scheme on two landscape character areas: on the landscape of the Nassaburgh Limestone Plateau to the north and on the landscape of the Nene Valley to the south. These are the 'host' landscape character areas through which the Proposed Scheme passes (refer to Appendix 7.3 Landscape Character Areas) (**TR010039/APP/6.3**). In reaching this conclusion, include site verification, it was judged that there was no potential for a significant adverse effect on the landscape character of two other landscape character areas within 1km, namely Rockingham Forest and the Northern Wolds (both fall just within the south-western extent of the 1km study area). In the absence of a large topographical range or key views towards the Proposed Scheme, these were judged sufficiently peripheral to the initial 1km study area for there to be no potential adverse effect on their landscape character arising from visibility of the Proposed Scheme over a distance of more than 0.5km. These peripheral character areas were therefore excluded from the study area for the assessment of landscape effects.

7.6.4. Effects on all visual receptors (or grouped receptors) within the initial 1km study area have been assessed. These comprise 43 individual locations (a mix of individual residential properties, grouped residential properties, whole settlements, footpath routes, highway routes and commercial or community locations). There are no visual receptors just outside the 1km study area with a particularly high level of visual sensitivity that would justify their additional inclusion in the assessment.

7.7. Baseline conditions

7.7.1. The Site comprises an area of land around the existing A47 to the east of the A1 (refer to Figure 7.1 Site Location) (**TR010039/APP/6.2**). Much of the Site lies close to the east to west route of the existing single carriageway road but the Site extends north to accommodate a construction compound and form a connection at Sutton Heath Road. To the north lies a slightly elevated and sparsely settled agricultural plateau landscape. To the south lies the shallow valley of the River Nene and the villages of Wansford, Stibbington and Sutton. The route of the existing A47 broadly aligns with the boundary between these two areas of differing landscape character. Towards the western end of the Proposed Scheme the Site extends to the northern bank of the River Nene. Along the eastern end of the Proposed Scheme an approximately 1.7 km long existing east to west woodland belt runs principally to the north of the existing A47, further defining the boundary between the valley to the south and plateau to the north.

7.7.2. Consideration has been given to general forces for change and to whether there are any known or likely specific changes to the landscape and visual baseline conditions which are likely to have occurred by the beginning of construction (2023); by the year of opening (2025); or fifteen years hence (2040). None have been identified that have the potential to alter the conclusions of the assessment. It is acknowledged that there is some pressure for the expansion of the town of Peterborough into the countryside to its north. The level of uncertainty associated with this means that the possibility of wholesale urbanisation of parts of the study area has not been factored into the assessment of the significance of likely landscape effects. It is also acknowledged that local planning policy and strategic projects seek to enhance the landscape of the Nene Valley and to increase its recreational and ecological value to the local community. The acknowledged high visual sensitivity of routes such as the Nene Way long distance footpath, which runs along the northern bank of the river, therefore stems as much from this opportunity as it does from currently observed baseline conditions (which are in places affected by detracting elements that strategies might seek to remove).

Landscape

Landscape designations

7.7.3. There are no general protective landscape designations associated with the study area for the Proposed 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 (refer to Appendix 7.1 Planning Policy Context for further details) (**TR010039/APP/6.3**). This designation has, however, been considered as part of the assessment of landscape value (see Appendix 7.3) (**TR010039/APP/6.3**).

Nationally identified landscape character areas

7.7.4. The alignment of the Proposed 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 (see Figure 7.3a Landscape Character) (**TR010039/APP/6.2**).

Locally identified landscape character areas

7.7.5. The principal sources of published information on local landscape character are the Landscape Character Assessment for Peterborough City Council (2007) and the Huntingdonshire Landscape and Townscape Assessment Supplementary

Planning Document (2017). In this assessment local landscape character has principally been established by reference to the landscape character assessment for Peterborough City Council. Local studies divide the surrounding area into four principal landscape character areas (accepting that the Nene Valley is consistent in character across political boundaries). Refer to Figure 7.3a Landscape Character (**TR010039/APP/6.2**) for the extent of these locally identified landscape character areas.

7.7.6. Two locally identified landscape character areas within 1km of the Site (identified by Northamptonshire and Huntingdonshire Councils respectively) were deemed to be peripheral to the study area with no potential for a significant effect upon their landscape character to be caused by the Proposed Scheme (Rockingham Forest and the Northern Wolds). These are not considered further. Two locally identified landscape character areas have therefore been considered in detail.

Assessed landscape character areas

7.7.7. The assessment has adopted two local landscape character areas as the spatial framework within which to consider the landscape character effects of the Proposed Scheme. No further sub-division of these already locally identified landscape character areas was considered necessary (refer to Figure 7.3b Landscape Character for the extent of each assessment character area) (**TR010039/APP/6.2**).

7.7.8. A detailed baseline description of the two character areas is presented in Appendix 7.3 (Landscape Character Areas) (**TR010039/APP/6.3**). The baseline landscape description includes a summary of the key components (or features) (including landform, field pattern, woodlands, trees and hedgerows) and key characteristics of the landscape within the extents of the study area that have a bearing on the sensitivity of the character area to the Proposed Scheme (the key characteristics and attributes that are likely to be indicators of the sensitivity to the addition of further, and changes to existing, large scale linear highway infrastructure). The description includes the identification of a sensitivity rating of the landscape area relative to the Proposed Scheme taking account of both landscape value and landscape susceptibility. Table 7-3 below summarises the key characteristics and sensitivities.

Table 7-3 : Landscape character areas

Name and Reference	Summary description	Sensitivity to the Proposed Scheme combining landscape value and landscape susceptibility

Nassaburgh Limestone Plateau	Open and slightly elevated landscape with a large scale pattern of geometric, often arable, fields interspersed with copses, woodland belts and road-side trees. The large-scale geometric pattern of the landscape displays some caapcity to absorb the potential landscape efects of large scale, linear, highway infrastructure.	Medium value. Medium to low susceptibility. **Medium combined sensitivity.**
Nene Valley	Low lying and slighly enclosed river valley landscape recognised through policy (though not locally designated) for the landscape and recreational enhancement opportunities that it offers for nearby more heavily settled areas. The shallow topographical form and smaller scale of the pastoral landscape displays less capacity to absorb the potential landscape efects of large scale, linear, highway infrastructure.	Medium value. Medium to high susceptibility. **Medium combined sensitivity.**

Landscape value and susceptibility

7.7.9. The explanative text for Policy LP24 of the Peterborough Local Plan identifies that the Nene Valley *'has long been identified as an area of high amenity, landscape, ecological and heritage value'*. The Landscape Character assessment for Peterborough City Council does not attribute a value rating to different landscape character areas and sub areas. However, it defines the landscape strategy for the Ailsworth and Castor Valley Slopes (see Figure 7.3a Landscape Character) (**TR010039/APP/6.2**) within the Nene Valley landscape close to the Site as 'Improve and conserve' (a landscape in a moderate condition with a moderate strength of character of moderate tranquillity and 'frequent' level of rarity).

7.7.10. By comparison it defines the landscape strategy for the Castor Hanglands Wooded Plateau within the Nassaburgh Limestone Plateau landscape close to the Site as 'Safeguard and manage' (a landscape in a good condition with a strong strength of character displaying tranquillity and rarity).

7.7.11. In this context, both landscape character areas are considered to be of medium value.

7.7.12. Local Site observations, and variations in the susceptibility of the key characteristics of the two landscape character areas to the potential effects of the Proposed Scheme (large scale linear highway infrastructure) have been considered. The combined assessment of landscape sensitivity has concluded that the Nene Valley displays a slightly higher level of landscape sensitivity compared to the Nassaburgh Limestone Plateau. This reflects the greater ability of the landform, scale, and pattern of the Nassaburgh Limestone Plateau landscape to successfully accommodate the effects of development such as the Proposed Scheme on its southern boundary. In contrast, the shallow landform

and scale of the Nene Valley, especially in areas closer to the river, is less able to absorb such a development.

Visual

General visual context

7.7.13. The topographical range within the undulating plateau landscape and shallow valley landscape of the study area is limited. The extent of visibility is therefore primarily a function of landcover, particularly areas of woodland, linear tree belts and dispersed smaller copses. A greater level of visual openness tends to occur at the western end of the Proposed Scheme immediately to the east of the A1 corridor, east of the village of Wansford, and around Sacrewell Farm. At the eastern end of the Proposed Scheme views are more frequently interrupted by various linear tree belts, including those associated with the existing A47 and with the historic route of Ermine Street.

Zone of theoretical visibility (ZTV)

7.7.14. A preliminary ZTV was prepared during design development to a 1km radius around the Proposed Scheme (refer to Figure 7.4 Visual Context for the equivalent ZTV produced following finalisation of the design) (**TR010039/APP/6.2**). The extent of ZTV was extended to a 1.5km offset from the Proposed Scheme in recognition of Planning Inspectorate (PINS) Scoping Opinion response to consider the potential for visual effects beyond a 1km study area.

7.7.15. The ZTV was based on digital surface modelling (DSM) data which included the screening effect of landcover. The extent of the ZTV is therefore influenced by vegetation and topography, with some limitation afforded by built form. The ZTV captures the likely extent of potential visibility associated with high-sided traffic movements along the main proposed carriageways (assuming a typical height of 4m). Outlying parts of the Proposed Scheme, such as at Upton, have not been included as the focus of the ZTV is on the main carriageway and the visibility of high sided vehicles.

7.7.16. The Proposed Scheme ZTV is based on a viewer height of 1.6m which is consistent with the current standards and guidance which underpin this assessment (paragraph 6.11 of GLVIA3). The preliminary ZTV was used to identify representative assessment viewpoints, the individual visual receptors likely to be affected, and to initially consider potential visual effects during the iterative design process. It provided a starting point for the identification of areas of potential visibility of the Proposed Scheme. Final assessments, however, were

undertaken in the field to confirm the extent of actual visibility from the Proposed Scheme and how this may vary in different seasons.

7.7.17. The following notable aspects of the ZTV are highlighted. These informed the focus of the subsequent visual assessments:

- The villages of Wansford, Stibbington and Sutton largely fall outside of the ZTV due to the screening effect of buildings, and garden and street vegetation.
- Much of the valley floor to the south of the River Nene falls outside of the ZTV due to its low lying topography and because the Proposed Scheme tends to be positioned on higher land to the north of the valley (the valley slopes are sometimes convex).
- There is very limited potential for visibility from areas to the west of the A1 except from elevated ground to the south (the Proposed Scheme lies almost exclusively to the east of the A1 corridor with the exception of minor works to the western roundabout at the junction with the A1 which are surrounded by existing tree cover).
- The ZTV highlights the screening effect of vegetation along Ermine Street to the north-east.
- The potential for visibility in the vicinity of the settlements of Upton and Ailsworth at the eastern end of the Proposed Scheme is very limited.

Notable baseline visual features and detractors

7.7.18. The following existing features are notable within baseline visual conditions:

- The existing traffic movements along the existing A47. The topographical context and the absence of existing split level junctions mean that visibility of the existing A47 is principally associated with its high sided traffic movements, or visibility of lighting columns at existing roundabouts, rather than the highway infrastructure itself. The existing A47 generally remains close to natural grade with few examples of substantial areas of cutting or embankment.
- The communications mast south of Sacrewell Farm is a prominent feature.
- Woodland belts, particularly at Sacrewell Farm and towards the eastern end of the Proposed Scheme provide visual structure.
- Overhead power line transmission towers, particularly towards the eastern end of the Proposed Scheme.

Seasonal variations in the visual baseline

7.7.19. Seasonal variations in baseline visual conditions within the study area include:

- Greater visual permeability in winter of some of the linear tree belts in the area.
- Greater visual permeability in winter in low views across the valley floor due to reduced screening by layered vegetation.
- Greater visibility during winter of traffic movements along the tree lined A1 corridor.

Night-time context

7.7.20. The Site and visual study area are in an essentially rural location. The extent of existing lighting is generally more prevalent to the low-lying south and to the west (associated with the Nene Valley and its existing settlements and transport corridors) and less prevalent to the more elevated north and to the east (where the plateau landscape is less settled and traversed by only minor unlit roads). The distribution of road lighting along the existing A47 is limited to the existing roundabout junctions at the western and eastern ends of the Proposed Scheme. The lighting at the western roundabout at the junction with the A1 is in an elevated and very open position and can be seen from much of the surrounding area. The lighting at the eastern roundabout is less widely visible but can be seen from the north-eastern fringes of the village of Sutton. Headlights of traffic movements along the existing A47 are visible from many surrounding locations and this would be more prevalent in winter.

Representative Viewpoints

7.7.21. The locations of representative viewpoints are shown in Figure 7.4 Visual Context (**TR010039/APP/6.2**). No specific landscape or visual sensitivities have been identified (with reference to any heightened designation value or focus on a particular key view) therefore viewpoints have been selected to represent the typical range of visual receptor types, viewing distances and directions of views associated with the study area.

7.7.22. Viewpoints are ‘representative’ and whilst taken from a fixed point, are intended to reflect the range of visual aspects experienced by the receptors they represent. The interpretation of the significance of visual effects on individual representative viewpoints should therefore be recognised as more widely informing the assessment of effects on surrounding visual receptor locations.

7.7.23. Table 7-4 lists the representative viewpoints, identifying the key receptors that each represents.

Table 7-4 : Representative viewpoints baseline summary

Viewpoint reference	Location	Approximate distance (m) and direction from Proposed Scheme (closest component likely to be visible)	Reason for selection	Viewpoint sensitivity (to the Proposed Scheme)
1	Sutton	400m south	Potential visual effects on residents on the north-eastern fringe of the village	High
2	Footpath West of Stibbington	800m south	Potential visual effects on footpaths users within the valley floor and on residents on the northern edge of Stibbington	High
3	Riverside open space (former picnic site on Nene Way)	0m south	Potential visual effect on users of the Nene Way east of Wansford and the A1 (near to a recently enhanced route passing below the A1)	High
4	Sacrewell Farm	500m north	Potential visual effects on recreational visitors to the Sacrewell Farm Visitor Centre and on users of Hereward Way footpath	High
A	Sutton Crossways Track	500m south-east	Potential visual effect on footpath users within open countryside to the east of the Proposed Scheme	High
B	Lower Lodge Farm	250m north-east	Potential visual effect on residents at the eastern end of the Proposed Scheme	High
C	Footpath south of Upton	1km north	Potential visual effects on footpath users and on residents on the southern fringes of Upton village	High
D	Footpath west of Sutton (Nene Way)	400m south-west	Potential visual effect on users of the Nene Way riverside footpath within the County Wildlife Site	High
E	Riverside footpath (Nene Way)	50m south	Potential visual effect on users of the Nene Way riverside footpath within the County Wildlife Site	High
F	Footpath west of Sutton Heath Road	700m north-east	Potential visual effect on footpath users	High
G	Footpath at Windgate Way	500m north	Potential visual effects on users of the nearby	High

Viewpoint reference	Location	Approximate distance (m) and direction from Proposed Scheme (closest component likely to be visible)	Reason for selection	Viewpoint sensitivity (to the Proposed Scheme)
			Hereward Way and visitors to Sacrewell Farm and Sacrewell Lodge	
H	Thornhaugh (opposite Church)	600m north-west	Potential visual effects on residents on the southern fringes of the village with views out to surrounding countryside	High
I	Black Swan Hill	0m west	Potential visual effect on residents	Medium (reflecting proximity to existing A47/A1 junction)
J	Footpath at Bunkers Hill (south of Wansford)	700m south-west	Potential visual effect on footpath users and nearby residents	High

7.7.24. Following discussion of the respective focus with Peterborough City Council, representative viewpoints have been divided into 'visualisation' views (1 to 4) and 'baseline' views (A to J) (Figures 7.6.1a- 7.6.18b) (**TR010039/APP/6.2**). The assessment has considered visual effects at all viewpoints, however viewpoints 1 to 4 were selected for visualisation presentation as they are considered most appropriate to illustrate the visual effects of the Proposed Scheme.

Table 7-5 : Representative viewpoints assessment reporting

Viewpoint location references	Viewpoint 'type'	Assessment detail	Baseline photo view	Proposed Scheme photomontage view
1 to 4	Visualisation	Detailed	Yes	Yes
A to J	Baseline	Detailed	Yes	No

7.7.25. A description of the existing view at each viewpoint location is provided in Appendix 7.5 (Representative Viewpoints) (**TR010039/APP/6.3**). Baseline photographs of the view from each representative viewpoint location are presented in Figure 7.6.1 to 7.6.18 (**TR010039/APP/6.2**). Two contiguous directions of view are considered at four of the viewpoints to provide an understanding of the broader panorama potentially affected by the Proposed Scheme.

Visual Receptors

7.7.26. Visual receptor locations are identified in Figure 7.5. Visual Receptors (**TR010039/APP/6.2**). A description of the existing view from each receptor location is provided in Appendix 7.4 (Visual Receptors) (**TR010039/APP/6.3**). Visual receptor categories comprise:

- Residential - private views from people's homes (either assessed as individual properties, grouped properties or, where views would be similar, whole settlements in general)
- Community facilities – views from public buildings and facilities
- Commercial locations - views from people's places of work
- Public Rights of Way – views of footpath users
- Roads - views of people travelling along roads

7.7.27. The proximity of the Proposed Scheme to the existing A47 means that many of the visual receptors within the study area already experience existing views of highway infrastructure and traffic. As a result, the sensitivity of some receptors to visual change is diminished.

7.7.28. No material forces for landscape or visual change with the potential to affect the visual setting and views have been identified.

7.7.29. An introductory summary of the main visual receptor categories is provided below.

Residential receptors

7.7.30. Residential receptors tend to be associated with the more settled southern areas of the study area within the Nene Valley and to the south of the existing A47. These include the villages of Wansford, Stibbington and Sutton.

7.7.31. As per the typical descriptions provided in Table 3.41 of LA 107 Revision 2 (Highways England, 2020) residential receptors are generally considered to be **high sensitivity**.

Community receptors

7.7.32. Community receptors are relatively few but include the visitor centre at Sacrewell Farm.

7.7.33. As per the typical descriptions provided in Table 3.41 of LA 107 Revision 2 (Highways England, 2020) community receptors are generally considered to be of **low or moderate sensitivity**. However, in some instances such receptors may be deemed to be of **high sensitivity** where the enjoyment of the

surrounding landscape is important, such as at the Sacrewell Farm Visitor Centre.

Commercial receptors

7.7.34. Commercial receptors are places of work or commercial locations such as shops or filling stations.

7.7.35. As per the typical descriptions provided in Table 3.41 of LA 107 Revision 2 (Highways England, 2020) commercial receptors are generally considered to be of **low sensitivity.**

PRoW

7.7.36. The footpath and public right of way (PRoW) network within the study area is generally extensive and includes named routes including the Nene Way and Hereward Way and some permissive routes along the riverside. Areas where the absence of access is noted include areas on the southern side of the River Nene to the north of Stibbington (there are no footpaths between the river and the village) and areas to the north of the existing A47 east of Sutton Heath Road (there are no footpaths between the existing A47 and the village of Upton).

7.7.37. As per the typical descriptions provided in Table 3.41 of LA 107 Revision 2 (Highways England, 2020), footpath receptors are generally considered to be of **high sensitivity,** but this may be moderated where the where there is evidence of very infrequent use or the footpath provides a more functional connection between two points and isn't used by people for recreation or enjoyment of their surrounding landscape.

Road receptors

7.7.38. Views of the Proposed Scheme would be experienced by users of both the trunk road network (including the A47 and A1) and the local network (such as Sutton Heath Road, the network of rural lanes to the north and the Castor Road to the east).

7.7.39. As per the typical descriptions provided in Table 3.41 of LA 107 Revision 2 (Highways England, 2020), road receptors identified within the study area are considered to be of **low sensitivity**. LA 107 states that users of 'scenic roads' may be considered to be of medium sensitivity, however none were identified within the study area.

7.8. Potential impacts

7.8.1. The main physical components and activities associated with the Proposed Scheme which have the potential to result in landscape or visual effects are listed below.

Construction impacts

- Removal of existing woodland, individual trees and sections of linear highway planting or woodland belts.
- Changes in landform and formation of new earthworks.
- The temporary presence of construction compounds and haul routes.
- The general presence of construction activity, construction vehicles, plant, and associated traffic management interventions to temporarily divert traffic and pedestrian movements.

Operational impacts

- The introduction of approximately 2.6km of new dual carriageway and associated earthworks.
- The introduction of approximately 1km of new and realigned local roads and associated earthworks (principally the new northern Sutton Heath Road and tie ins to Castor Road).
- The introduction of new WCH (walking, cycling, horseriding) routes.
- Creation of several surface water attenuation basins and flood storage areas and associated earthworks.
- The introduction of moving vehicles (visible and audible), sometimes in locations where there are currently none.
- The introduction of new areas of woodland, trees and hedgerows planted as mitigation.
- The introduction of new road furniture, including safety barriers, boundary fencing and signage.
- The introduction of new lighting.

7.8.2. In the specific baseline context at Wansford to Sutton, the principal potentially adverse and potentially significant landscape and visual effects of these impacts, which have been the focus of this assessment and which have influenced the key mitigation strategies adopted during the iterative design development, can be summarised as:

- The potential visual effects on users of the Sacrewell Farm Visitor Centre and its connected footpath network.
- The potential effect on landscape character of the proximity of the Proposed Scheme to the River Nene approximately halfway between the villages of

Wansford and Sutton, and its potential visual effects in views across the valley floor from the south from the vicinity of Stibbington.

- The potential effect on landscape character of landscape changes to Sutton Heath Road and the rural landscape to its east.
- The potential visual effect on users of the Nene Way long distance footpath.
- The potential visual effect on properties on the north-eastern fringes of the village of Sutton, including changes to the location and extent of road lighting.

7.9. Design, mitigation and enhancement measures

Construction phase

7.9.1. Mitigation during construction would comprise:

- Keeping a tidy and organised site.
- Materials delivered on an 'as needed' basis to prevent unnecessary stockpiles.
- Protection of retained vegetation in accordance with British Standard (BS) 5837:2012 (see Arboricultural Impact assessment at Appendix 7.6) (**TR010039/APP/6.3**).

Operation phase

7.9.2. Based on a review of the landscape and visual policy context and taking account of the potentially adverse effects of the Proposed Scheme identified above, the following overarching landscape and visual objectives were identified and have guided the iterative development of the Proposed Scheme design. Securing these objectives is embedded within the location, scale, extent and height of the highway geometry and earthworks design:

- Remaining close to the route of the existing A47 both in its alignment and elevation.
- Taking advantage of the existing east to west tree belt at the eastern end of the Proposed Scheme to provide screening and a landscape buffer with the village of Sutton to the south.
- Minimising the land-take associated with how the Proposed Scheme ties in with the local road network.

7.9.3. The Environmental Masterplan (**TR010039/APP/6.8**) sets out the additional proposed landscape and visual mitigation of the Proposed Scheme. At this more detailed level, mitigation aims to also achieve the following:

- New hedgerow, tree, and woodland planting to screen the Proposed Scheme.

- New hedgerow planting to integrate the Proposed Scheme with the existing field pattern.

7.9.4. The proposed landscape and visual mitigation measures form part of a wider complementary association with other environmental mitigation functions derived from the requirements identified within the various ES chapters (**TR010039/APP/6.1**). These include mitigation of potential ecological and heritage effects.

7.9.5. All proposed landscape and visual mitigation measures would be implemented by the year of opening (proposed at 2025) with a mitigation design year of 2040 (fifteen years later and the date by which proposed planting would have established to a point of relative maturity and therefore size). For the purposes of assessment, mitigation planting growth and height assumptions have been defined in Table 7-6 below (subject to the variables of ground conditions, general climatic influences and individual species growth rates). These assumptions have also been used in the production of photomontages (refer to Figure 7.6.1 to 7.6.6) (**TR010039/APP/6.2**):

Table 7-6 : Mitigation planting growth and height assumptions

Planting type	Year of opening	Year 15
Individual trees (6-8cm light standards)	2.5m	6m
Woodland (transplants only)	0.6m	8m
Shrubs (transplants only)	0.6m	3m
Scrub (transplants only)	0.6m	1.5m
Hedgerow – trimmed (transplants only)	0.6m	2m
Hedgerow - informal (transplants only)	0.6m	3m

7.10. Assessment of likely significant effects

7.10.1. This section assesses the significance of the residual effects of the Proposed Scheme on landscape and visual receptors during both construction and operation. The assessments consider season differences between winter and summer and take account of night-time views and the visual effects of lighting and night-time traffic movements. The assessments follow the iterative design development process and incorporation of the mitigation measures set out in the Environmental Masterplan (**TR010039/APP/6.8**) and Record of Environmental Actions and Commitments (REAC) contained within the Environmental Management Plan (**TR010039/APP/7.5**).

Construction phase effects

Landscape effects during construction

7.10.2. The detailed assessment of construction phase effects on the two landscape character areas in the landscape study area is set out in Appendix 7.3 (Landscape Character Areas) (**TR010039/APP/6.3**). This includes consideration of the extent of tree and hedgerow removal that would take place during construction and the effects on landscape character of the temporary presence of construction activity. The conclusions of the landscape character assessment are summarised in Table 7-7 below.

Table 7-7 : Construction effects on landscape character (summary)

Name and Reference	Magnitude of change	Significance of effect
Nassaburgh Limestone Plateau (Medium sensitivity)	Moderate adverse	**Moderate adverse (significant)**
Nene Valley (Medium sensitivity)	Major adverse	**Large adverse (significant)**

7.10.3. The effect on both landscape character areas during construction would be significant. Within both character areas the construction stage effects of the Proposed Scheme would stem 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 including more general site clearance; the excavation of cuttings; the formation of new earthworks; general construction activity; the storage of materials and topsoil; the presence of plant, equipment, machinery and construction vehicles; and temporary traffic diversions.

7.10.4. The extent of the Proposed Scheme and associated vegetation clearance and construction works within the Nene Valley is smaller than within the Nassaburgh Limestone Plateau and both of the main construction compounds (south of Sacrewell Farm and east of Sutton Heath Road) would be located within the Nassaburgh Limestone Plateau. However, despite the construction works covering a less extensive area within the Nene Valley, the landscape effect would be particularly evident where the construction operations, including tree clearance and earthworks, are located within close of the river approximately halfway between the settlements of Wansford and Sutton. The topographical relationship between the immediate setting of the river and views north towards the Proposed Scheme and plateau landscape would feature construction activity including the presence of large scale plant on the skyline (although this would essentially be a visual effect, and some visible activity would fall within the adjacent plateau landscape, there would be an impact on the visual setting and therefore perceived character of the Nene Valley landscape).

7.10.5. Within the Nassaburgh Limestone Plateau, the construction of the Proposed Scheme would cause a partial loss of key landscape characteristics and would introduce conspicuous elements into the view (i.e. compounds, earthworks, storage of material, plant equipment and vehicles). However, this change is offset by the existing visibility of the A47 and that the scale and geometric pattern of the landscape displays some capacity to accommodate linear development of this type

7.10.6. Considering these differences, the landscape effect on the Nene Valley during construction is assessed as Large adverse, whereas the effect on the Nassaburgh Limestone Plateau would be Moderate adverse. This reflects the significance on both character areas during construction, while the difference in the level of effect assessed reflects the greater change to landscape character that would occur within the Nene Valley.

Visual effects during construction

General

7.10.7. The construction of the Proposed Scheme would bring about disruption to existing views. The removal of existing vegetation would lead to an increased openness in views and the disruption caused by construction earthworks combined with the diverse and extensive influence of construction vehicles, machinery, materials and haul routes would notably contrast with the rural surroundings away from the existing trunk roads.

7.10.8. The two main construction compounds would be located within agricultural land to the south of Sacrewell Farm and to the east of Sutton Heath Road. These two main constriction compounds would be in locations that are not widely visible from surrounding areas and visual receptors. Both locations are partially screened by nearby woodland belts. Although the eastern compound to the east of Sutton Heath Road appears to be in a more open position, there are no visual receptors (either footpaths or residential properties) that would experience views of the compound from the north. A third compound would be located south of the western roundabout. This smaller compound would be in a more open position visible from the south.

Seasonal variation in visual effects during construction

7.10.9. There would be some increase in visibility of construction compounds and construction activity during winter months. This would be especially the case where screening is afforded by woodland belts that would be more visually permeable during winter months such as south of Sacrewell Farm and north of Sutton village.

Night-time visual effects during construction

7.10.10. It would be anticipated that construction operations would largely be undertaken during daylight hours, but with potential for some construction lighting. This would be expected to be concentrated within site compounds.

Effects on representative viewpoints

7.10.11. The detailed assessment of construction phase visual effects on representative viewpoints is set out in Appendix 7.5 (Representative Viewpoints) (**TR010039/APP/6.3**). This takes account of all aspects of construction including tree and vegetation removal, temporary construction compounds, materials stockpile areas and haul routes. The conclusions of the assessment are summarised in Table 7-8 below.

Table 7-8 : Construction effects on representative viewpoints (summary)

Viewpoint reference	Magnitude of change	Significance of effect
1. Sutton High sensitivity	Moderate adverse	Large adverse
2. Footpath West of Stibbington High sensitivity	Moderate adverse	Moderate adverse
3. Riverside open space (former picnic site on Nene Way) High sensitivity	Major adverse	Large adverse
4. Sacrewell Farm High sensitivity	Minor adverse	Moderate adverse
A. Sutton Crossways Track High sensitivity	Moderate adverse	Moderate adverse
B. Lower Lodge Farm High sensitivity	Moderate adverse	Moderate adverse
C. Footpath south of Upton High sensitivity	No change	Neutral
D. Footpath west of Sutton (Nene Way) High sensitivity	Moderate adverse	Moderate adverse
E. Riverside footpath (Nene Way) High sensitivity	Major adverse	Large adverse
F. Footpath west of Sutton Heath Road High sensitivity	Moderate adverse	Moderate adverse
G. Footpath at Windgate Way High sensitivity	Major adverse	Large adverse
H. Thornhaugh (opposite Church) High sensitivity	No change	Neutral
I. Black Swan Hill Medium sensitivity	Moderate adverse	Moderate adverse
J. Footpath at Bunkers Hill (south of Wansford) High sensitivity	Minor adverse	Slight adverse

7.10.12. The most significant construction phase visual effects on representative viewpoints (Figures 7.6.1a- 7.6.18c) (**TR010039/APP/6.2**) would associate with

those locations in closest proximity to the Site and construction works. Large (significant) adverse visual effects would occur at viewpoints 3 and E on the Nene Way riverside footpath (due to proximity to the Site); at viewpoint 1 on the north-eastern fringe of Sutton (due to the removal of some lengths of the existing tree belt which presently terminate views to the north); and at viewpoint G on Windgate Way within the wider Sacrewell Farm estate (due to construction activity associated with the new slip road over a relatively short distance to the west).

Effects on visual receptors

7.10.13. The effects on visual receptors within the study area (including all aspects of construction including temporary construction compounds, materials stockpile areas and haul routes) are reported in detail in Appendix 7.4 (Visual Receptors) (**TR010039/APP/6.3**). Receptors are located and the effects upon them summarised by Figure 7.5 Visual Receptors (**TR010039/APP/6.2**). This graphically communicates the distribution and extent of the significant visual effects of the Proposed Scheme anticipated during the construction phase. A summary of construction effects on each receptor type is provided in Table 7-9.

Table 7-9 : Construction effects on visual receptors (summary)

Visual receptor type	Significance – number of visual receptors affected				
	Very large adverse	Large adverse	Moderate adverse	Slight adverse	Neutral
Residential	0	1	6	7	4
Community	0	1	0	0	1
Commercial	0	0	0	1	2
PRoW	0	3	3	3	4
Roads	0	0	0	6	1

7.10.14. The following provides a general overview of the effects on each receptor type, summarising the potential nature, extent and significance of visual effects that would occur across the study area.

Residential receptors

7.10.15. The residential receptors identified in Table 7-9 that would be subject to a significant visual effect during construction are as follows:

Large adverse:

- Sutton Lodge, Sutton

Moderate adverse

- Windgate Way (property with same name as route)
- Heath House, Sutton Heath Road
- Lower Lodge Farm, Upton Road
- Willowhayne House, Sutton Drift, Sutton
- Properties on north-eastern fringe of Sutton village (including Manor Farm)
- Stibbington (properties at Old Great North Road with rear views across valley)

7.10.16. Significant construction phase visual effects on residential properties primarily associates with the north-eastern fringes of the village of Sutton. This reflects the clearance of a section of the east to west tree belt that terminates views to the north and north-east. This tree clearance would open views to the construction works associated with the new dual carriageway beyond. The removal of sections of hedgerow to the north of the intervening arable field would also increase the visual exposure to the construction works on this side of the village. Although existing views north from the edge of the village feature traffic movements along the existing A47, the scale of the construction works would result in a temporary adverse effect.

7.10.17. Significant visual effects would also occur in views north from properties in Stibbington with rear views over the open valley floor to the north. Although the proposed construction works would be at a distance, a temporary adverse effect on visual amenity would occur due to the rural nature of the current view. This would be especially the case during winter months when intervening tree cover within the valley floor would provide less effective screening.

7.10.18. Individual, more isolated properties at Windgate Way, Heath House and Lower Lodge Farm would also be subject to significant visual effects during construction due to their proximity to the Proposed Scheme.

Community and commercial receptors

7.10.19. The community and commercial receptors identified in Table 7.9 that would be subject to a significant visual effect during construction are limited to:

Large adverse:

- Sacrewell Farm Visitor Centre

7.10.20. The visitor centre at Sacrewell Farm is in a slightly elevated position with reasonably panoramic views over the landscape to the south and south-east. The

scale of the construction works and the plant likely to be used mean that they would be more visible to the south-east than existing traffic movements along the current A47. Awareness of the construction works would also be heightened by the access into Sacrewell being directly impacted by the Proposed Scheme.

PRoW

7.10.21. The footpath receptors identified in Table 7.8 that would be subject to a significant visual effect during construction are as follows:

Large adverse:

- The Nene Way riverside footpath (including sections of PRoW and permissive paths)
- The footpath network north of Sacrewell Farm Visitor Centre including sections of Hereward Way and Windgate Way around Sacrewell Lodge with views principally to the south-west
- The footpath through the Sacrewell Farm Visitor Centre (a section of Hereward Way) with views principally to the south-east

Moderate adverse:

- The east to west footpath between Sacrewell Farm and Sutton Heath Road
- The east to west footpath west of Stibbington
- Sutton Crossways footpath

7.10.22. The visual effect on users of the Nene Way during construction would be large and significant due to the proximity of the route to the Proposed Scheme. The route passes adjacent or within the Site in two locations. Both locations would feature large scale construction works involving earthworks and carriageway construction.

7.10.23. The extensive footpath network around Sacrewell Farm is often in a slightly elevated position with reasonably panoramic views over the landscape to the south, south-east, and, from Windgate Way, south-west. The scale of the construction works and the plant likely to be used mean that they would be more visible to the south-east and south-west than existing traffic movements along the current A47.

Road receptors

7.10.24. The low sensitivity of road receptors means that none would be subject to a significant visual effect during the temporary construction works.

Operation

Landscape effects during operation

7.10.25. The detailed assessment of the operational phase effects on the two landscape character areas is set out in Appendix 7.3 (Landscape Character Areas) (**TR010039/APP/6.3**). The conclusions of the assessment are summarised in Table 7-10 below.

Table 7-10 : Operation effects on landscape character (summary)

	Year 1		Year 15	
Name and Reference	**Magnitude of change**	**Significance of effect**	**Magnitude of change**	**Significance of effect**
Nassaburgh Limestone Plateau (medium sensitivity)	Moderate adverse	**Moderate adverse**	Minor adverse	**Slight adverse**
Nene Valley (medium sensitivity)	Moderate adverse	**Moderate adverse**	Minor adverse	**Slight adverse**

7.10.26. The adverse effects on the landscape, particularly at Year 1, principally associate with:

- the proximity of the new dual carriageway to the River Nene just west of the disused railway west of Wittering Brook. The landscape effect is caused by the removal of roadside vegetation and the scale of the required steeply sloping landform within the shallow slopes of the valley and within proximity to the riverside.
- the removal of sections of tree and hedgerow cover and introduction of new earthworks within the southern extent of the Nassaburgh Limestone Plateau landscape.

Visual effects during operation

The zone of theoretical visibility (ZTV) of the final design

7.10.27. Figure 7.4 Visual Context (**TR010039/APP/6.2**) shows the extent of potential visibility of the Proposed Scheme in relation to visibility of the carriageway, vehicles, and general highway infrastructure. The relative significance of effects within the extent of ZTV is considered within the representative viewpoint assessment and assessment of effects on visual receptors reported below.

General introduction to operational phase visual effects

7.10.28. In the year of opening, prior to the establishment of Proposed Scheme landscape mitigation, there would be potential for visual effects associated with views of road infrastructure and vehicles. In the topographical context of the Proposed Scheme, most visual effects would be caused by the visibility of high sided

vehicles using the new road or of new signage or lighting columns. The general absence of proposed high embankments or structures (such as overbridges) mean that the built highway infrastructure would generally remain unseen other than at closer quarters. Effects would include views of traffic movements experienced by occupiers of residential properties, recreational users of the footpath network, users of local community facilities, workers in commercial premises and vehicle travellers.

7.10.29. By year 15 of operation, the establishment of Proposed Scheme landscape mitigation would contribute to a reduction in the extent and magnitude of visual change.

Seasonal variations in operation phase visual effects

7.10.30. Seasonal variations in the visibility of the Proposed Scheme would occur in some locations. Variations would be particularly noticeable in views north across the Nene Valley from the vicinity of Stibbington and in views north from the north-west fringes of Sutton. This reflects where summertime screening would be afforded by the effect of layers of dispersed vegetation and tree cover within a low line of sight or by tree belts of limited width.

Night-time operational phase visual effects

7.10.31. Proposed Scheme road lighting and vehicle headlights would result in some night-time effects on views.

7.10.32. Overall, and except for the new northern link at Sutton Heath Road, the Proposed Scheme would result in night-time vehicle movements in broadly similar locations and directions of view compared to the existing A47. New traffic headlights at Sutton Heath Road (across what is currently open farmland) would cause only limited night-time visual effects due to the absence of visual receptors within this vicinity (there are no residential properties or footpaths with open views nearby).

7.10.33. Road lighting associated with the Proposed Scheme would continue to be limited to the roundabouts. Night-time visibility would be largely unchanged at the western roundabout (the existing lighting here is very widely visible and proposed new tree planting would slightly reduce the extent of visibility of the replacement lighting). Street lighting at the eastern existing roundabout would be removed with new street lighting introduced at the new central roundabout north of Sutton Drift. The height and overall extent of street lighting would be essentially unchanged. The repositioning of street lighting north of the village of Sutton would reduce visibility from the north-eastern fringes of the village and result in some slight beneficial change in both day-time and night-time views.

Effects on representative viewpoints

7.10.34. The detailed assessment of operational effects on representative viewpoints is set out in Appendix 7.5 (Representative Viewpoints) (**TR010039/APP/6.3**). The conclusions of the visual assessment are summarised in Table 7-11 below. Refer to Figures 7.6.1 to 7.6.11 for photo illustration of the respective viewpoints (**TR010039/APP/6.2**).

Table 7-11 : Operation effects on representative viewpoints (summary)

	Year 1		Year 15	
Viewpoint	**Magnitude of change**	**Significance of effect**	**Magnitude of change**	**Significance of effect**
1. Sutton High sensitivity	Minor adverse	Moderate adverse	Minor beneficial	Slight beneficial
2. Footpath West of Stibbington High sensitivity	Minor adverse	Moderate adverse	Negligible	Neutral
3. Riverside open space (former picnic site on Nene Way) High sensitivity	Minor adverse	Slight adverse	Minor beneficial	Slight beneficial
4. Sacrewell Farm High sensitivity	Minor adverse	Slight adverse	No change	Neutral
A. Sutton Crossways Track High sensitivity	Negligible adverse	Slight adverse	Minor beneficial	Slight beneficial
B. Lower Lodge Farm High sensitivity	Negligible beneficial	Slight beneficial	Negligible beneficial	Slight beneficial
C. Footpath south of Upton High sensitivity	No change	Neutral	No change	Neutral
D. Footpath west of Sutton (Nene Way) High sensitivity	Minor adverse	Slight adverse	Negligible	Neutral
E. Riverside footpath (Nene Way) High sensitivity	Moderate adverse	Moderate adverse	Minor adverse	Slight adverse
F. Footpath west of Sutton Heath Road High sensitivity	Minor adverse	Slight adverse	Negligible adverse	Slight adverse
G. Footpath at Windgate Way High sensitivity	Moderate adverse	Moderate adverse	Minor adverse	Slight adverse
H. Thornhaugh (opposite Church) High sensitivity	No change	Neutral	No change	Neutral
I. Black Swan Hill Medium sensitivity	Minor adverse	Slight adverse	Negligible adverse	Slight adverse
J. Footpath at Bunkers Hill (south of Wansford) High sensitivity	Negligible adverse	Slight adverse	Negligible adverse	Neutral

7.10.35. Significant operation phase visual effects would occur in year 1 at viewpoint E on the Nene Way riverside footpath (due to its proximity to the new embankment and removal of existing vegetation prior to new planting establishing), at viewpoint 1 on the north-eastern fringe of Sutton (due to the immaturity of new planting to restore the continuity of the east to west woodland belt to the south of

the Proposed Scheme); at viewpoint 2 on the northern edge of Stibbington (due to the immaturity of new screen planting on the embankments to the west of Wittering Brook); and at viewpoint G at Windgate Way (due to the immaturity of new hedgerow and dispersed tree planting to soften the appearance of the new curving slip road on the opposite side of the open fields).

7.10.36. By year 15 of operation new planting proposed as part of the Environmental Masterplan (**TR010039/APP/6.8**) would have reduced the visual effect at most representative viewpoints to not significant. Some residual adverse visual effects (but not significant) would remain, including along the Nene Way riverside footpath at viewpoint E. This is due to the proximity of large scale earthworks close to the riverside. However, new planting would soften the appearance of the earthworks and largely screen the highway infrastructure and associated traffic movement, this is set against the reduction in the openness of the view along the riverside and the riverbank area which would become more enclosed. This is considered to be an adverse effect as open views along the valley and riverside contribute to visual amenity and a sense of tranquillity.

Effects on visual receptors

7.10.37. The effects on visual receptors within the study area are reported in Appendix 7.4 (Visual Receptors) (**TR010039/APP/6.3**) and located and graphically summarised on Figure 7.5. Visual Receptors (**TR010039/APP/6.2**). A summary of year 1 and year 15 visual effects on each receptor group is provided in Tables 7-12 and 7-13.

Table 7-12 : Year 1 operation effects on visual receptors (summary)

Visual receptor type	Significance – number of visual receptors affected						
	Very large adverse	Large adverse	Moderate adverse	Slight adverse	Neutral	Slight Beneficial	Moderate beneficial
Residential	0	0	1	7	9	0	1
Community	0	0	1	0	1	0	0
Commercial	0	0	0	0	3	0	0
PRoW	0	0	4	2	7	0	0
Roads	0	0	0	0	6	0	0

Table 7-13 : Year 15 operation effects on visual receptors (summary)

Visual receptor type	Significance – number of visual receptors affected						
	Very large adverse	Large adverse	Moderate adverse	Slight adverse	Neutral	Slight beneficial	Moderate beneficial
Residential	0	0	0	4	11	2	1
Community	0	0	0	1	1	0	0
Commercial	0	0	0	0	3	0	0
PRoW	0	0	0	5	7	1	0
Roads	0	0	0	0	7	0	0

7.10.38. The following provides a general overview of the effects on each receptor type, summarising the potential nature, extent and significance of visual effects that would occur across the study area.

Residential receptors

7.10.39. The residential receptors identified in Tables 7.12 and 7.13 that would be subject to a significant operational visual effect in the year of opening of the Proposed Scheme are as follows:

Moderate adverse:

- Stibbington (properties at Old Great North Road with rear views across valley)

Moderate beneficial:

- Deep Springs

7.10.40. The adverse effects in year 1 at Stibbington would affect properties on the edge of the village with rear views north over the valley floor. The new dual carriageway to the west of Wittering Brook would be on embankments at a slightly more elevated level than the existing A47. Tree clearance would open views to this section of the route (principally high sided traffic movements using the road) and new planting on the embankments would not have sufficiently matured to provide screening.

7.10.41. A beneficial effect would occur at Deep Springs due to the realignment of the A47 further north to the far side of the existing tree belt. The adjacent section of tree

belt to the north of the property would be retained unaffected and traffic movements would disappear from the immediately adjacent existing A47.

7.10.42. By year 15 of operation new planting proposed as part of the Environmental Masterplan (**TR010039/APP/6.8**) would have reduced the visual effect at these and other residential receptors. Significant visual effects at year 15 would be limited to:

Moderate beneficial (significant):

- Deep Springs (see above)

7.10.43. No significant adverse visual effects on residential properties would persist by year 15. New planting would screen views of the Proposed Scheme from Stibbington and would largely replicate baseline conditions, with only very occasional visibility of high sided vehicles, principally during winter months.

7.10.44. Some residential properties on the north-eastern fringe of the village of Sutton would experience a slight beneficial (not significant) effect by year 15. This is because new woodland and hedgerow planting would have matured to screen the new dual carriageway. Some improvements to the views would be gained due to the removal of currently visible lighting columns at the eastern roundabout (to be removed) and due to a reduction in visible traffic movements along the alignment of the existing A47 and Castor Road (traffic movements along the new A47 would be screened by the intervening tree belt, strengthened by proposed new planting).

Community and commercial receptors

7.10.45. The community and commercial receptors identified in Tables 7.12 and 7.13 that would be subject to a significant operational phase visual effect in the year of opening of the Proposed Scheme are as follows:

Moderate adverse

- Sacrewell Farm Visitor Centre

7.10.46. A significant visual effect on the Sacrewell Farm Visitor Centre would persist until new planting matures. This would principally relate to views to the south-east where sections of removed hedgerow would open views to the new dual carriageway. Proposed replacement hedgerows would not be mature and a slight increase in the elevation of the carriageway to the west of Wittering Brook would

increase the visibility of traffic movements. Once new hedgerow and tree planting matures the effect would become not significant.

7.10.47. No receptors would be subject to a significant effect in year 15.

PRoW

7.10.48. The footpath receptors identified in Tables 7.12 and 7.13 that would be subject to a significant operational visual effect in the year of opening of the Proposed Scheme are as follows:

Moderate adverse

- Nene Way
- Footpath network north of Sacrewell (including sections of Hereward Way and Windgate Way) with principally south-west facing views
- Footpath through Sacrewell visitor area (Hereward Way) with principally south-east facing views (route changes as part of the Proposed Scheme to follow new access road)
- Footpath west of Stibbington

7.10.49. By year 15 of operation new planting proposed as part of the Environmental Masterplan (**TR010039/APP/6.8**)would have reduced the visual effect at these and all other footpath receptors and no significant effects would remain.

7.10.50. The footpath network north of Sacrewell Farm would be subject to significant visual effects to the south-west until proposed new tree and hedgerow planting matures.

7.10.51. Similarly, the Nene Way would be subject to a significant residual effect in year 1 due to its proximity to the Proposed Scheme and specifically large scale earthworks means that the visual effect would be significant. At Year 1 there would be a loss of visual amenity at the footpath within a sensitive riverside location.. However, new planting would soften the visual effect and, once it has matured by Year 15, there would be no residual significant visual effect on users of the footpath.

Road receptors

7.10.52. The low sensitivity of road receptors means that none would be subject to a significant visual effect in year of opening or year 15.

7.11. Monitoring

7.11.1. Monitoring commitments would ultimately be defined as an outcome of the DCO process, but initial assumptions on the scope of ongoing maintenance and management interventions to achieve the environmental objectives of the Proposed Scheme are set out in the Environmental Management Plan (First Edition) (**TR010039/APP/7.5**). Planting and seeding, proposed as mitigation for landscape and visual effects, would be maintained in order to achieve their full establishment throughout construction and then handed over for a landscape-establishment maintenance period of three years, prior to handover to the future maintaining authority for on-going highway maintenance.

7.12. Summary

7.12.1. The LVIA chapter comprises a description of the existing environment and identification of the potential effects of the Proposed Scheme on surrounding landscape and visual receptors. The landscape receptors with potential to experience change as a result of the Proposed Scheme comprise landscape character areas. The visual receptors with potential to experience change as a result of the Proposed Scheme comprise 14 representative viewpoints and 43 individual receptor locations. The assessment of landscape and visual effects includes consideration of the effect of change to or removal of existing landscape features; the effect of temporary construction works (including temporary compounds and haul routes); the effect of the introduction of new highway infrastructure; the effect of vehicles travelling along the Proposed Scheme; and the effect of the requirements identified in the Environmental Masterplan (**TR010039/APP/6.8**).

7.12.2. Overall, during **construction** there would be significant effects on the landscape character of both the Nene Valley and the Nassaburgh Limestone Plateau character areas. This reflects tree clearance as well as the presence of construction activity within these rural landscapes.

7.12.3. During **construction** some visual receptors would be subject to a significant visual effect. These would include a number of residential properties at Upton and Stibbington; users or the Nene Way; visitors to Sacrewell Farm; and users of the footpath network around Sacrewell Farm.

7.12.4. At **year of opening** there would be a moderate adverse (significant) effect on the landscape character of the Nene Valley and a moderate adverse (significant) effect on the character of the Nassaburgh Limestone Plateau landscape.

7.12.5. At **year of opening** there would be moderate adverse (significant) visual effects on some visual receptors. These would include users of the Nene Way; visitors to

Sacrewell Farm; and users of the footpath network to the north of Sacrewell Farm.

7.12.6. By **year 15** of operation, with the establishment of Proposed Scheme landscape mitigation, effects on landscape character would be slight adverse (not significant) on both the Nene Valley and Nassaburgh Limestone Plateau.

7.12.7. By **year 15** of operation the establishment of Proposed Scheme planting would contribute to screening and landscape integration and there would be no residual significant visual effects.

7.12.8. DMRB LA 107 requires that the combined effect of the Proposed Scheme on landscape and visual amenity as a whole is to be 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 of effect, this assessment concludes that overall, combining both landscape and visual effects, the Proposed Scheme would not, overall, result in a significant long term residual effect on overall landscape and visual amenity. It is acknowledged that a small number of visual receptors would experience a residual adverse (albeit not significant) visual effect, however in the context of the overall Proposed Scheme this would be a relatively limited change.

7.13. References

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7.14. Glossary

Term	Description
AIA	Arboricultural Impact Assessment
BOAT	Byway Open to All Traffic
BS	British Standard
CMLI	Chartered Member of the Landscape Institute
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ES	Environmental Statement
GLVIA	Guidelines for Landscape and Visual Impact Assessment
LVIA	Landscape and Visual Impact Assessment
LCA	Local (landscape) Character Area
NCA	National (landscape) Character Area
NSIP	Nationally Significant Infrastructure Project
NPS NN	National Policy Statement for National Networks
PCF	Project Control Framework
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
SoS	Secretary of State
WCH	Walking, cycling, horseriding
ZTV	Zone of Theoretical Visibility