Bexhill to Hastings Link Road

Chapter 16: Combined and Cumulative Effects

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List of Contents

Page

Volume 1

Volume 2

No appendices required for this chapter.

Volume 3

No drawings required for this chapter.

16 Combined and Cumulative Effects

16.1 Introduction

16.1.1 This chapter brings together the principal findings of each of the topic chapters of the Environmental Statement (ES) in order to identify and assess the combined effects of the Scheme and the cumulative effects of the Scheme in association with other existing or future significant development projects within the study area.

16.2 Method of Assessment

Overview

16.2.1 Environmental effects can result from incremental changes caused by the interactions between impacts within a project and/or the interaction with the effects from other developments. For the purpose of this assessment, combined effects are defined as the interrelationship between impacts associated with the Scheme whilst the assessment of cumulative effects concerns incremental changes caused by other future actions (i.e. developments) together with the proposed Scheme.

16.2.2 The direct and indirect impacts of the Scheme have been assessed within the relevant topic chapters of the ES. The effects of past and present developments within the study area have already been assessed within the existing conditions and 'Do-Minimum' scenarios of the ES.

Legislative Framework

16.2.3 The European Community Directive 85/337/EEC as amended by the Directive 97/11/EC on "*The assessment of certain public and private projects on the environment*" requires consideration of the direct, indirect, secondary and cumulative impacts of a project. The EIA Directive also requires consideration of the interactions between potential environmental impacts.

16.2.4 Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 also requires a description of the likely significant effects of a development, which specifically includes the assessment of cumulative effects.

Existing Guidance

16.2.5 The assessment of the combined and cumulative effects of the Scheme draws upon the following sources of guidance:

- Highways Agency Interim Advice Note 81/06, DMRB Volume 11 Section 2 Part 5: Assessment and Management of Environmental Effects;
- *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*, Hyder May 1999, commissioned by the European Commission: Directorate-General XI (Environmental, Nuclear Safety and Civil Protection); and,
- *Institute of Environmental Management & Assessment: Guidelines for Environmental Impact Assessment*, IEMA 2004.

Study Area

16.2.6 The study area for the assessment of the combined effects of the Scheme reflects the study areas identified within the relevant topic chapters of the ES.

16.2.7 The cumulative effects of the Scheme are assessed in the context of other potential significant transport related schemes and major developments up the Design Year (2025) which fall within the 'more than likely' and 'near certain' categories as defined in the Highways Agency Interim Advice Note 81/06, Assessment and Management of Environmental Effects. This scope reflects the approach adopted within the Traffic and Transport Report submitted in support of the planning application for the Scheme and includes those major developments that have or are likely to have a significant environmental effect.

16.2.8 The following major schemes are considered as part of the cumulative effects assessment:

- Complementary traffic measures for the Scheme;
- Bexhill High School Redevelopment;
- North East Bexhill (Worsham Farm) and associated Glovers Farm junction off the Scheme (mixed-use development);
- West St Leonards (residential development);
- Proposed housing and commercial development within Bexhill and Hastings;
- A21 Baldslow Junction – Queensway Link Road; and,
- Pebsham Countryside Park.

16.2.9 The following potential significant development schemes within the study area have not been assessed as they fall outside either the 'near certain' or the 'more than likely' categories of future development:

- Turkey Road (West Bexhill) (mixed-use development without allocation within the Rother District Local Plan);
- Country Avenue (link road between Worsham Farm and the A259 Barnhorn Road not identified within the Rother District Local Plan);
- Upper Wilting Farm Railway Station (no funding mechanism identified to date); and,
- Glyne Gap Railway Station (no funding mechanism identified to date).

Assessment Methodology

Combined Effects

16.2.10 The assessment methodology for combined effects involves the identification of impact interactions associated with the Scheme upon separate environmental resources. The significance of construction and operational phase environmental impacts are brought forward from the preceding chapters of the ES into matrices providing a clear summary of potential impacts. The significance of combined effects upon each environmental resource is then made based upon the balance of significance scores.

16.2.11 For the purposes of this assessment combined effects of moderate adverse or beneficial and above are considered significant, although minor effects are still worthy of note. Weighting of impacts has not been applied to the matrices as such an approach is considered subjective and would make interpretation of the results difficult.

Cumulative Effects

16.2.12 This cumulative effects assessment involves the identification of incremental changes likely to be caused by other future developments together with the proposed Scheme. The identification of which potential significant transport related schemes and other major developments should be included within the cumulative effects assessment was based upon the scoping criteria given in Table 16.1 below:

Table 16.1 Certainty of Outcome and Development Status

Certainty of Outcome	Development Status
Near Certain: The outcome will happen or there is a high probability of it occurring	• Intent announced by proponent to regulatory agencies. • Approved development proposals. • Projects under construction.
More than likely: The outcome is likely to happen but some uncertainty	• Development application within the consent process and in accordance with development plan. • Development conditional upon the transport strategy/project proceeding.
Reasonably foreseeable: The outcome may happen but significant uncertainty	• Identified within a development plan and, although not directly associated with the transport project, may occur if the project is implemented.
Hypothetical: There is considerable uncertainty whether the outcome would ever happen	• Conjecture based upon currently available information. • Discussed on a conceptual basis. • One of a number of possible inputs in an initial consultation process.

Source:

Highways Agency Interim Advice Note 81/06, DMRB Volume 11 Section 2 Part 5: Assessment and Management of Environmental Effects.

16.2.13 The assessment of the potential effects of the future development identified as part of the scoping process outlined in Table 16.1 was based upon the methodologies for each topic area identified within the ES. The assessment of likely effect significance for each future development used the various topic specific significance criteria adopted for the assessment of the proposed Scheme.

16.2.14 The assessment of cumulative effects is not intended to provide a detailed assessment of the effects of future developments. In many instances the layout and design of future projects have not been developed to the same level of detail as that for the proposed Scheme. As such, assessments have been undertaken at a relatively high level in the context of broad development parameters sufficient to provide an understanding of the likely environmental effects of future developments and to enable adequate consideration of cumulative effects.

16.2.15 Combined effects have been used in order to present the likely cumulative effects of the Scheme and other relevant future developments. The significance of the combined effects of each scheme or development upon separate environmental resources has been presented in a matrix, with the overall effect significance upon each environmental resource or receptor based upon the balance of significance scores and the definitions provided within Table 16.2. Combined and cumulative effects of moderate adverse or beneficial and above are considered significant. Weighting of impacts has not been applied to the matrices.

16.3 Significance Criteria

16.3.1 The assessment of the significance of both the combined effects of the Scheme and the cumulative effects of the Scheme with other major developments has been based upon the definitions within Table 16.2.

Table 16.2 Combined and Cumulative Effects Significance Definitions

Significance	Definition
Major **(Adverse or Beneficial)**	Where the balance of the impacts of the Scheme or combined effects of the Scheme in association with other existing or more than likely/near certain future major developments upon an individual or collection of environmental receptors would be **highly significant** (positive or negative).
Moderate **(Adverse or Beneficial)**	Where the balance of the impacts of the Scheme or combined effects of the Scheme in association with other existing or more than likely/near certain future major developments upon an individual or collection of environmental receptors would be **significant** (positive or negative).
Minor **(Adverse or Beneficial)**	Where the balance of the impacts of the Scheme or combined effects of the Scheme in association with other existing or more than likely/near certain future major developments upon an individual or collection of environmental receptors would be **noteworthy but not significant** (positive or negative).
Negligible	Where the balance of the impacts of the Scheme or combined effects of the Scheme in association with other existing or more than likely/near certain future major developments upon an individual or collection of environmental receptors would be **negligible** (positive or negative).
Neutral	Where the positive and negative impacts of the Scheme or the combined effects of the Scheme in association with other existing or more than likely/near certain future major developments would **balance**.

16.4 Mitigation

16.4.1 The environmental mitigation strategy for the Scheme is presented in Chapter 3A and supported by Figures 3A.38 to 3A.44 in Volume 3 of the ES.

16.4.2 Mitigation, where known, for each of the potential future developments is described in the following section. Where mitigation is unclear, an assumption has been made as to the likely adoption of best practice and reasonable mitigation which would be expected to be implemented.

16.5 Description of Developments Assessed

Bexhill to Hastings Link Road (The Scheme)

16.5.1 A description of the Scheme is provided in Chapter 3A of the ES with supporting illustrations provided in Volume 3.

Complementary Traffic Measures for the Scheme

16.5.2 The complementary traffic measures for the Scheme are described in Chapter 3A of the ES and illustrated in Figures 3A.29 to 3A.36 in Volume 3. An assumption has been made that these measures would be implemented at the same time as the Scheme, although in practice there may be a slight delay as funding would need to be secured through the LTP process.

Bexhill High School Redevelopment

16.5.3 The Department for Education & Skills (DfES) announced in February 2003 a new approach to capital investment for all secondary schools across the country over a 15 year period. The *Building Schools for the Future* (BSF) programme is intended not just to replace or refurbish the school buildings, but also transform the delivery of education and educational achievement as part of the overall agenda set out in the *Every Child Matters* Green Paper.

16.5.4 ESCC Cabinet agreed to put forward a bid for Bexhill High School (BHS) for capital investment through the BSF programme, which had long been identified through the authority's Capital and Property Strategy (CAPS) process as being the school with the highest investment needs. The DfES have since given a green light to ESCC's submission.

16.5.5 BHS is a school for pupils aged 11-16 (i.e. no Sixth Form) and currently has 1558 pupils on roll as of January 2007. It is intended that BHS will remain an 11-16 school but a 14-19 Skills Centre will also be provided as part of the project, with a consortium involving (as a minimum) BHS, Bexhill College and Hastings College of Art & Technology (HCAT). The capacity of the replacement school would be likely to remain at 1500 pupils, but with provision for 150 pupils in the Skills Centre.

16.5.6 BHS currently operates on two sites, with the main school at 'The Down' and the lower school (Year 7) at 'Gunters Lane' in a block that was built in 1993. The Down site is approximately 3.8ha and the Gunters Lane site 10.3ha. It is intended to build a new school to accommodate all years on the Gunters Lane site, and re-use the existing Year 7 block for other purposes. The exact size and location of the new school is still being developed, but the indicative figures are that the gross floor area would be around 12000m^2, hard playgrounds and games courts of around 6000m^2, and a substantial amount of car parking.

16.5.7 Part of the Down Site would be used for the Skills Centre, which may re-use some of the existing buildings. The remainder of the site would then become surplus to educational requirements. This site, together with the adjoining TA Centre, and the site of the former East Drill Hall is allocated under Policy BX9 in the recently adopted Rother District Local Plan (RDLP) for "*mixed-use development comprising offices, community buildings, and high density housing, following relocation of the secondary school.*" Discussions are currently underway, but no detailed proposals have yet been agreed as to where the Skills Centre might fit in relation to Rother DC's other aspirations.

16.5.8 DfES initially required the project to be completed by September 2009, but has now agreed a more realistic date of September 2010. To achieve this, the draft programme indicates the need to start construction works in July 2008.

The North East Bexhill Development (Worsham Farm)

16.5.9 The adopted East Sussex and Brighton & Hove Structure Plan (policy S25) sets the strategic objectives for Bexhill. This will entail the development of a new business park and community at north-east Bexhill with the necessary and appropriate transport improvements. The adopted RDLP takes this forward, and adds greater detail to this strategic greenfield allocation. As the Plan explains at Chapter 4, the development strategy, which has recently been tested at Inquiry, rests on the successful completion of the BHLR Scheme. Necessary housing and employment land at North East Bexhill will not be released, and the development strategy of the adopted RDLP will not be realised should BHLR not be implemented.

16.5.10 The RDLP explains that new sites are needed to allow local businesses to expand. The total employment floor space requirement for the district as part of the Structure Plan's 'Eastern Area' requirement is given as being in the region of 73,000 to 103,000 m^2. This is translated into the strategic allocation at North East Bexhill of 48, 000 m^2 of B1/B2 employment floorspace.

16.5.11 The RDLP sets out the summary of housing allocations which identifies 1,110 dwellings at North East Bexhill. This is dependent upon the delivery of the BHLR and will only yield 250 dwellings before the end of the plan period i.e. 2011.

16.5.12 RDLP policies promote a comprehensive master planning approach to development at North East Bexhill. It requires a 40% affordable housing

component, a new neighbourhood centre including a new one form entry primary school, community hall, shops and services and a nursery school. Development contributions are required from development at North East Bexhill towards the proposed Pebsham Countryside Park, library improvement and recreational and transport provision.

16.5.13 The District Council intend to publish a North East Bexhill Master Plan to add greater detail to the allocation and to guide and coordinate development of the sites. The District Council's Local Development Scheme indicates that this will be adopted in June 2007, although this timetable is likely to be extended. An assumption has been made for the benefit of the traffic modelling and the assessment of cumulative effects that the North East Bexhill Development would not be commenced until after the Scheme has been opened in 2010 at the earliest.

West St Leonards

16.5.14 There are two major development opportunities in the West St Leonards area comprising the Former Bathing Pool Site at Seaside Road and adjoining land (known as West Marina) and the former West St Leonards School Site at Bexhill Road. In view of the over-riding necessity to revitalise the whole area, these development opportunities are considered together as part of an overall strategy for the West St Leonards area which forms part of the Millennium Communities project and encompasses a number of sites within the town.

16.5.15 In addition the area will be subject to further development and change as developers identify opportunities for redevelopment and intensification. By their very nature these windfall opportunities are not identified in the local plan, however, windfall estimates are factored into the local plan's housing land supply calculations. Windfall estimates form part of the detailed work feeding into the transport model for this Scheme.

16.5.16 The Hastings Local Plan allocates land at Seaside Road for a high quality comprehensive mixed use development based upon water and beach related commercial tourism and leisure facilities. This is also proposed to include associated services, recreational activities, public slipway and housing. The proposed development site occupies a prominent seafront location bounded by Seaside Road, Cinque Ports Way and Grosvenor Gardens, and covering an area of 2.2 ha in total. The site comprises a former outdoor public bathing pool and holiday camp, a timber storage yard and seaside chalets. The former bathing pool site has been cleared and the majority of the site is available for development.

16.5.17 The Local Plan proposed a minimum of 45 residential properties but there is considered to be scope for more development as part of a mixed use scheme particularly combined with a wider site area to the west including the premises of Stamco, the TA and Sea Cadets.

16.5.18 The Hastings Local Plan allocates the School Site (referred to as land at Bexhill Road) for a minimum of 66 dwellings, a community centre and open

space. This site comprises 3.8 ha of land bounded by Bexhill Road to the south. The part of the site immediately fronting Bexhill Road comprises the former West St Leonards Primary School, which is now largely demolished and temporarily landscaped. The main hall continues to function as a community centre.

16.5.19 The Borough Council has undertaken a masterplan exercise on both areas commencing in 2006 including public consultation. The preferred options, recommended by the external contractors undertaking the work, are for 70 dwellings, community centre, and sports pitches at the Bexhill Road site and a 70 bed landmark hotel and restaurant, up to 175 dwellings, a community arts building and café, sports courts, and 60 beach huts at the West Marina. Any development would be unlikely to commence before the opening of the Scheme in 2010 at the earliest.

Proposed Housing and Commercial Development within Bexhill and Hastings

16.5.20 ESCC have provided estimated housing completions for Hastings and Bexhill based upon April 2004 commitments which formed the basis of the South East Plan (SEP) housing provisions for East Sussex. These figures exclude the estimated completions associated with the North East Bexhill Development and the West St Leonards developments described previously within this section. It is estimated that there would be approximately 2500 new residential properties completed throughout the various wards within Bexhill between 2004 and 2025 (the Design Year for the Scheme). Just over a further 4400 houses are estimated to be completed during this period across the wards within Hastings.

16.5.21 Estimated commercial developments for Bexhill and Hastings were agreed between ESCC and SeaSpace for the benefit of the traffic modelling as reported in the Traffic and Transport Report submitted as part of the planning application for the Scheme. An approximate 40,000m^2 gross floor area of commercial development is estimated to be completed on existing allocated sites up to 2010 (the Opening Year of the Scheme), with over 135,000m^2 estimated to be completed between 2010 and 2025 across a wide range of wards within Hastings. Commercial development within Bexhill would be additional to these estimates and is described within the previous section relating to the North East Bexhill Development.

A21 Baldslow Junction – Queensway Link

16.5.22 The government commissioned the Access to Hastings study following the comprehensive review of previous road proposals and the identification of new road improvements in 1997. This strategy was completed in November 2000 and led to commencement of the A21 South of Pembury to Hastings study in November 2001. The A21 Baldslow – Queensway Link scheme forms part of the proposed improvements to the A21 trunk road between Kippings Cross, south of Pembury and Baldslow. The section from Robertsbridge to Baldslow was programmed as one of the later sections, but, as part of the Secretary of State's decision on SoCoMMS (presented in Appendix 4-A), the Highways Agency (HA) were asked to address the issues

of access between the proposed Bexhill to Hastings Link Road scheme and the A21.The HA is currently working in partnership with East Sussex County Council, Hastings Borough Council and the South East England Regional Assembly towards the provision of the A21 Baldslow – Queensway Link scheme.

16.5.23 The HA has identified two potential route options for the link. Option 1 would be an approximate 700m long link within cutting (maximum 6m depth) connecting the A2100 The Ridge West to the A21 junction with the A28 Westfield Lane. This route alignment would lie to the north of the Ridge and would pass through the High Weald Area of Outstanding Natural Beauty and the SNCI and archaeological site within Beauport Park.

16.5.24 The second route option would involve the construction of a new embankment up to 14m high to connect the B2092 Queensway to Whitworth Road and the A21 Sedlescomb Road North. The link would then travel northwards partially off-line adjacent to the A21 and within a widened cutting under the A2100 The Ridge West. The existing bridge would be retained to span the A21 maintaining the link between The Ridge West and the B2093 The Ridge to the east. Both the embankment section and the northern section of the widened A21 would encroach upon an SNCI and the AONB.

16.5.25 The Highways Agency has commissioned a Stage 2 DMRB Assessment of both route options in an effort to identify the Preferred Route and it is understood that both these route options are currently under review. The first route option would be likely to have the greatest potential environmental effect due to direct impacts upon the High Weald Area of Outstanding Natural Beauty, and the SNCI and archaeological site within Beauport Park. As such this route option has been assessed in the context of the cumulative effects assessment for the Scheme to represent the worst case scenario.

16.5.26 The HA have indicated that the implementation of the A21 Baldslow – Queensway Link scheme would be conditional upon the construction of the Scheme, and traffic modelling to date has assumed an Opening Year of 2012 i.e. two years after the opening of the Scheme.

Pebsham Countryside Park

16.5.27 The RDLP (policy BX4) proposes a new ‘Countryside Park’ at Pebsham between the built-up areas of Bexhill and St Leonards and extending into the Combe Haven Valley. Paragraph 10.28 of the RDLP states that the Countryside Park will be developed for recreational activities and nature conservation.

16.5.28 The Pebsham Countryside Park project is part of a series of proposals in East Sussex and northern France which have benefited from European funding and close partnership with French organisations. East Sussex County Council working in partnership with Hastings Borough Council, Rother District Council and INTERREG seek to create a sustainable, multi-functional park approximately 600 hectares (1480 acres) in size to enhance the green space between Bexhill and Hastings. The BHLR would form the

northern boundary of the park, with the exception of an area within the Powdermill Stream Valley to the north of the road and an area of the Combe Haven Valley to the west of the road.

16.5.29 The policy refers to a management plan which will develop a detailed framework for the layout of the Countryside Park, and will in due course provide a supplementary planning document. The Development Strategy has assumed that role and both that and a Business Plan has now been approved by the Park Steering Group and is currently before the three Councils for adoption.

16.5.30 The current masterplan for the park proposes a series of zones for leisure, relaxation, sport, wildlife and education. The southern part of the park between Pebsham and West St Leonards would incorporate the Pebsham Landfill site providing opportunities for formal sports and activities centred around a Park Centre. The landfill site is due to be closed in 2008 and restored to enable its inclusion within the park. Adjacent land is identified in the East Sussex Brighton and Hove Waste Local Plan for a range of waste related facilities, including the existing Reprotech waste derived fuel plant, a materials recovery facility and waste transfer station. That land is therefore excluded from the Policy BX4 allocation, as is the existing nearby wastewater treatment plant.

16.5.31 The central and northern part of the park would incorporate the Combe Haven SSSI and Filsham Reedbeds as a wildlife area which would be extended to include areas of wildlife mitigation and compensation proposed as part of the Scheme.

16.5.32 The park would provide the opportunity for improved environmental management of farmland through the Higher Level Stewardship (HLS) Scheme administered by Natural England. Existing Entry Level Stewardship Schemes within the park area would potentially convert to HLS when due for renewal. Improved management of public and private land within the park, including the potential for reintroducing water level controls within the Combe Haven Valley and its tributaries, would benefit local habitats and the ecological status of the Combe Haven SSSI and Filsham Reedbeds.

16.5.33 Improved recreational access is a fundamental objective of the park proposals. A series of high quality circuits utilising existing Public Rights of Way and creating new routes, would be waymarked, with surfaces improved to accommodate increased usage. The Greenway proposed as part of the Scheme, would provide pedestrian and equestrian access to the park and the wider footpath network to the north and a significant section of the main Combe Haven circuit planned for the Park. A cycleway along the Greenway would also improve utility cycle access between Sidley and the western edge of Hastings.

16.6 Combined Effects

Construction Effects

16.6.1 Table 16.3 summarises the significance of construction phase impacts as assessed in the relevant preceding chapters of the ES and sets the impacts in the context of the range of environmental resources or receptors likely to be affected by the Scheme. The final column in the table provides an assessment of the likely combined effects of the Scheme after mitigation upon each environmental resource as defined in Table 16.2.

16.6.2 The Scheme would have a negligible combined effect upon climate change and a minor adverse combined effect upon vehicle travellers, the water environment and the local ecological resource within the study area during the construction phase. These impacts would therefore be unlikely to be significant.

16.6.3 Local communities would be likely to experience a combination of slight adverse impacts associated with construction traffic, increased air pollution and increased noise and more significant visual impacts and a reduction in accessibility to facilities, services, amenities and employment during the construction phase. These impacts would combine to create a minor/moderate adverse effect upon local communities, although potentially significant effects would be largely confined to those communities closest to the Scheme.

16.6.4 The land take requirements for the Scheme and associated mitigation and compensation measures would result in a moderate adverse impact upon both agricultural land quality and the management and viability of certain farm holdings within the Combe Haven Valley, leading to a moderate adverse and significant combined effect upon land use.

16.6.5 Townscape, visual impact and direct and indirect impacts upon the historic environment would have a moderate adverse impact upon the built environment. These impacts, combined with slight adverse impacts in relation to reduced air quality, increased noise and loss of habitats within the Bexhill Connection, would lead to an overall moderate adverse and significant combined effect upon the built environment during the construction phase.

16.6.6 The construction of the Scheme would have a potentially significant direct impact upon the buried archaeological resource. This assessment has been based upon available information in the absence of detailed site investigation and evaluation representing the potential worst case scenario. The Scheme would also have a moderate adverse impact upon the historic environment, including historic landscape character and impacts upon the setting of historic buildings. These impacts would be likely to combine to create a moderate adverse effect upon the cultural heritage resource within the study area during the construction period.

16.6.7 The Scheme would have a minimal impact upon pedestrians and cyclists in terms of construction traffic and changes in local air quality and ambient noise conditions. However, construction activity would have a

potentially large adverse visual impact upon users of Public Rights of Way within the Combe Haven Valley and those paths towards the southern end of the Scheme. The combined effect of the Scheme during the construction phase upon non-motorised users would therefore be likely to moderate adverse and significant.

16.6.8 Construction activity within the rural section of the Scheme would have a highly significant, albeit predominantly short-term, combined landscape effect. Moderate adverse visual and historic landscape impacts would combine with the large adverse impacts upon landscape character within the Combe Haven Valley to create a major adverse combined effect upon the landscape resource within the study area.

Operational Effects

16.6.9 Table 16.4 summarises the significance of operational phase impacts set in the context of the environmental resources likely to be affected by the Scheme. The final column in the table provides an assessment of the likely combined effects of the Scheme after mitigation upon each environmental resource.

Opening Year (Year 1)

16.6.10 The Scheme would have a negligible combined effect upon climate change and the water environment during the Opening Year. However, the Scheme would have a combined minor adverse effect upon the ecological resource of the study area. This effect would be largely due to the indirect impacts of noise and visual disturbance from road traffic and users of the Greenway upon the Combe Haven and Marline Valley Woods Sites of Scientific Interest (SSSI) and direct impacts upon protected species such as bats, badgers and breeding birds. Nevertheless, these impacts would be relatively minor and can be considered as not significant.

16.6.11 The Scheme would result in the loss of 38.6 ha of 'best and most versatile' agricultural land and associated direct impacts upon the management and viability of certain farm holdings within the Combe Haven valley after mitigation, causing a combined moderate adverse and therefore significant effect upon land use during the Opening Year. The significant impacts of increased noise and visual intrusion, coupled with the significant impacts upon landscape character and the historic landscape, would also result in a moderate adverse combined effect upon the landscape resource within the rural section of the Scheme prior to the establishment of mitigation planting.

16.6.12 The built environment would also experience a combined moderate adverse and significant effect in the Opening Year. The Scheme would cause moderate adverse noise and visual impacts and the loss of private land associated with landtake requirements within the urban area and an overall slight adverse impact upon the historic built environment. These impacts would outweigh the moderate beneficial impacts of improved air quality as a result of changes in traffic flows, principally along the urban A259 road corridor and associated Air Quality Management Area (AQMA).

16.6.13 The Scheme would result in a moderate adverse combined effect upon the cultural heritage resource within the study area due to the significant impacts upon buried archaeology and the historic landscape within the Combe Haven valley and the significant adverse impacts of increased noise and visual intrusion upon designated and non-designated historic receptors. These impacts would outweigh the benefits of reductions in traffic upon the settings of other designated historic receptors such as Conservation Areas and Listed Buildings.

16.6.14 In contrast to these adverse effects, the Scheme would have a moderate beneficial combined effect upon local communities, non-motorised users and vehicle travellers. Communities would experience significant benefits associated with reduction in traffic flows, improved air quality, reduced

severance and improved accessibility to facilities, services and employment. These impacts would collectively outweigh the moderate adverse noise and visual impacts of the Scheme upon communities within the Opening Year. Similarly the reduction of traffic on the surrounding road network would result in a significant safety, air quality and severance improvement for non-motorised travellers, whilst the Greenway would provide a benefit for pedestrians, cyclists and recreational users marginally offset by the visual and noise impacts of the adjacent Scheme. These benefits would outweigh the adverse noise and visual impacts of the Scheme resulting in a significant beneficial effect upon non-motorised users. Improved road safety and availability of better views from the road would also result in a significant beneficial combined effect upon vehicle travellers.

Design Year (Year 15)

16.6.15 The Scheme would have a negligible combined effect upon climate change and the water environment and a minor adverse combined effect upon the ecological resource within the study area by the Design Year. These impacts would be similar to those during the Opening Year, although compensatory ecological habitats would have become better established during the intervening period.

16.6.16 The moderate adverse combined effects of the Scheme upon land use as a result of the significant impacts upon agricultural land quality and the management of farm holdings within the Combe Haven valley would remain by the Design Year.

16.6.17 The establishment of mitigation planting to help screen and integrate the new road corridor within the Combe Haven valley would reduce the combined effects of the Scheme upon the landscape resource from moderate adverse in the Opening Year to minor adverse in the Design Year. However, whilst these combined effects would reduce in the medium to longer-term, the adverse impacts of traffic noise upon tranquillity within the valley would remain significant in the longer term.

16.6.18 The reduction in the visual impact of the Scheme as a result of the establishment of mitigation planting would reduce the combined effects upon the built environment from moderate adverse in the Opening Year to minor adverse in the Design Year. The significant adverse noise and land take impacts would remain, although these impacts would be largely offset by the significant beneficial impact in terms of improved air quality within the urban area, along the A259 road corridor and within AQMA.

16.6.19 Mitigation planting would also help to reduce impacts upon the historic landscape within the Combe Haven valley and the adverse visual impacts of the Scheme and associated traffic upon the setting of designated and non-designated historic receptors. Nevertheless, the continued noise impacts and potentially significant adverse impacts upon buried archaeology would offset these improvements to some degree, with the Scheme likely to result in a combined minor to moderate adverse and therefore significant effect upon the cultural heritage resource in the Design Year.

16.6.20 The significant moderate beneficial combined effects of the Scheme upon communities, non-motorised users and vehicle travellers would remain by the Design Year as a result of the implementation of complementary traffic measures to lock in the traffic benefits of the Scheme in the longer term.

16.7 Cumulative Effects

Construction Effects

16.7.1 Table 16.5 summarises the significance of the combined construction effects of the Scheme together with those associated with other potential major projects likely to be constructed at the same time. The final column in the table provides an assessment of the likely cumulative construction effects of the various schemes upon each environmental resource after mitigation.

16.7.2 The complementary traffic measures for the Scheme, the Bexhill High School redevelopment and a limited proportion of the proposed housing and commercial development within Bexhill and Hastings would be the only major projects likely to be constructed at the same time as the Scheme. The larger scale projects including the North East Bexhill Development, the two development opportunities in West St Leonards, the bulk of the residential and commercial developments throughout Bexhill and Hastings and the A21 Baldslow Junction – Queensway Link would be constructed sometime after the opening of the Scheme between 2010 and 2025.

16.7.3 The cumulative effects of the four relevant schemes in relation to contributions to greenhouse gas emissions and effects upon the water environment during the construction phase would be negligible. Cumulative effects upon the local ecological resource would be minor adverse and therefore also not significant.

16.7.4 Whilst all schemes would be likely to have a minor adverse combined effect upon vehicle travellers, the cumulative effects of the schemes would rise to moderate adverse and therefore potentially significant due to a general increase in construction traffic and delays caused by traffic management and works on the on the local highway network.

16.7.5 The Scheme would have a combined moderate adverse effect upon land use, the built environment, the cultural heritage resource and non-motorised users during the construction phase. The effects of the complementary traffic measures, the Bexhill High School redevelopment and the residential and commercial developments across Bexhill and Hastings upon these environmental resources would be minor adverse at worst. As such, the cumulative effects during the construction phase would be largely attributed to the Scheme and would therefore be likely to be moderately adverse and significant.

16.7.6 The Scheme and the Bexhill High School redevelopment would have a minor / moderate adverse and moderate adverse combined effect upon local communities respectively associated with dust and noise nuisance, visual impacts and potential increase in severance and reduction in accessibility associated with construction activity and associated traffic. As such, the cumulative effects upon communities during the construction phase would be likely to be moderate adverse and therefore significant.

16.7.7 The Scheme would be likely to result in a major adverse and therefore potentially highly significant adverse effect upon the landscape resource during the construction period. None of the other projects would have a significant effect upon the landscape resource as all projects would be located within the urban environment. As such, cumulative landscape effects would be heavily influenced by the Scheme and would be likely to be highly significant.

Operational Effects

16.7.8 Table 16.6 summarises the significance of the operational phase combined effects of the Scheme in the Design Year (2025) together with those associated with the other potential major schemes proposed within the study area. The final column in the table provides an assessment of the likely cumulative effects of the various schemes upon each environmental resource after mitigation.

16.7.9 Each scheme would have a negligible contribution to greenhouse gas emissions. However, the cumulative effects of the various schemes upon climate change would be negligible to minor adverse in view of the scale of development proposed and the collective associated increase in traffic generated by those developments.

16.7.10 The residual combined effects of each of the Scheme, the North East Bexhill Development and the A21 Baldslow Junction – Queensway Link Road would be minor adverse in the longer-term once mitigation planting matures to better integrate and screen the developments. Landscape mitigation schemes would be developed in conjunction with and approved by the local planning authorities and Natural England, particularly for those schemes with direct or indirect impacts upon the High Weald Area of Outstanding Natural Beauty (AONB). The adverse landscape effects would be largely offset by the significant landscape benefits associated with the proposed Pebsham Countryside Park, including improved land management for ecological, landscape and recreational purposes. On balance, the cumulative effect upon the landscape resource would therefore be likely to be negligible.

16.7.11 All schemes with exception of the proposed Pebsham Countryside Park would have a negligible effect upon the water environment assuming the implementation of standard mitigation measures to maintain or improve surface and groundwater quality and compensation measures to mitigate against flooding where relevant. Relevant mitigation would be a pre-requisite for all planning applications and would be developed with and approved by the Environment Agency in close co-operation with local planning authorities. The proposed Pebsham Countryside Park would provide the opportunity to raise water levels within the Combe Haven valley for ecological benefits and could therefore have a subsequent potential beneficial effect in terms of reducing current flood risk downstream. These benefits would counterbalance any negligible adverse effects upon the water environment caused by the other potential developments leading to a neutral cumulative effect.

16.7.12 The implementation of standard mitigation in agreement with Natural England to reduce potential impacts upon protected species and the provision of compensatory ecological habitats would help to reduce the effects of the various potential schemes upon the ecological resource within the study area. All developments, with the exception of the proposed Pebsham Countryside Park, would be likely to have a residual minor adverse ecological effect and a potentially significant cumulative effect. However, the implementation of improved environmental management of farmland within the Combe Haven valley and enhancement of the Combe Haven SSSI as part of the Pebsham Countryside Park proposals, potentially through the Higher Level Stewardship (HLS) scheme and the raising of water levels within the valley, would help to offset the adverse ecological effects of the remaining major schemes leading to a minor adverse cumulative effect upon the ecological resource at worst.

16.7.13 Both the Scheme and the North East Bexhill Development would be likely to have significant combined effects upon agricultural land quality and the future management of farm holdings. The A21 Baldslow Junction – Queensway Link Road would also result in a significant effect upon land use due to the loss of parkland and part of the caravan park within Beauport Park. However, these effects would be partially offset by the minor beneficial effects of the West St Leonards development and the various residential and commercial developments throughout Bexhill and Hastings which would see considerable investment on brownfield and urban fringe sites. The improved management of farmland within the Combe Haven valley as part of the proposed Pebsham Countryside Park would also help to offset the adverse effects of the Scheme and the North East Bexhill Development upon agricultural land use. On balance, the cumulative effects upon land use would be minor adverse and therefore not significant.

16.7.14 The cumulative effects upon the built environment would be minor beneficial. Whilst the Scheme would have a minor adverse combined effect upon the built environment largely due to residual noise and land take impacts, the Bexhill High School redevelopment and the various commercial and residential development throughout Bexhill and Hastings would represent an improvement in townscape terms. The West St Leonards developments on the former Bathing Pool Site at Seaside Road and adjoining land (known as West Marina) and the former West St Leonards School Site at Bexhill Road would have a significant beneficial impact in terms of revitalising these areas. Good design for these various developments would be underpinned by planning policy and would be regulated through the planning process.

16.7.15 The only significant adverse cumulative effect of the various major schemes within the study area would be upon the cultural heritage resource. Both the Scheme and the North East Bexhill Development would have a residual minor to moderate adverse combined effect upon buried archaeology, historic landscape character and the setting of designated and non-designated historic buildings and sites. The A21 Baldslow Junction – Queensway Link Road would have the greatest combined effect as a result of the new road passing through an archaeological site and adversely affecting the settings of the Listed Buildings at East Lodge within Beauport Park.

16.7.16 The remaining schemes would have only a negligible effect upon the cultural heritage resource largely due to the developments occurring on existing urban or brownfield sites and the lack of intrusive works associated with the proposed Pebsham Countryside Park. On balance, the cumulative effect after mitigation would be moderate adverse and therefore significant.

16.7.17 All schemes would result in a beneficial effect upon communities in terms of helping to regenerate both Bexhill and Hastings. The Scheme would facilitate the commercial and residential development at North East Bexhill, whilst also reducing severance and improving accessibility and air quality within the urban area. The redevelopment of the Bexhill High School and provision of a Skills Centre and the various commercial and residential developments across Bexhill and Hastings would provide access to new and improved facilities, services, employment and the provision of new housing to meet recognised shortages within the area.

16.7.18 The A21 Baldslow Junction – Queensway Link Road would relieve congestion and improve journey times on the local road network. The proposed Pebsham Countryside Park would have a highly significant beneficial effect in terms of providing a series of zones for leisure, relaxation, sport and education for the local community. On balance, the cumulative effect upon local communities would be likely to be moderate beneficial and therefore significant.

16.7.19 The cumulative effect upon non-motorised users such as pedestrians, cyclists and recreation users would also be moderate beneficial. The improvement in road safety and local air quality within the urban area and the provision of the Greenway would be significant benefits of the Scheme. These benefits would be enhanced by the proposed Pebsham Countryside Park which would provide improved recreational access within the Combe Haven valley and to the wider countryside to the north.

16.7.20 Whilst the various commercial and residential developments would increase traffic within the area, the Scheme and the A21 Baldslow Junction – Queensway Link Road would help to alleviate current and future congestion and reduce journey times on the local road network. These benefits would be secured through the implementation of complementary traffic measures, resulting in a minor beneficial cumulative effect upon vehicle travellers.

Table 16.5 Construction Phase Cumulative Effects after Mitigation

Scheme or Development[1]	The Scheme (BHLR)	Complementary traffic measures for the Scheme	Bexhill High School Redevelopment	North East Bexhill (Worsham Farm)[2]	West St Leonards[2]	Proposed development within Bexhill and Hastings[3]	A21 Baldslow Junction – Queensway Link Road[2]	Pebsham Countryside Park[2]	Cumulative Effects
Resource									
Climate	□	□	□	n/a	n/a	□	n/a	n/a	□
Land Use	- -	□	□	n/a	n/a	□	n/a	n/a	- -
Landscape	- - -	□	□	n/a	n/a	-	n/a	n/a	- - -
Built Environment	- -	-	-	n/a	n/a	-	n/a	n/a	- -
Cultural Features	- -	□	□	n/a	n/a	□	n/a	n/a	- -
Communities	- / - -	-	- -	n/a	n/a	-	n/a	n/a	- -
Non-Motorised Users	- -	-	-	n/a	n/a	-	n/a	n/a	- -
Vehicle Travellers	-	-	-	n/a	n/a	-	n/a	n/a	- -
Water Environment	-	□	□	n/a	n/a	□	n/a	n/a	□
Ecology	-	□	□	n/a	n/a	-	n/a	n/a	-
Overall Construction Phase Cumulative Effect of the Scheme and Other Major Developments/Projects within the Study Area									- -

Notes:

Key: Blank = No Impact □ = Negligible/ Neutral - /- - /- - - = minor, moderate, major adverse effect + / ++ / +++ = minor, moderate, major beneficial effect

[1] includes those major developments within the study area that have or are likely to have a significant environmental effect
[2] Those developments that are unlikely to be constructed at the same time as the Scheme and therefore do not form part of the construction phase cumulative effects assessment
[3] Only a limited proportion of the proposed residential and commercial development would be constructed at the same time as the Scheme

Table 16.6: Operational Phase Cumulative Effects after Mitigation

Scheme or Development[1]	The Scheme (BHLR)	Complementary traffic measures for the Scheme	Bexhill High School Redevelopment	North East Bexhill (Worsham Farm)[2]	West St Leonards	Proposed development within Bexhill and Hastings	A21 Baldslow Junction – Queensway Link Road[3]	Pebsham Countryside Park	Cumulative Effects
Resource									
Climate	□	□	□	□	□	□	□	□	**□ / -**
Land Use	**- -**	□	□	**- -**	**+**	**+**	**- -**	**+**	**-**
Landscape	**-**	□	□	**-**	□	□	**-**	**++**	□
Built Environment	**-**	□	**+**		**++**	**+**	□		**+**
Cultural Features	**- / - -**	□	□	**- / - -**	□	□	**- -**	□	**- -**
Communities	**++**	**+**	**++**	**++**	**++**	**++**	**+**	**+++**	**++**
Non-Motorised Users	**++**	**+**	□	**+**	□	□	**+**	**+++**	**++**
Vehicle Travellers	**++**	**+**	□	**-**	**-**	**-**	**++**		**+**
Water Environment	□	□	□	□	□	□	□	**+**	□
Ecology	**-**		**-**	**-**	**-**	**-**	**-**	**++**	**-**
Overall Operational Phase Cumulative Effect of the Scheme and Other Major Developments/Projects within the Study Area									□

Notes:

Key: Blank = No Impact □ = Negligible/ Neutral - /- - /- - - = minor, moderate, major adverse effect + / ++ / +++ = minor, moderate, major beneficial effect

[1] includes those major developments within the study area that have or are likely to have a significant environmental effect.
[2] Includes proposed mixed use developments at Worsham Farm either side of the proposed BHLR.
[3] Option 1 A21 Baldslow Junction – Queensway Link.

16.8 Conclusions

Combined Effects of the Scheme – Construction Phase

16.8.1 The Scheme would have an overall moderate adverse and significant environmental effect during the construction phase. The greatest effect would be upon the landscape resource within the Combe Haven valley, which would be highly significant due to a combination of impacts upon landscape character, the historic landscape and views from Public Rights of Way. Other environmental resources likely to be significantly affected during the construction phase would include land use, the built environment, the cultural heritage resource and non-motorised users including pedestrians and cyclists. Effects upon climate change, vehicle travellers, the water environment and the ecological resource of the study area would not be significantly affected by the Scheme during this phase.

Combined Effects of the Scheme – Operational Phase

16.8.2 The Scheme would result in an overall minor to moderate adverse environmental effect in the Opening Year, reducing to negligible and therefore not significant in the Design Year when mitigation planting matures to better enclose the Scheme and new ecological habitats become established.

16.8.3 The most significant effects during the Opening Year would be the adverse effects upon land use, the landscape resource, the built environment and the cultural heritage resource. These effects would be offset to some degree by the significant beneficial effects of the Scheme upon local communities, non-motorised users and vehicle travellers. The significance of the combined effects upon the landscape resource, the built environment and the cultural heritage resource would all reduce in the longer term as screening planting starts to mature. Those significant benefits upon local communities, non-motorised users and vehicle travellers would remain in the longer term, assisted by the commitment to the implementation of complementary traffic measures as part of the Scheme.

Construction Cumulative Effects

16.8.4 The overall construction phase cumulative effects of the Scheme and the three other major schemes likely to be constructed at the same time would be moderate adverse and therefore significant. However, the majority of these effects would be temporary and would only occur over a limited two year period.

Operational Cumulative Effects

16.8.5 Once complete, the cumulative effects of the Scheme in conjunction with those of other ‘more than likely’ or ‘near certain’ major schemes within Bexhill and Hastings up to 2025 would be neutral where adverse and beneficial effects would balance. The only significant adverse cumulative effect would be upon the cultural heritage resource, principally as a result of

the combined effects of the Scheme and those of the A21 Baldslow Junction – Queensway Link Road upon buried archaeology, historic landscape character and the setting of designated and non-designated historic buildings and sites.

16.8.6 These effects would be offset by the significant benefits of the various schemes upon local communities and non-motorised users as a result of improved accessibility to facilities, housing and employment, reduced severance, improved road safety and enhanced recreational access to the Combe Haven valley and the countryside to the north. These benefits form part of an established development strategy for the Bexhill Hastings area and the revitalisation of deprived neighbourhoods. In the absence of this strategy, ,a less sustainable and ad hoc approach would evolve, which could result in increased environmental damage without delivering a co-ordinated approach to addressing the need to improve job opportunities, increase affordable housing provision and enhance accessibility within areas of concentrated need.