A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010041

6.9 Environmental Statement – Non-Technical Summary

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

June 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

The A1 in Northumberland: Morpeth to Ellingham Development Consent Order 20[xx]

Environmental Statement – Non-Technical Summary

Regulation Reference:	APFP Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010041
Application Document Reference	TR010041/APP/6.9
Author:	A1 in Northumberland: Morpeth to Ellingham Project Team, Highways England

Version	Date	Status of Version
Rev 0	June 2020	Application Issue

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INTRODUCTION

Highways England (the Applicant) is the government owned company which is responsible for the operation, maintenance and improvement of the strategic road network in England on behalf of the Secretary of State for Transport. The road network totals around 4,300 miles of motorways and major A roads and carries a third of all traffic and two thirds of all heavy good vehicles.

As set out in the government's Road Investment Strategy, the Applicant is expected to deliver £15 billion of investment on the road network, £11 billion of which is committed between 2015 and 2020. Improvements to the A1 between Morpeth and Ellingham is also included as a committed scheme in the Road Investment Strategy for the period 2020 – 2025.

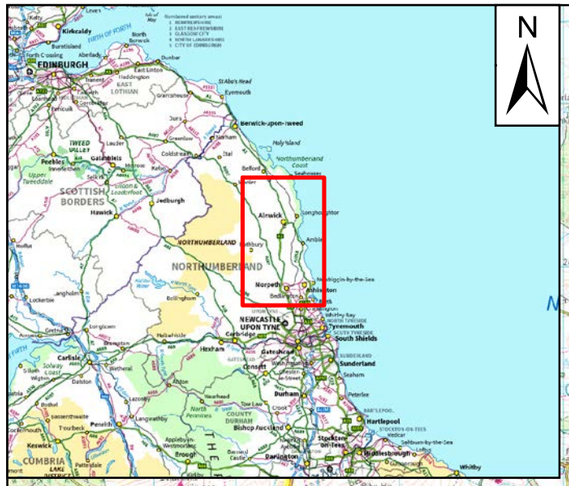
As part of the Road Investment Strategy, the Department for Transport committed to improving the A1 between Morpeth and Ellingham in the county of Northumberland.

This document is a Non-Technical Summary (NTS) of the Environmental Statement (ES) which forms part of the application for the Development Consent Order (DCO) for the A1 in Northumberland: Morpeth to Ellingham (the Scheme). The Scheme is formed of two parts; Part A: Morpeth to Felton (Part A) and Part B: Alnwick to Ellingham (Part B). Refer to **Figure 1** and **Figure 2** below.

The application has been submitted to the Planning Inspectorate (the Inspectorate) by the Applicant and will be determined by the Secretary of State for Transport.

The ES reports the findings of the Environmental Impact Assessment (EIA) for the Scheme, which has been carried out in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The purpose of the EIA is to identify and assess the likely significant effects on the environment as a result of the construction and operation of the Scheme and to recommend appropriate mitigation to reduce the impact of identified effects. The results of the EIA are presented in the ES.

This NTS provides a summary description of the Scheme and the ES in non-technical language to ensure that the outcomes of the EIA are readily communicated and understood by the general public, consultees and decision makers. The NTS is structured to provide a summary of Part A of the Scheme and Part B separately, and then the Scheme as whole in the Cumulative Effects of the Scheme section.



Key

- DCO Application - Part A: Morpeth to Felton
- Areas Which Are Not Included in the DCO Application

River Coquet Bridge

River Coquet

River Coquet Bridge Construction Area

Ancient Woodland Creation Area

Main Compound

West Moor Junction

Start/Finish of A1 to be De-trunked

Burgham Park Underbridge

Included for Easement Rights

Proposed Alignment of A1

National Grid Diversion and Associated NPG and NGN Diversions

Causey Park Overbridge

Existing A1 to be De-trunked

Temporary Construction Compound

Fenrother Junction

Start/Finish of A1 to be De-trunked

Included for Easement Rights

Highlaws Junction

Warreners House

0 0.5 1 1.5 2 2.5 km

Figure 1 - Scheme Location Plan: Part A

Key

- DCO Application - Part B: Alnwick to Ellingham
- Areas Wich Are Not Included in the DCO Application
- Main Compound

N

Charlton Mires Junction

Charlton Mires Site Compound

Main Scheme Area

Heckley Fence Accommodation Overbridge

Lionheart Enterprise Park Compound

Main Compound

0 0.5 1 1.5 2 2.5 km

Figure 2 - Scheme Location Plan: Part B

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Document Path: \\uk.wspgroup.com\central data\Projects\70036oxx\70036004 - A1 Northumberland\03 Environment\GIS\M2E ESINTS Figure 1.2 - Scheme Location Plan Part B.mxd

Image 1 – The Existing A1 in Northumberland

THE SCHEME

What is the Case for the Scheme?

The A1 north of Newcastle provides a nationally important connection between London and Edinburgh and is an essential link for the North East and Northumberland.

This Scheme is made up of two geographically separate sections of the existing A1 between Morpeth and Ellingham (Part A and Part B). These sections of the A1 are used by a variety of road users for different reasons, including business users travelling long distance between London and Edinburgh, local traffic accessing rural areas where there is limited public transport, and tourists who come to visit the many historic attractions and coastline.

The sections of the existing A1 from Morpeth to Felton (Part A) and from Alnwick to Ellingham (Part B) is currently single carriageway (one lane each way). Studies undertaken on behalf of the Applicant to assess these stretches of road have found that there are many issues, including:

- Lack of alternative routes.
- Inconsistent carriageway standards on the route.
- Poor junction standards and layout.

- Large number of junctions at the same level as the road (i.e. traffic is not separated by a bridge).
- Average speeds on the single carriageway sections (one way each way) of the route are much lower than sections that have been upgraded to dual carriageway (two lanes each way).
- Relatively high proportion of Heavy Goods Vehicles (HGVs) (and agricultural vehicles) leading to reduced speeds for following vehicles and potential for driver frustration.
- Lack of overtaking opportunities.
- Traffic speeds during peak hour is much lower than traffic speeds for free flowing traffic.

Image 2 – A1 in Northumberland at Hebron Junction

Scheme Objectives

The key objectives of the Scheme are:

- Improve journey times on the route of strategic national importance
- Improve network resilience and journey time reliability
- Improve safety
- Maintain access for local traffic whilst improving conditions for strategic traffic
- Facilitate future economic growth

Scheme History and Development

In December 2002, the A1 Multi-Modal Study was published by the Secretary of State, containing a review of four options to improve the A1 between Newcastle and the Scottish border. These options included:

- Scenario 1 - Making the best use of existing transport system
- Scenario 2 - Development of public transport system
- Scenario 3 - Selective improvements to highway Infrastructure
- Scenario 4 - Major Improvements to highway infrastructure
- Scenario 3 of the Multi-Modal Study included:
  - A recommendation to dual 13 km of existing single carriageway between Morpeth and Felton (the stretch of the A1 covered by Part A). Following this, studies, route assessments and a public consultation were undertaken which resulted in a preferred route announced in March 2005. However, the preferred route was not progressed further at that point as funding could not be secured.
  - A recommendation that dualling the carriageway north of Alnwick (including part of the stretch of the A1 covered by Part B) would improve operations on the road and lead to a reduction in accidents. The improvements identified in the A1MMS were not taken forward at the time because the Applicant prioritised delivery of improvements for Part A.

The main development of the Scheme came as part of the Department for Transport's Road Investment Strategy: 2015 to 2020 published in December 2014, whereby a feasibility study was undertaken for the A1. The feasibility study recommended widening the A1 for Part A and for Part B from a single lane to two lanes, as this would help address current congestion (by increasing capacity), improve resilience and improve safety along this stretch of the A1.

The history of the Scheme's development, from the 2013 Spending Review is summarised in **Table 1** below.

Table 1 - Scheme History

Year	Route Development
2013	Following the 2013 Spending Review, the Government announced its plans to invest in the Strategic Road Network (SRN). Investing in Britain's Future was published in July 2013 and sets out details of the programme of infrastructure investment. As part of that investment programme, the Government announced a number of feasibility studies to examine problems on the SRN and to identify potential solutions. This included a study of the A1 north of Newcastle.
2015	The Feasibility Study commenced in 2013 and was published in February 2015. The Study was commissioned to determine the viability of potential

Year	Route Development
	improvements. It led to the definition of the work required to improve the A1 in Northumberland, including Part A and Part B. This was announced in the Road Investment Strategy in December 2014, which progressed the Scheme to the Options Identification stage. At the Option Identification stage, three separate route options (known as the Blue Option, Orange Option and Green Option) were identified for each part of the Scheme. It should be noted that no option combining Part A and Part B were identified for the Scheme. This is because dual carriageway is already in place between Part A and Part B. Therefore, it would be disproportionate to have proposed an entirely new alignment between Morpeth and Ellingham. For Part A, the three options broadly had the same alignment at the southern and northern extent. For Part B, the three options broadly had the same alignment at the southern extent. The main difference for both Part A and Part B between the options was the movement away from the current route, as the options considered solely online widening, or online and offline widening, as well as different approaches to the location and number of junctions. An early public engagement exercise was undertaken in May 2016 to obtain feedback, which helped the development and consideration of the route options.
2016 - 2017	Part A At the Option Selection stage, the three options (known as Blue Option, Orange Option and Green Option) were further considered for Part A. An environmental assessment report was undertaken, and non-statutory public consultation was held on the three options in November and December 2016. In September 2017, a preferred route was announced for Part A. The Green Option was selected as the preferred route. This option included online widening at the southern and northern extent and offline widening at the central section, with three new junctions and a new bridge over the River Coquet. Part B In September 2016, the Orange Option was identified as the sole viable option for Part B to take through to the Option Selection Stage because the two other options (Green Option and Blue Option) were materially more expensive and offered much lower value for money. The Orange Option would also have the least adverse impact on the environment when compared to the Green Option and Blue Option. The Orange Option included widening the existing A1 to the east, a new junction at Charlton

Year	Route Development
	Mires, a bridge for agricultural vehicles and diverting existing direct accesses onto the A1 to safer side roads. An environmental assessment report was undertaken, and non-statutory public consultation was held on the Orange Option in November and December 2016. In September 2017, the preferred route (Orange Option) was announced for Part B.
2018 - 2019	Following the preferred route announcement, the Green Option was taken forward into the Preliminary Design stage (the current stage) for Part A and the Orange Option was taken forward for Part B. Consultation on the proposed design and initial findings and progress of the EIA was carried out in June and July 2018 for Part A and between February and April 2019 for Part B. Here, the local communities, local authority, landowners and other parties such as the Environment Agency were invited to participate and respond to the proposals.
2020	Part A and Part B were originally proposed to be the subject of separate applications for DCOs but have now been combined into a single application for a DCO in respect of the Scheme as a whole. This did not alter the route selection for each part, and additional consultation was undertaken in April and May 2020 in respect of the combined application for the whole of the Scheme.

ALTERNATIVES CONSIDERED

Part A

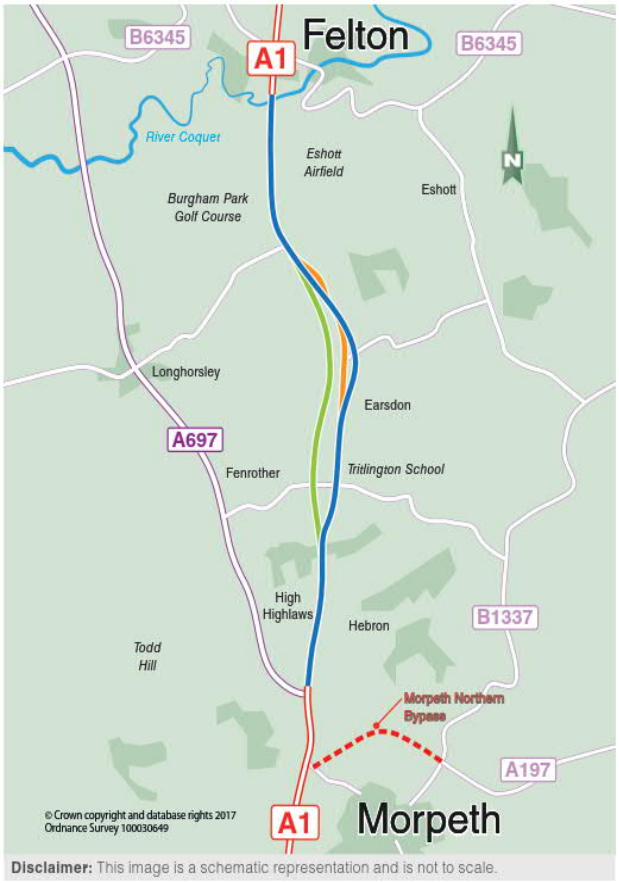
Since 2014, work has been undertaken to identify solutions to the issues on the A1. Three options were identified for Part A with each option having broadly the same design at the southern and northern sections but differing at the central section, as two options included bypassing sections of the existing A1, and the number of junctions proposed.

The three options summarised below and shown in **Figure 3** were shortlisted at the Option Selection stage of the design process and were presented at a public consultation on the options during November and December 2016:

- **Orange option** – Widening the A1 parallel to the existing carriageways, four new junctions and a new bridge over the River Coquet.
- **Blue option** – Widening the A1 parallel to the existing carriageways but constructing two new sections of dual carriageway which would bypass the existing A1 as well as four new junctions and a bridge over the River Coquet.
- **Green option** – Widening the A1 parallel to the existing carriageways from the southern point of the Scheme to Priest's Bridge. From here, construct new dual carriageway west

of the existing A1. Just north of Burgham Park it would re-join the existing A1 and widening would continue parallel until it meets the existing dual carriageway north of Felton. In addition, three new junctions and a new bridge over the River Coquet were proposed.

Figure 3 - The Three Design Options Considered for Part A



The Green Option was announced as the preferred option in the September 2017 Preferred Route Announcement. It was selected because it was the most popular option with the public, affecting fewer landowners and would offer a greater level of safety, both during construction and operation. It also retains the existing A1 as a local road, which offers an alternative route should closures be required.

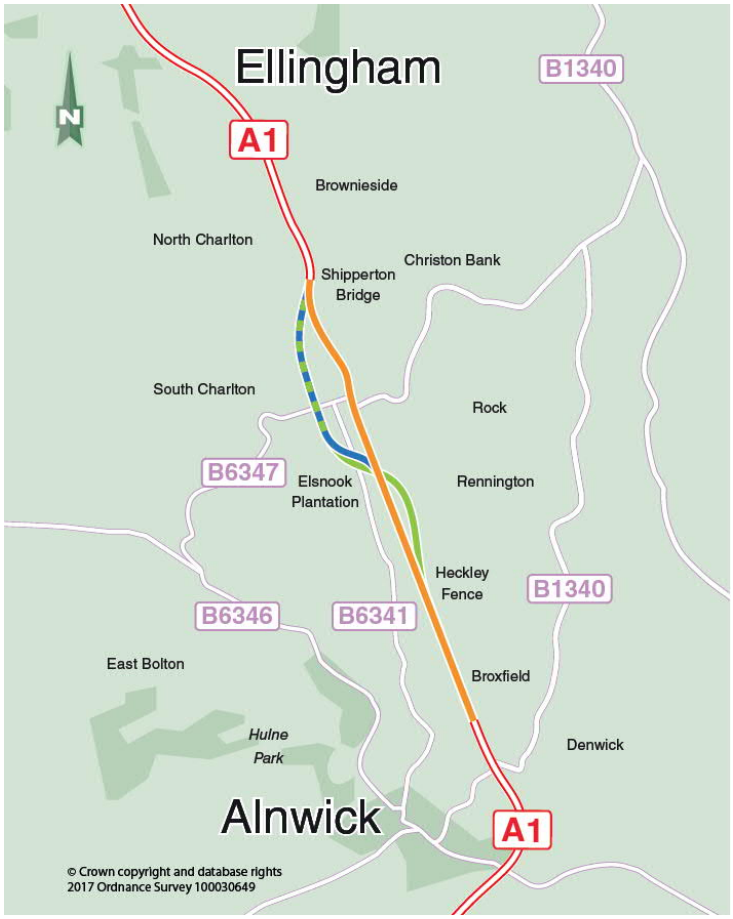
Part B

As part of the 2014 work, three options were also identified for Part B. Each option had broadly the same design at the southern section but differed in the design of the central and northern sections, as two options included bypassing sections of the existing A1, and the number of junctions proposed.

The three options are summarised below and shown in **Figure 4** below.

- **Orange Option** - Upgrade the existing road to dual carriageway, widening either to the east or the west depending on the local features that needed to be considered.
- **Green Option** - Upgrade approximately 1.2 miles (2 km) of existing road to dual carriageway and build a new carriageway to the east of the existing road at Heckley Fence, before crossing over to the west of the existing road at Elsnook Plantation and continuing until Shipperton Burn.
- **Blue Option** - Upgrade the majority of the existing road to dual carriageway, with approximately 2.2 miles (3.5 km) section of new carriageway built to the west of the existing route between Elsnook Plantation and Shipperton Burn.

Figure 4 - The Three Design Options Considered for Part B



The Orange Option was announced as the preferred option in the September 2017 Preferred Route Announcement. The Orange Option was identified as the preferred route as it was the sole viable option which met all of the Part B objectives. The two other options (Green Option and Blue Option) were materially more expensive, offered much lower value for money and would have had a greater adverse impact on the environment than the Orange Option.

The Orange Option was the only option to be presented at non-statutory public consultation, and 49% of respondents agreed with the option, while 5% disagreed and the remainder neither agreed nor disagreed or did not answer.

It should be noted that in identifying options, no option combining Part A and Part B has been identified for the Scheme. This is because a dual carriageway is already in place between the two parts. Therefore, it would be disproportionate to have proposed an entirely new alignment offline of the existing dual carriageways purely to ensure a contiguous scheme.

SCHEME DESCRIPTION

The Scheme is Described Under the Headings of Part A and Part B below

Part A

Part A is approximately 8 miles (12.6 km) in length. It would consist of widening the existing single carriageways to dual carriageway (two lanes in each direction) by constructing new carriageways parallel to the existing carriageways (online widening) and constructing new dual-carriageway (offline widening). Part A starts from the A1 junction with the A697 near Northgate Hospital and Warreners House at Morpeth and ends where the existing dual-carriageway section of the A1 west of Felton starts. A total of approximately 242 hectares (ha) of land would be required for the construction of Part A, of which approximately 167 ha, including areas which are already owned by the Applicant, would be permanently required.

From the southern extent of Part A at the A697 junction to Priest's Bridge, Part A would be online widening by constructing the new carriageways parallel to the west of the existing A1.

North from Priest's Bridge, the route runs offline; moving west away from the existing A1, by constructing approximately 6.1 km (3.8 miles) of new dual-carriageway. This new section would pass to the west of Earsdon Moor, east of Fenrother, New Houses Farm and Causey Park and meet the existing A1 near Burgham Park on the west and Felmoor Park on the east. The section of the existing A1 which would be bypassed would remain open but no longer form part of the trunk-road network. The bypassed section would be used as a local access road and would be owned and maintained by Northumberland County Council.

The new section of dual carriageway would join the existing A1 east of Burgham Park. From this point northwards for the remainder of Part A the A1 would be widened by constructing new carriageways parallel to the existing carriageway.

Part A of would provide three new junctions at Highlaws, Fenrother and West Moor. Each junction would provide access from side roads onto the A1 and would include a bridge over the A1 to allow the side roads to cross Part A without disrupting the flow of A1 traffic.

Image 3 – Existing Junction at Warreners House

Three new bridges would be constructed to maintain the continuity of side roads where they are crossed by Part A. East of Causey Park Hag, a bridge would carry Causey Park Road over Part A. West of Felmoor Park, a bridge would take Burgham Park Road under Part A. A new bridge would be constructed over the River Coquet, on the east and parallel to the existing bridge which would carry southbound traffic.

Demolition of a residential property, North Gate House (opposite Northgate Farm on the western side of the A1 approximately 100m north of the A697 Junction), would be required to construct Part A.

The existing bus stops north and southbound near Warreners House, Strafford House, and Low Espley would be removed. On the A697 at Espley (outside of the Part A boundary), bus stops would be formalised including the provision of new bus stop signs. The existing bus stops on each side of Felton Road, at its western extent, would be removed. Two new bus stops, one on each side of the road, would be provided further to the east along Felton Road.

Drainage systems would also be provided as part of the Scheme, to manage the surface water running off the carriageways of Part A. This would include various sustainable methods to channel the water from the carriageways, slow down the rate of flow and seek to minimise sediment and pollutants entering existing watercourses.

Part A would install new traffic signage and update road markings where required to reflect the new layout of the roads and to bring the existing signage up to current standards, where required. No lighting would be provided for Part A.

To allow the construction of Part A, some existing utilities such as telecommunications, water, gas and electricity equipment would require diversion. This includes a high-pressure underground gas pipeline near Causey Park.

As part of the Scheme's improvements to safety, direct accesses to the A1 would be removed for Part A, resulting in alterations to these access points. A number of new, safer private means of access, such as access tracks, are proposed for each property which currently has direct access onto the A1.

Image 4 – West Moor Junction

Part B

Part B is approximately 5 miles (8 km) in length, and starts approximately 15 km north of the northern extent of Part A. It would consist of widening the existing single carriageway to

dual carriageway by constructing new carriageways to the east of the existing A1 (online widening). The existing A1 would form the northbound carriageway and the newly constructed road the southbound carriageway. Part B is located between the villages of Alnwick and Ellingham. A total of approximately 120 ha of land would be required for construction of Part B, of which 75 ha would be required permanently (including land owned by the Applicant).

Part B would provide one new junction at Charlton Mires (existing junction shown in **Image 5**) and a bridge near to Heckley Fence for agricultural vehicles as well as walkers, cyclists and horse riders (WCH). The junction at Charlton Mires would provide access from side roads (B6347 and B6341) and new access roads onto the A1. The new junction would include a bridge over the A1 to allow the side roads and new access roads to cross the A1 without disrupting the flow of traffic. The junction would remove direct access from B6341 and B6347 on to the A1, improving safety for drivers. A footway to provide safe, pedestrian access would be included as part of the junction.

Image 5 – Existing Junction at Charlton Mires

To construct the junction at Charlton Mires two properties would need to be demolished. These are East Cottage and Charlton Mires Farm, which are both located to the east of the existing junction between the A1 and B6347 at Charlton Mires.

Three existing bus stops (two informal and one formal) would be removed for Part B, which are located around the existing Charlton Mires junction. To replace these bus stops, two new bus stops are proposed along the B6341 to the west of the A1. One bus stop would be on the southbound lane and one on the northbound lane. No new bus stops are proposed along the route of the A1 for safety reasons.

New drainage systems would be provided as part of the Part B, to manage the surface water running off the carriageways of Part B. This would include various sustainable methods to channel the water from the carriageways, slow down the rate of flow and seek to minimise sediment and pollutants entering existing watercourses.

New traffic signage would also be installed, and road markings updated where required to reflect the new layout of the roads and to bring the existing signage up to current standards, where required. No lighting would be provided for Part B.

To allow the construction of Part B, some existing utilities such as telecommunications, water, gas and electricity equipment would require diversion. This includes an Extra High Voltage cables that run between Middlemoor Wind Farm and Denwick Primary Substation.

As part of Part B's improvements to safety, all direct accesses to the A1 between Alnwick and Ellingham would be removed, resulting in alterations to these access points. A number of new, safer private means of access, such as access tracks, are proposed for each property which currently has direct access onto the A1.

Landscape Strategy and Submission

A separate landscape strategy for Part A and Part B accompanies the Scheme. The landscape strategies seek to mitigate landscape and ecological effects and focus on the retention or replacement of vegetation, ecological enhancement, protected species mitigation and landscape integration. The landscape strategies would include hedgerows, woodland blocks, scattered shrubs and trees and species-rich grassland. Additionally, a strategy is proposed to address the loss of ancient woodland in Part A by providing compensatory habitat.

If the proposed DCO is approved, it is anticipated that construction works would start on the Scheme in late 2021 with Part A anticipated to be open to traffic in 2024 and Part B open to traffic in 2023.

CONSTRUCTION

Part A

In addition to the approximately 167 ha of land permanently required for Part A, approximately 75 ha would be temporarily required for the construction of Part A for the construction compounds, working areas, storage and access areas. The Main Compound would be located at the northern end of Part A, adjacent to the proposed West Moor Junction and accessed off Felton Road and would be used for both Part A and Part B. A smaller compound would be located in the southern area of Part A adjacent to the proposed

Fenrother Junction and would be accessed off Fenrother Lane. An additional temporary compound would also be required just south of the River Coquet and would be used for the construction of the new bridge over the River Coquet.

Before main construction works for Part A can commence, some works (referred to as 'advanced works') are required. This includes works to divert some key utilities, which are expected to be carried out by National Grid before the A1 dualling works start, though to ensure these works are undertaken they have been included in the draft DCO application. These diversion works would require further temporary construction compounds south of Causey Park, which would be used for these advanced works only. It is also anticipated that certain environmental surveys would commence in January 2021, where possible, in order to inform protected species licence applications (for great crested newt, badger and bat) and to meet the proposed programme of works.

Following the advanced works, it is anticipated that site set up activities would commence in December 2021, and construction of Part A would last for approximately 30 months with works planned to be completed by May 2024.

Part B

In addition to the approximately 75 ha of land permanently required for Part B, approximately 120 ha of land would be temporarily required for the construction of Part B for the construction compounds, working areas, storage and access areas.

As well as the Main Compound described above, a second compound would be located next to the Applicant's maintenance depot at Lionheart Enterprise Park, to the south of Alnwick. A smaller compound would also be located to the east of the existing A1, in a field to the south of Charlton Mires, to facilitate construction of the new junction at Charlton Mires.

It is anticipated that construction of Part B would commence in December 2021 and would last for approximately 22 months with works planned to be completed by November 2023.

Construction Programme

The main construction works for Part A and Part B would be divided into six phases to ensure that two-way traffic is maintained on the A1 as much as possible. The exceptions to this would be for a limited number of activities, for example bridge construction, in which case alternative diversion routes would be provided.

Table 2 provides an overview of the anticipated construction programmes for Part A and Part B.

Table 2 - Overview of the Scheme's Anticipated Construction Schedule

Activities	Anticipated Start and End Date (Part A)	Anticipated Start and End Date (Part B)
Construction preparation and mobilisation	December 2021 – March 2022	December 2021 – April 2022
Online dualling works	March 2022 – August 2024	April 2022 – October 2023
Offline dualling works	March 2022 – December 2023	N/A
Bypassed section of A1	August 2023 – November 2023	N/A
Construction of River Coquet Bridge	March 2022 – December 2023	N/A
Construction of junction at Charlton Mires	N/A	June 2022 – October 2023
Scheme open to traffic	May 2024	November 2023

Construction Environmental Management Plan

The main contractor would manage the site under a Construction Environmental Management Plan (CEMP), which would ensure that the commitments made in the ES are met and to:

- Protect sensitive environmental assets
- Prevent pollution
- Set protocols for the delivery, storage and handling of fuels and materials
- Control emissions of dust
- Minimise disturbance from noise

ENVIRONMENTAL EFFECTS

EIA is a process for identifying the likely environmental effects (beneficial and adverse) of a proposed development upon existing sensitive environmental assets or features (known as receptors), to determine how significant these effects may be and how these effects could be avoided, minimised or mitigated.

The approach to the EIA comprised of gathering information on the existing environment to establish a baseline upon which the potential impacts of the Scheme can be assessed against. Once the potential impacts have been identified, measures to avoid, prevent or

reduce these impacts is determined and the resultant likely effects of the Scheme on local communities and the environment identified.

The assessment methods, including how the significance of effects has been determined, have followed industry standard methods, set out in Highways England's Design Manual for Roads and Bridges along with specific guidance for environmental topics, as appropriate. Each topic chapter in the ES provides further detail regarding the assessment methodology.

In accordance with the EIA Regulations, an assessment was undertaken of the vulnerability of the Scheme to major accidents or disasters (major events). The assessment considered a wide range of events including those naturally occurring such as lightning strikes, floods and heatwaves and human accidents such as road, aircraft and technological or manmade hazards. It was concluded that with the mitigation measures already included in the design of the Scheme, no significant adverse effects from major events would be expected.

Figure 5 and **Figure 6** below shows the location of sensitive environmental features surrounding Part A and Part B respectively. **Figure 5** is split into three separate plans, each showing a different section of the Scheme: Plan 1 shows the southern extent of Part A; Plan 2 shows the middle section of Part A; and Plan 3 shows the northern extent of Part A. **Figure 6** is split into four separate plans, each showing a different section of the Scheme: Plan 1 shows the southern half of the Main Scheme Area; Plan 2 shows the northern half of the Main Scheme Area; Plan 3 shows the proposed Lionheart Enterprise Park Compound which is in two parts; and Plan 4 shows the proposed Main Compound located within Part A.

The predicted environmental effects of the Scheme on these features are reported in detail within the ES. As outlined in **Figure 5** and **Figure 6** the main sensitive environmental features near to the Scheme include:

- River Coquet and Coquet Valley Woodlands Site of Special Scientific Interest (SSSI)
- Local Wildlife Sites (LWS) e.g. Coquet River Felton Park LWS, Hulne Park LWS, Ratcheugh Crag-Pepper Moor LWS and Cawledge Burn LWS
- Local Nature Reserves (LNR)
- Habitats and protected species
- Ancient woodland
- Public Rights of Way (PRoW)
- Listed buildings (including Grade I Heiferlaw Tower and Grade II Milepost) and heritage assets
- Scheduled Monuments
- Archaeological remains
- Residential and commercial properties
- Watercourses
- Floodplains

The EIA considered impacts in the following years:

- 2021 – the ‘construction year’ when construction starts
- 2024 (2023 Part B) – the ‘opening year’ when the Scheme is open to traffic
- 2039 (2038 Part B) – the ‘design year’ when mitigation measures are expected to mature

Some topics assess all three years, some only two, and some only one, depending on the nature of the topic.

A summary of the main findings of the EIA are provided below, together with details of the measures proposed to mitigate or reduce the environmental impacts of the Scheme. The EIA for the Scheme is reported in further detail in the ES.

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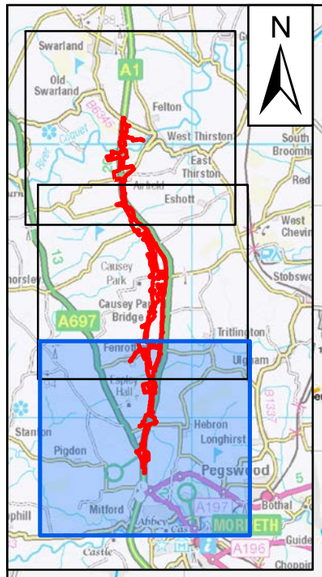
Document Path: \\uk.wspgroup.com\central data\Projects\70036xx\70036004 - A1 Northumberland\03 Environment\GIS\M2E ES\NTS Figure 4.1 - Environmental Constraints Plan Part A.mxd



Key

- DCO Application - Part A: Morpeth to Felton
- Areas Which Are Not Included in the the DCO Application
- 1km Study Area
- Ancient Woodland Inventory
- Site of Special Scientific Interest
- Local Nature Reserve
- Local Wildlife Sites
- Tree Preservation Order
- Area of High Landscape Value
- Listed Building
- Non-Designated Heritage Assets
- Statutory Main Rivers
- Surface Watercourses
- Surface Water Bodies

Source Protection Zones

- Zone I - Inner Protection Zone
- Zone III - Total Catchment
- Flood Zone 3
- Flood Zone 2
- Noise Important Area (NIA)
- Public Rights of Way

Figure 5 - Environmental Constraints Plan: Part A

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Key

- DCO Application - Part A: Morpeth to Felton
- Areas Which Are Not Included in the the DCO Application
- 1km Study Area
- Ancient Woodland Inventory
- Site of Special Scientific Interest
- Local Wildlife Sites
- Area of High Landscape Value
- Listed Building
- Non-Designated Heritage Assets
- Statutory Main Rivers
- Surface Watercourses
- Surface Water Bodies
- Flood Zone 3
- Flood Zone 2
- Mine Entry Locations
- Landfill
- Noise Important Area (NIA)
- Public Rights of Way

Thirston Airfield
Bockenfield Farmhouse
Milepost
Shooting Ground
Longdike Burn
Coquet Cottages
Burgham Park Golf Club
Campsite at Felmoor
Milepost
The Oak Inn
NIA 10002
Milepost
Milepost
Tritlington School
Coronation Avenue (Start/End)
Jackson G K & Sons Garage
Milepost

0 0.5 1 1.5 km

Figure 5 - Environmental Constraints Plan: Part A

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Document Path: \\uk.wsgroup.com\central data\Projects\70036xx\70036004 - A1 Northumberland\03 Environment\GIS\M2E ES\NTS Figure 4.1 - Environmental Constraints Plan Part A.mxd

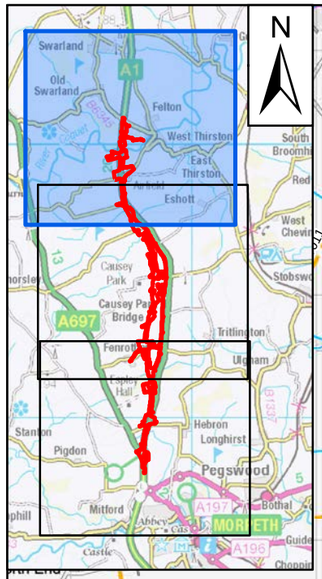

Figure 5 - Environmental Constraints Plan: Part A

N

Key

- DCO Application - Part B: Alnwick to Ellingham
- Main Compound
- Areas Which Are Not Included in the the DCO Application
- 1km Study Area
- Listed Building
- Non-Designated Heritage Assets
- Public Rights of Way
- Statutory Main Rivers
- Surface Watercourses
- Area of High Landscape Value
- Local Wildlife Sites
- Scheduled Monument
- Site of Special Scientific Interest
- Area of Outstanding Natural Beauty
- Surface Water Bodies
- Flood Zone 3
- Flood Zone 2

0 0.5 1 1.5 km

Figure 6 - Environmental Constraints Plan: Part B

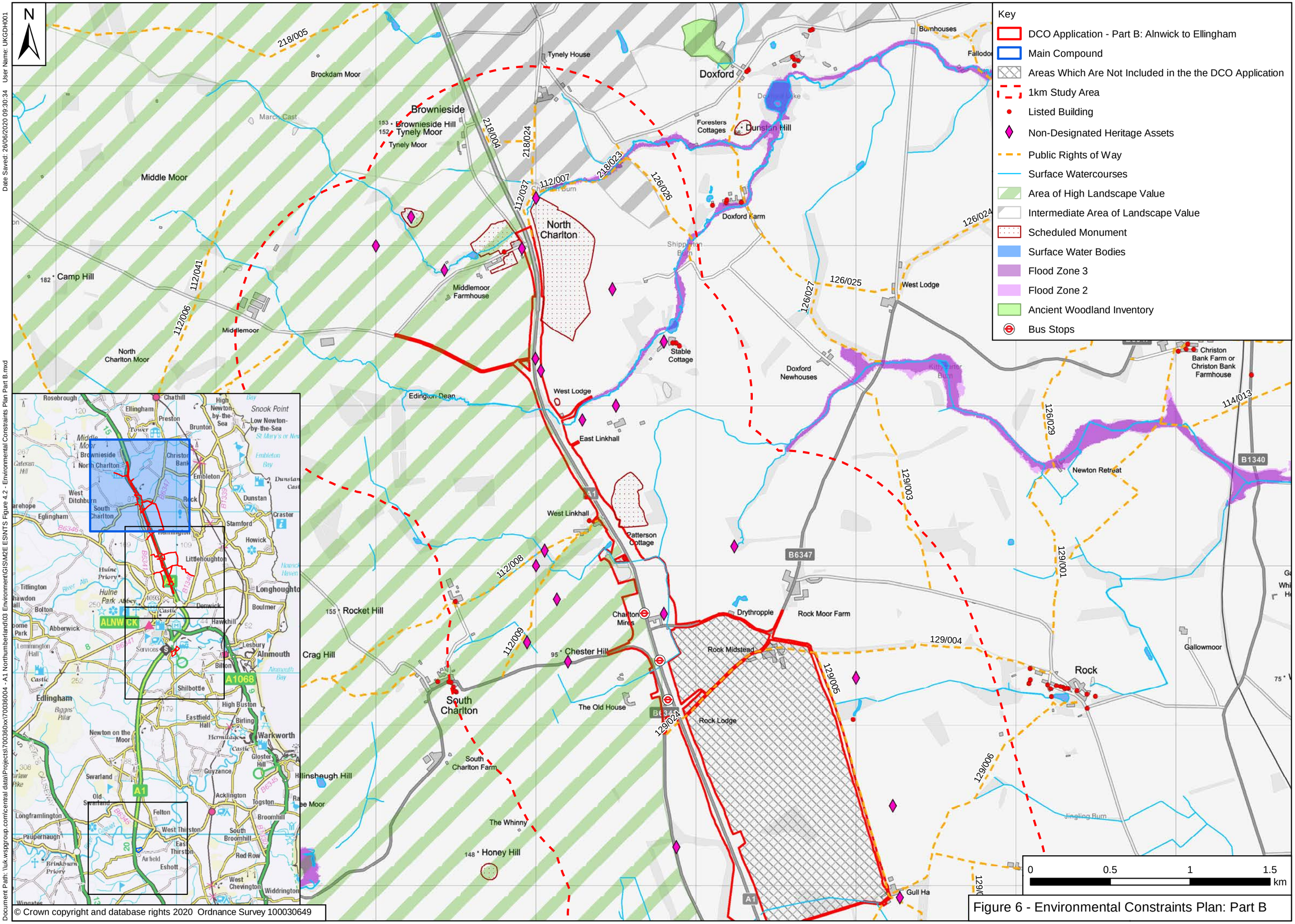

Figure 6 - Environmental Constraints Plan: Part B

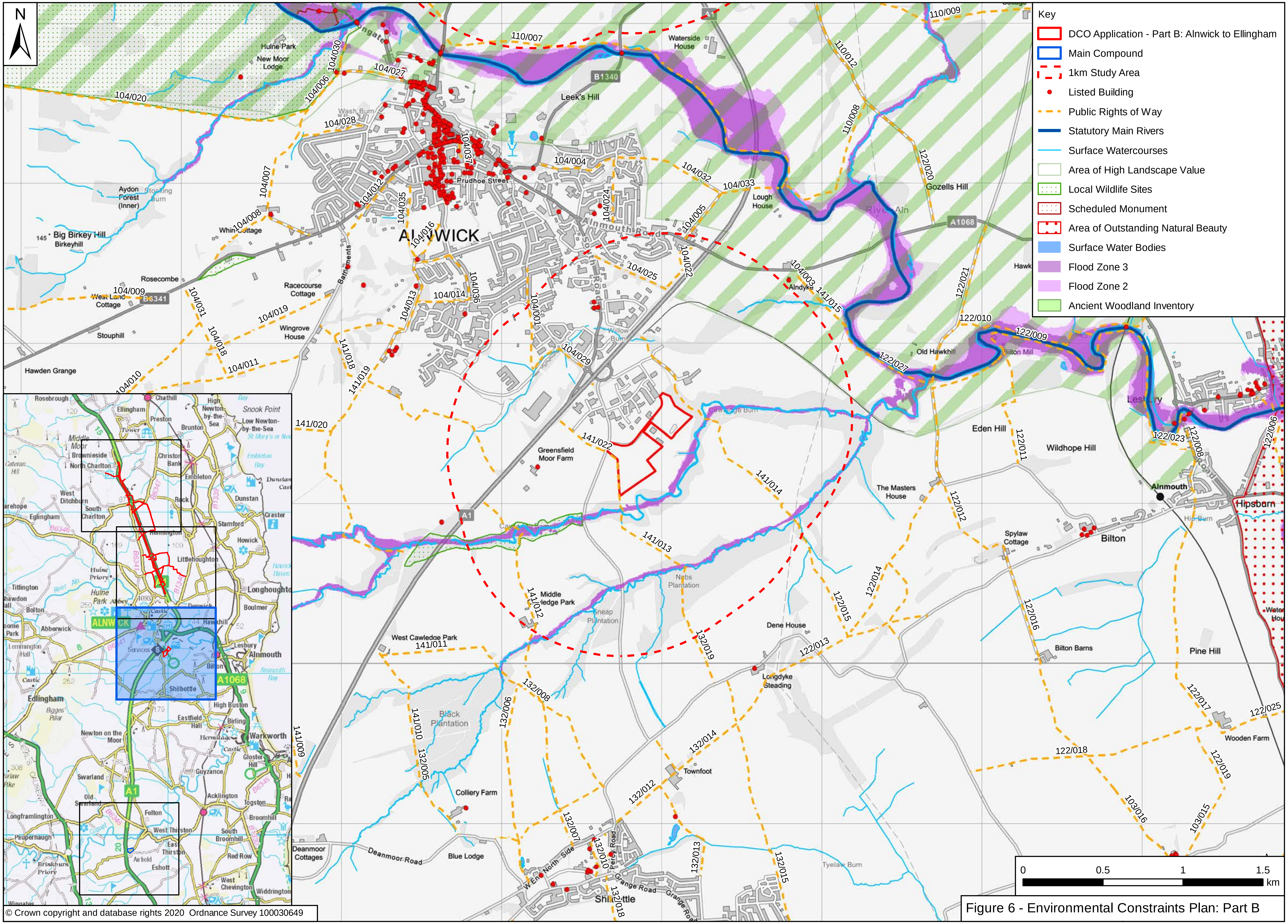

Figure 6 - Environmental Constraints Plan: Part B

Document Path: \\uk.wspgroup.com\central data\Projects\700360xx\70036004 - A1 Northumberland\03 Environment\GIS\M2E ESINTS Figure 4.2 - Environmental Constraints Plan Part B.mxd Date Saved: 26/06/2020 09:30:34 User Name: UKGDH001

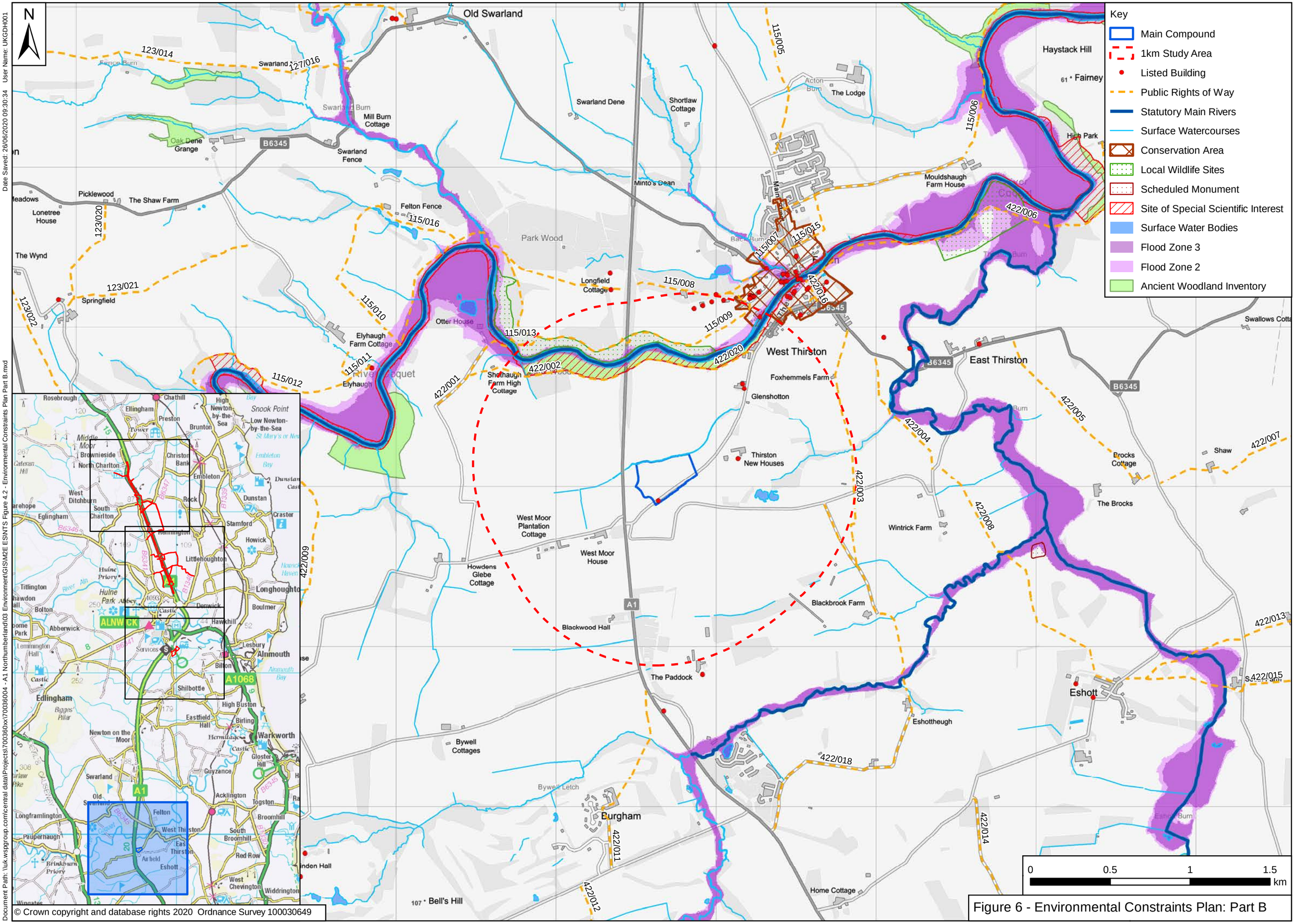

Figure 6 - Environmental Constraints Plan: Part B

PART A

AIR QUALITY

Overview

The air quality assessment considers Part A's potential to impact local and regional air quality during construction and once Part A is open to traffic (operation). Part A is not located within an Air Quality Management Area - areas that do not meet a national air quality objective indicating that air quality in these areas requires improvement. Data from Northumberland County Council, the government and monitoring of nitrogen dioxide undertaken as part of the EIA show that existing air quality across the area of Part A is good, with no exceedances of national air quality objectives and low risk of non-compliance with the European limit for annual mean nitrogen dioxide.

Construction

Part A would temporarily affect local air quality as a result of emissions from construction activities. The potential air quality impacts due to construction traffic and temporary diversions are considered unlikely to cause a significant effect. However, measures would be put in place during construction to avoid the potential impacts from construction dust causing a significant effect. This would be done by incorporating industry best practice measures into the Construction Environmental Management Plan, which the main contractor would be required to follow. Examples of such measures include covering dusty materials, limiting construction vehicle speeds on site and machinery would be well maintained and in full working order.

Operation

Once Part A is open there would be no new, or worsening of an existing, exceedance of an air quality objective at relevant locations such as residential premises and Tritlington Church of England First School. Part A would pose a low risk of non-compliance with the European limit value for annual mean nitrogen dioxide.

Increased nitrogen oxides at ecological sites would not lead to a significant effect.

NOISE AND VIBRATION

Overview

The A1 between Morpeth and Felton runs through a rural landscape surrounded predominantly by agricultural land, with few dwellings close to the road. A noise survey was undertaken to measure the existing noise levels at various locations along Part A. There are two Noise Important Areas (defined as areas along roads which have been identified through high-level noise mapping as having high noise levels) within Part A. These are adjacent to the existing A1 carriageway at Northgate Farm and Causey Park.

Computer modelling has been undertaken using the data from the noise survey and data on the predicted future traffic flows to calculate the potential impact of Part A on the existing noise levels.

Construction

The main construction activities which could cause noise and vibration impacts include:

- Clearing the site (e.g. removing vegetation)
- Earthworks
- Construction of the bridges
- Construction of the road
- Operation of the construction compounds
- Construction of noise barriers
- Construction of cycle path

The majority of the construction activities for Part A are linear activities (such as road surfacing) or short-term activities which are unlikely to impact individual receptors for prolonged periods of time. The two activities most likely to cause an impact are bridge construction and earthworks. Mitigation measures to reduce noise impact during construction are detailed in the Outline Construction Environmental Management Plan (Outline CEMP) submitted with the DCO application. The mitigation measures include, for example, using plant, vehicles and machinery with the lowest noise levels, switching off equipment and machinery when not in use, using low noise construction methods and ensuring residents are informed of the works.

In areas where noise and vibration levels from construction are likely to be high enough to affect health and/or quality of life, additional measures would be implemented in order to minimise noise levels to acceptable levels. This includes measures such as programming works so the requirement for working outside normal hours is reduced and ensuring exposure to high noise or vibration levels does not exceed 10 days/nights in any consecutive 15 days/nights or does not exceed 40 days/nights in any consecutive 6 months and the offer of temporary rehousing where these durations need to be exceeded. With these measures in place, no significant effects during construction are predicted.

Operation

Part A has included measures to reduce noise levels including installation of a low noise surface for the majority of the A1 carriageways.

Noise barriers (fence-like barriers designed to reduce noise levels) are proposed along the carriageway of the A1 to reduce noise levels from the operation of Part A at residential properties. These barriers are proposed near Causey Park and New Houses Farm. Noise barriers are also proposed at Northgate Farm, Felmoor park and Bockenfield Holiday park, although further investigation would be undertaken at the next stage of design to determine whether there is sufficient space to build these barriers. Earth mounds have been proposed to lessen the visual impact of the road; however, these would also serve as mitigation for

noise. With these measures, during operation, Part A is predicted to result in a significant beneficial effect (reduction in noise levels) at 13 residential properties and Tritlington Church of England School and Oakwood Holiday Cottages, and a significant adverse effect (increase in noise levels) at three properties.

LANDSCAPE AND VISUAL

Overview

The surrounding landscape is generally open with arable and pasture farmland enclosed by hedgerows (some tree-lined and some stone walls) and crossed by the A1 from Newcastle to Berwick and the A697 to Coldstream; the county's two major roads. The landscape surrounding Part A is predominantly undeveloped; the largest settlement, Morpeth, is located approximately 2 km to the south-east of Part A and Felton approximately 1 km east of the northern extent of Part A, with scattered farms and hamlets comprising the settlement pattern within the rest of the area around Part A. There are numerous areas of woodland, notably an area to the south of the River Coquet which is designated as ancient woodland. A distinctive row of individual trees to the north east of Morpeth running parallel to the A1 is known locally as Coronation Avenue, as they were planted in 1936 to celebrate the coronation of George VI. There are also several watercourses in the area of Part A, the most prominent of which are the River Coquet and the River Lyne. Part A crosses areas designated through local planning policy as ‘High Landscape Value’ and the southern area of Part A passes through an area of Green Belt. Several PRoWs also run throughout Part A, as shown in **Figure 5**.

The assessment has considered impacts of Part A on the national and local landscape character and visual impacts for existing residents, road users and other users, such as WCHs.

Construction

Construction works would require the removal of landscape features such as hedges, trees and woodland (including some of the trees that make up the Coronation Avenue) that contribute to the vegetation cover. This would result in the removal of features which contribute to the local landscape character and therefore there would be newly exposed views of the wider landscape and the construction activity. Temporary heaps of material from excavation, material storage and site compounds would generate changes in the landscape. New structures, embankments and signage would result in a reduction of the sense of openness in the predominantly agricultural landscape, which is a key feature of the Green Belt designation that covers the southern area of Part A.

Construction activities would result in temporary adverse visual impacts. The presence of construction compounds and activity of construction machinery and vehicles, artificial lighting, demolition works including North Gate House, traffic management equipment and the storage heaps of excavated material would all result in adverse visual impacts. As a result, the occupiers of 30 residential properties (or groups of properties), users of 10

PRoWs and the occupants of three commercial and/or community facilities would experience significant adverse visual effects during construction.

Measures to mitigate construction impacts include: retaining existing vegetation wherever possible; using temporary soil mounds to restrict views of construction activities; locating machinery and material storage areas to avoid landscape and visual impacts; avoiding works during hours of darkness wherever possible and generally maintaining a tidy construction site.

Operation

The assessment considers the landscape and visual effects, both when Part A opens and, in the future, (15 years after opening), to account for when the landscape planting proposed as part of Part A would have matured. The design of Part A has sought to retain existing vegetation wherever possible. The landscape design for Part A includes slopes and bunds that reflect local landform, hedgerow, woodland, scattered or individual trees, conservation grassland, grass verges, marginal planting and wetland areas, arable field margins, and amenity grassland.

Part A would significantly affect three local landscape characters as it would reduce the sense of the existing landscape being a tranquil, unspoilt agricultural landscape. Once the landscape planting matures (15 years after opening), and is visually integrated into the landscape, this effect would not be significant.

The visual impacts of Part A would typically occur within short range views (less than 500 m) as well as some long-range views up to 1 km, though the appearance would improve as Part A's landscape planting matures and begins to integrate Part A into the landscape. Consequently, the occupants of 19 residential properties or groups of properties are anticipated to experience significant visual effects once Part A opens. This is anticipated to reduce for the occupants of 9 residential properties as the landscape planting matures. Part A would also visually impact upon users of five PRoWs such as walkers, horse riders and cyclists when Part A opens, reducing to three when planting has matured. Significant visual effects are expected on occupants of two commercial facilities once Part A opens, but none would be significantly affected once Part A's landscape planting matures. Regular inspection of the landscape planting would be carried out to ensure its effectiveness and to remedy any defects while it establishes.

CULTURAL HERITAGE

Overview

The assessment considers the potential effects of Part A upon cultural heritage assets, such as archaeological remains, historic buildings or structures, conservation areas and historic landscapes. A total of 149 heritage assets surround Part A including built heritage assets (such as listed buildings), two conservation areas (Felton Conservation Area and West Thirston Conservation Area) and a Scheduled Monument (Old Felton Bridge). Part A also crosses regionally and locally valued historic landscape character areas. A survey has also

indicated that there are archaeological remains of regional and local importance across the Scheme area.

Construction

It is anticipated that any effects on below ground archaeological remains due to disturbance from construction would vary, depending upon the value of the asset, but could be significant if encountered. The presence of archaeological assets (and therefore impacts upon them) would be established through a programme of archaeological evaluation, through excavation of sample trenches, as agreed with Northumberland County Council. The programme of archaeological evaluation, referred to as trial trenching, is presented in a Written Scheme of Investigation (WSI) which accompanies the DCO application**.** The trial trenching would take place before the construction works start. The aim of the trial trenching would be to determine the presence, extent, date, value and level of survival of the archaeological resource and to inform a subsequent programme of mitigation to be undertaken either before or during construction. A method statement would be devised in consultation with Northumberland County Council and potentially Historic England (depending on the nature of the assets) to mitigate for any unknown archaeological remains which may be encountered during construction. Should below-ground archaeological remains be found during construction, options would include preservation in-situ (which may require the redesign or diversion of elements of Part A, or reburial and protection) or those of lesser importance may be recorded in an archive. The mitigation measures adopted would be dependent on the nature and material of heritage assets identified.

Where below-ground remains are present within Part A, mitigation would seek to either preserve them in place or preserve them by record. Preservation in place typically involves altering construction methods or the design to leave the asset in place and undisturbed, meaning no significant effects would be expected. Preservation by record would include an archaeological survey and recording of the asset in place before altering or disturbing it, which would reduce the effects upon most assets, but the effects upon some archaeological remains would still be significant.

Construction works would temporarily impact the setting of some built heritage assets through noise and visual disturbance, however mitigation measures to reduce these impacts are included in the Outline CEMP (as noted in the noise, landscape and air quality sections for Part A of this NTS) following which, there are predicted to be some temporary significant effects. One Grade II Listed milepost would have to be removed during construction and repositioned near the new road once it has been constructed, however this would not be a significant effect. Areas of historic landscape character would be impacted through the loss of land required to construct Part A, changing the character of the land and altering field patterns. Hedgerows with historic value would also need to be removed. However, no historic landscape character areas are predicted to be significantly affected.

Operation

Part A could result in changes to local groundwater levels which would impact any nearby buried archaeological assets, however as the design includes a robust drainage system no significant effects are predicted.

Nine built heritage assets would experience a change in their setting as a result of either Part A moving closer to the asset or an increase in noise, light levels or pollution. However, when also considering the landscape design proposed as part of Part A which would limit views and the noise barriers, the effects are not considered to be significant.

Image 6 – Existing A1 north of Warreners House

BIODIVERSITY

Overview

The assessment considered the impacts of Part A on the natural environment, including protected species, habitats and ecologically designated sites.

The natural environment around Part A comprises a variety of grasslands, hedgerows, woodland, trees, scrub and waterbodies and rivers. There are several areas within 2 km of Part A designated for their environmental value, such as SSSI's, Local Nature Reserves and LWS. The most notable of these are the River Coquet and Coquet Valley Woodlands

SSSI and the Coquet River Felton Park LWS as Part A crosses these areas. Dukes Bank Wood (which is within the SSSI) is designated as an ancient woodland (areas that have been wooded since 1600A.D). Field surveys and sampling found various wildlife species including great crested newt, bat, badger, birds (including barn owl), red squirrel, otter, invertebrates, fish, brown hare and invasive species such as American mink.

Construction

Part A would result in the loss of a 0.68 ha area of ancient woodland to allow for the construction of the River Coquet Bridge. However, Part A would provide a larger area of compensatory woodland planting amounting to 8.16 ha. This would take time to re-establish a woodland of similar ecological function as the area of woodland to be lost and therefore would be a significant effect. Vegetation clearance to make way for working areas and construction of Part A would result in the loss of habitat such as woodland, hedgerows, grassland and running water. However, replacement habitat would be provided through the landscape planting as part of Part A, which would lead to beneficial significant effects in some instances. Works to drainage culverts would result in both temporary and permanent loss of watercourse habitat which may also impact upon fish and aquatic invertebrates (small insects which live in water). However, with measures such as an ecologist supervising works, creating temporary channels for the watercourse and seasonal restrictions on works for certain watercourses, the effects would not be significant. Measures to mitigate the impacts of Part A include obtaining appropriate licenses, permits or consents where required, a pre-commencement walkover survey of the works and surrounding area undertaken by an ecologist and keeping vegetation clearance to a minimum and undertaking such works outside of the bird nesting period. Further mitigation measures are proposed for specific species, habitats or construction activities where a particular risk is identified. With mitigation measures in mind, no other impacts are predicted to result in a significant effect.

Operation

There would be changes in air quality pollutant levels at nearby designated ecological sites once Part A is operational. There would be no significant effects on ecological sites as a result of changes in air quality.

Measures that would be put in place to mitigate adverse effects on protected species include, for example, roadside bunds in specific locations to encourage barn owls to fly high and over the road and a number of culverts to provide a way for bats to fly under the road, to maintain flight paths across Part A. Culverts have also been designed to mitigate impacts upon fish, amphibians and mammals by incorporating natural beds and ledges, where possible. Four culverts are also proposed solely to provide crossing points for badgers and other mammals.

The biodiversity assessment also considered whether Part A would result in an overall loss of biodiversity. This concluded that Part A is in line to deliver a considerable net gain in biodiversity units (the value measured in a biodiversity assessment) of area-based Habitats

of Principal Importance (those most threatened and requiring conservation). However overall, Part A would result in a net loss of biodiversity due to the loss of ancient woodland (which is an irreplaceable habitat) as well as other habitat types such as hedgerows, although more hedgerows would be planted as part of Part A's landscape strategy than would be lost.

ROAD DRAINAGE AND THE WATER ENVIRONMENT

Overview

This assessment considers the impact of Part A on road drainage and the water environment, including surface and groundwater and flood risk.

The Part A road alignment would cross ten watercourses and associated tributaries, the most notable of which are Longdike Burn and the River Coquet. These watercourses are shown on **Figure 5** above. The majority of the geology of the area is permeable rock capable of supporting water at a local, rather than regional scale. Much of Part A is within areas of low flood risk, though some areas are within medium or high flood risk. Currently, surface water from the A1 is collected by a system of gullies and transported via an underground piped system to various watercourses near to Part A where the water is discharged.

Construction

Potential impacts during construction include impacts to water quality due to any spillages of fuel, oil, chemicals, concrete and increased sediment from construction activities that could be washed into watercourses. Works within watercourses would also be needed to extend and create new culverts, bridge crossings (including the River Coquet) and channel realignments which could increase the amount of sediment in the water, increase the risk of pollutant spillage as well as temporary loss of vegetation, damage to the riverbed and changes to the characteristics of the flow of groundwater and water within the watercourses. Also, whilst the works may cause increased localised flood risk, there are no properties located close to the proposed construction areas and therefore impacts are unlikely. Part A would have no significant effects on the surrounding water environment.

Measures to protect the water environment during construction are included in the Outline CEMP. Such measures include, for example, storing potentially polluting substances at least 10 m away from watercourses, locating topsoil storage areas away from watercourses and covering or seeding them until needed, refuelling vehicles away from water, checking construction plant regularly for oil and fuel leaks particularly when working near waterbodies, signing up to the Environment Agency's flood warning service and applying for appropriate consents. With these measures in place, it is not anticipated that there would be any significant effects on the water environment during construction.

Operation

Potential impacts during the operation of Part A include impacts from polluted surface runoff and the quality of nearby water features, changes in natural overland flow, increased rates

and volumes of surface water runoff from increased impermeable areas and a permanent increase in flood risk. Part A includes mitigation measures such as a drainage strategy which incorporates drains and basins to collect surface water runoff from the highway and transport it to areas designed to manage the flow during periods of heavy rainfall to reduce flood risk. The drains and basins would also reduce sediment and pollutants entering the surrounding watercourses. In addition, the culverts have been designed to not increase flood risk. As mentioned in the biodiversity section, natural beds and ledges for animal passage have been included in the culvert design where possible. With these design and mitigation measures in place there would be no significant adverse effects on the water environment.

GEOLOGY AND SOILS

Overview

The different types of land use and soil conditions within Part A have been surveyed to understand the quality of the existing soil and assess the effects Part A would have on geology, soils, groundwater, mineral resource and surface water. Approximately 9% of the area of Part A lies within what is considered good-quality agricultural land. Two areas of past coal mining have been identified at Causey Park Hagg and adjacent to Eshott Airfield at the northern end of Part A.

Construction

The construction of Part A would temporarily require the use of approximately 63 ha of agricultural land for working space and access, which could reduce the quality of the soil. This would not have a significant effect as the areas to be temporarily used would be reinstated to agricultural use following construction. This would be in line with a ‘Soil Handling Strategy’ which would be developed to detail measures on how to preserve soil and land quality.

Agricultural land temporarily required would be reinstated on completion of the works, however Part A would result in the permanent loss of approximately 109 ha of agricultural land. There would be a significant effect due to the loss of 9 ha of agricultural land which is categorised as best and most versatile agricultural land and 73 ha which is considered of moderate quality. The loss of the remainder of agricultural land would not be a significant effect.

Potential sources of contamination have been identified in parts of Part A, notably near to Eshott Airfield, which could impact construction workers. However, the Outline CEMP includes measures such as suitable risk assessments and control measures (including respirators and monitors) for construction staff working in confined spaces (such as maintenance chambers associated with the drainage infrastructure) and procedures for encountering any unexpected contamination to ensure the safety of construction workers. With these measures in place, there would not be a significant effect on construction workers. Construction vehicles and the storage of fuels and chemicals also present the risk

of leaks or spillages, as well as earthworks generating silt, which could enter surface watercourses and groundwater. However, the Outline CEMP includes measures to limit pollution to the surrounding water environment, such as, requirements for construction activities with a greater risk of spillage (such as vehicle maintenance areas) to be carefully located, refuelling would take place on impermeable surfaces, secure storage of fuels, oil and chemicals and loose materials would be covered when stored. Earthworks close to sensitive watercourses near Part A, notably the River Coquet, would also be carefully managed. With these measures in place, there would not be a significant effect on the surrounding water environment. Shallow worked coal seams and several historical mine shafts present a risk of collapse and mine gas; however, all construction staff would be made aware of their presence, a risk assessment undertaken, and mine shafts would be made safe if found, therefore no significant effects are predicted.

Operation

Potential sources of hazardous ground gas would continue to be present during the operation of the Scheme. Hazardous gas could move to confined spaces, which could cause a suffocation or explosion risk for maintenance workers that need to access these spaces. Measures would be put in place, such as, appropriate training, preparation of risk assessments and implementation of controls measures (for example gas alarms and respirators). With these measures in place, there would not be a significant effect on human health.

During operation, there would be a risk that the surrounding water environment would become contaminated from leaks and spills from vehicles using the new A1. Measures would be implemented as part of the drainage design to prevent contamination to the water environment, meaning there would not be a significant effect.

POPULATION AND HUMAN HEALTH

Overview

The population and human health assessment considers the effects of Part A on communities, properties, land use, WCHs, vehicle travellers, the local economy and human health.

Part A is set within a rural landscape and is sparsely populated. Morpeth and Felton comprise the main settlements with villages and hamlets scattered between. There are several communities, recreational facilities and community facilities within the vicinity of Part A. There are also a number of PRoW which are used for walking, cycling and horse-riding. This includes St Oswald’s Way (a long-distance footpath, north of the River Coquet).

Image 7 – Tritlington Church of England First School at Tritlington Junction

Construction

To allow construction works to take place 18 PRoWs require temporary closure, which is likely to cause significant disruption to some users. Measures would be put in place to reduce the effects upon WCHs, including, for example, Northumberland County Council, affected individuals and groups would be consulted on any temporary diversionary works or closure of WCH routes. The public would be informed of the nature, timing and duration of particular activities during the construction stage by newsletter or other forms of appropriate communication. A PRoW Management Plan would also be produced by the main contractor. Where PRoW remain open and are near to construction works, users would experience visual intrusion, noise and dust emissions which would have negative effects on users. However, the effects are not anticipated to be significant with measures put in place as discussed in the other assessments to minimise impacts such as dust, noise and visual intrusion. Existing bus stops along the existing A1 would be removed and new ones proposed. However, temporary bus stop provision would be provided during construction of Part A.

Reduction in the amenity value (noise, dust and disruption to existing views) of the River Coquet in proximity to Part A has the potential to affect the recreational value of activities

such as angling, boating and general use of the River Coquet area, which would lead to a significant effect. There could also be a change in amenity value for Felton Park, but this would not be significant.

One private residence (North Gate House) would be demolished during the construction of Part A which would be a significant effect. Access to other affected private residences would be maintained or temporarily diverted during construction with no further significant effects. A Construction Traffic Management Plan would be put in place to manage construction traffic and diversion routes.

Some minor beneficial economic effects have been identified due to the creation of construction related jobs and support to local businesses, for example, through expenditure on materials for Part A.

The community is expected to continue to be able to access community facilities and recreational facilities during construction, therefore no significant effects are predicted.

There may be some disruption to access for commercial properties, including to agricultural land holdings, during construction of Part A, but measures would be put in place to reduce the impacts of this and maintain access where practical. However, four farm holdings would experience temporary significant effects during construction due to temporary land loss and disrupted access.

During construction, traffic management systems and diversion routes may lead to some traffic being rerouted onto local roads, in particular the A697. These diversions, and any associated congestion, could potentially worsen existing severance of communities along that route. This would be managed by a Construction Traffic Management Plan and there would be clear signage and clear notification of the diversion; however, the effects are not considered to be significant. Driver views from the road during construction would be significantly worse due to removal of areas of roadside vegetation and visibility of construction activities. There is not anticipated to be an overall change in driver stress experienced along the A1 during construction because driver stress levels are already high. The removal of three bus stops would increase journey times for public transport users and reduce access to public transport, but this is unlikely to cause significant disruption.

Impacts upon human health would be managed by measures discussed in the other assessments to minimise impacts such as dust, noise, air quality and flooding. This would include measures such as controlling dust and wheel washing to reduce impacts on air quality, careful management of the timing of construction activities to reduce the impact of noise and vibration and ensure good storage of fuels away from watercourses to prevent water pollution. Effects on human health during construction are therefore not expected to be significant.

Operation

As part of Part A's aim to improve safety, once Part A is built WCHs would no longer be able to directly cross the A1; instead, connectivity would be maintained by new footways

provided on the bridges of the proposed new junctions. Therefore, some PRoWs would be diverted to these crossings or would be closed. In addition, the east-west PRoW south of the River Coquet would be routed under the existing and proposed River Coquet bridges. These would be detailed in the PRoW Management Plan, to be produced by the main contractor. The changes would result in a slight beneficial effect for some PRoW users where safety is improved and additional WCH facilities are provided. The effects would be adverse due to the separation of residents from facilities and services, but these effects would only be significant for the users of one footpath. This footpath connects Fenrother to the A1 and starts opposite an unnamed road which provides access to Tritlington Church of England First School. Improved safety would also benefit residents, despite slightly increasing journey times. During operation, there would be some adverse and some beneficial effects on the amenity for users of the PRoW with planting in place, however, these effects are not anticipated to be significant. There would not be a significant change in amenity for River Coquet and Felton Park.

There would be significant effects on four farm holdings during operation due to land take and impacts on farm businesses. No significant effects are expected to other commercial properties and community facilities because accesses would be maintained. Access to existing residential properties would change which would increase journey times but, in most instances, would provide safer access. Overall, this effect is not considered to be significant.

The location of the new bus stop at Low Espley would increase journey times for those that usually use public transport. A new segregated shared footway and cycleway would be provided along the length of the eastern side of the proposed road linking the bypassed section of A1 and Felton Road. This would improve access and safety for cyclists alongside the A1, resulting in a beneficial but not significant effect. Permanently diverting traffic from the A1 onto the new section of Part A near to Tritlington Church of England School would reduce traffic near to the school, making it safer for people to access and increasing amenity for the school. Part A would also benefit vehicle users, as the improved traffic flows and reduction in fear of accidents would decrease driver stress.

Views for users of the A1 after construction are unlikely to change significantly, especially once Part A planting has matured. There would be no impacts on the local economy during operation.

Once operational, the operation of Part A, including changes in traffic flows, would not have a significant effect on human health, relating to noise, air quality pollution and flooding.

MATERIAL RESOURCES

Overview

The materials and waste assessment considers the impacts and effects of Part A on the consumption of material resources (including products offering sustainability benefits,

recycled or renewable sources) and the generation and use of material recovered from site. It also considers the production and disposal of waste to landfill.

The current operation and maintenance of the existing A1 assets consumes a small number of components such as signage, steelwork for replacement barriers, as well as asphalt for minor re-surfacing for routine works and repairs of the highway. Minimal volumes of waste from such routine maintenance activities and other activities, such as littering, are generated.

Construction

Construction of Part A would require materials such as steel, concrete and asphalt to be used which may consume materials which are in limited supply. Waste would also be generated from activities such as demolition and widening of the carriageways which, if sent to landfill, would impact upon regional landfill capacity.

The consumption of construction materials for Part A would not have a significant effect on the local, regional and national market resources; that is, there would be sufficient materials available to construct Part A. It is intended that the majority of material from earthworks, demolition of existing structures, for the tie-in of new structures and road surfacing for the widening works would be, wherever possible, reused on-site, or recovered and diverted from landfill. Although, any wastes which cannot be diverted from landfill, such as contaminated earth material, would have an adverse impact on landfill capacity in the region.

A number of options for reusing excavated material are being explored. Excavated material not required on Part A would be re-used in the construction of Part B, if it is suitable, and/or exported for use to the Applicant's other schemes in the North East. This material would be stored temporarily within Part A until the start of construction of these other schemes.

The Outline CEMP states the requirement for the main contractor to produce management plans to monitor material reuse and to manage and monitor site waste to reduce waste and potential harm to the environment. Based upon estimated quantities of required material, and the capacity of the regional landfill site to accept the waste, the effect of Part A is not considered to be significant.

Operation

The operation and maintenance of Part A assets would require only a small number of components for example, signage and steelwork for replacement barriers. Similarly, there would only be small volumes of waste generated for example from routine bridge maintenance. As such operational effects are not considered significant.

CLIMATE

Overview

The climate assessment considers how Part A could affect climate, for example by releasing more greenhouse gases (GHG) during construction and operation and their

contribution to global warming and climate change; and considers the vulnerability of Part A to climate change, in particular impacts on Part A from extreme weather and long-term climate change during construction and operation. GHG are natural and man-made gases occurring in the atmosphere, which retain the sun's energy within the earth's atmosphere leading to changes in climate. The assessment considers that GHG emissions occur constantly and widely due to human and natural activity, therefore, the assessment only considers where Part A results in additional or avoidable emissions compared to the existing scenario and its assumed evolution.

Construction

During construction, the main source of GHG emissions would be carbon inherently within construction materials, the majority of which relates to bulk materials including, for example, asphalt, aggregate and steel. Other sources include waste generation, disposal and the transportation of materials. Measures to mitigate the generation of GHG are set out in the Outline CEMP and include, amongst others, minimising waste and maximising material reuse, sourcing materials locally to minimise transportation, re-using material from earthworks and demolition and using pre-fabricated elements and off-site construction to optimise efficiency. The construction of Part A is considered not to have a significant effect on GHG emissions. Furthermore, the total estimated GHG emissions arising from Part A (both construction and operation) would be less than 0.008% of the overall UK National Carbon Budget.

The climate vulnerability assessment has identified that hazards including extreme weather events (such as extreme rainfall, drought, wetter winters and flooding, extreme temperatures and wind) have the potential to impact construction workers, business continuity, materials and equipment and structures. However, when considered with Part A resilience and the mitigation measures below, no significant effects are predicted.

Mitigation measures would be implemented during construction to manage the risks, for example, avoiding concreting in middle of day and avoiding working at heights or use of cranes during high wind events.

Operation

During operation, the main source of GHG emissions would be from the vehicles using Part A. Another, lesser, source of emissions is those associated with the repair (e.g. resurfacing) and replacement of Part A. The change in land use as a result of Part A is predicted to result in a reduction in GHG emissions due to an increase in forest area. However, as with the construction phase, although the operation of Part A is predicted to have an adverse impact upon GHG emissions, the magnitude of GHG emissions and the context of Part A, using professional judgement, it is considered that the effect would not be significant.

The potential impacts of climate change to Part A are similar to that during construction. The impacts include, for example, damage to carriageway, bridge structures from extreme weather conditions (rainfall, drought, storms and wind), reduced opportunities for

maintenance owing to extreme rainfall events and temperatures, increased skid and accident risk due to extreme rainfall events and safety risks to road users due to storms and associated damage and hazards (such as falling trees and dust). However, no significant effects are predicted when considering Part A's resilience and mitigation measures.

COMBINED EFFECTS

Overview

An assessment has been undertaken to consider how multiple impacts at the same time may affect a receptor. This could occur due to multiple impacts of Part A from different environmental topics combining to cause an effect on the same receptor which is different than the effect of an impact from one topic alone. This is known as combined effects, and could occur if, for example, a residential receptor is affected by noise, air quality and visual effects from Part A.

Construction

Combined effects during construction would affect receptors such as residents, amenity areas, road users, users of footpaths and PRoW, ecological sites, commercial properties, agricultural land and community facilities. The anticipated combined effects vary for each receptor, but include such effects as changes in air quality, increased noise levels, loss of trees and vegetation, and changes in views, amongst others.

Mitigation measures for Part A, for instance maintaining construction machinery and vehicles to reduce noise generation, suitable material storage away from receptors, and the adherence to strict working hours (among others) would minimise the potential for combined effects. However, significant adverse combined effects upon some residential receptors (due to the demolition of houses, visual, noise and air quality effects), amenity areas (due to changes in views, reduced amenity and access to PRoW), road users (due to changes in views and driver stress) and users of some footpaths and PRoW (due to the closure or diversion of some paths and impacts upon amenity including views), Tritlington Church of England First School (due to amenity effects) and farming businesses (due to loss of farmland and severance / disruption to farm holdings) are predicted during construction. There would also be a beneficial effect on ecological sites when considering the creation of habitats including woodland and semi-improved grassland.

Operation

Combined effects during operation would affect residents, surrounding amenity areas, road users, users of footpaths and PRoW, ecological sites and community facilities. The effects vary by receptor but include impacts on air quality, traffic, noise and changes to views. Some effects would be beneficial while others would be adverse. Significant combined effects are predicted for some residential properties (due to visual and noise effects) and users of some footpaths and PRoW (due to visual, amenity effects and changes to the journey time and severance).

UPDATED GUIDANCE

Some of Highways England's Design Manual for Roads and Bridges guidance documents, which inform the EIA were updated in 2019 and early 2020, by which time the EIA for the Scheme was largely complete. A sensitivity test has been undertaken either to demonstrate that the assessments reported in the ES are already compliant with the updated guidance, or to identify any changes to the conclusions of the assessments as a result of the updated guidance. The findings of the sensitivity test for Part A are summarised below for each topic:

- Air Quality – The updated guidance would not change the overall conclusions of the assessment.
- Noise and Vibration – The updated guidance would not change the conclusions of the assessment for construction noise. For operation, applying the new guidance would result in additional significant beneficial effects (reduction in noise levels) at 11 houses. There would also be the potential for one additional significant adverse effect at Northgate Farm if the noise barrier cannot be built at this location, however, it is likely that this property would be eligible for compensation under the Noise Insulation Regulations if this is the case.
- Landscape and Visual – The updated guidance would not change the overall conclusions of the assessment.
- Cultural Heritage – The updated guidance would not change the overall conclusions of the assessment.
- Biodiversity – The application of the updated guidance would not change the overall conclusions of the assessment.
- Road Drainage and the Water Environment – As part of the sensitivity test an assessment of the impact to groundwater levels and flows has been undertaken. Three new adverse effects were identified in relation to groundwater as a result of bridge foundations, culverts and basins. However, these effects would not be significant with the application of additional measures set out in the Outline CEMP.
- Geology and Soils – The application of the updated guidance would not change the overall conclusions of the assessment.
- Population and Human Health – The application of the updated guidance would not change the overall conclusions of the assessment. However, an existing adverse significant effect would increase in the level of significance.
- Material Resources – With the application of the updated guidance, a change to the significance of effect from materials consumption would likely occur, resulting in a significant adverse effect (previously assessed as not significant). However, with additional mitigation measures, as set out in the Outline CEMP, the effects would reduce to not significant and therefore the conclusions of the assessment would remain unchanged.
- Climate – The application of the updated guidance would not change the overall conclusions of the assessment.

- Combined Effects – The application of the updated guidance would not change the overall conclusions of the assessment.

PART B

AIR QUALITY

Overview

The air quality assessment considers Part B's potential to impact local and regional air quality during construction and once Part B is open to traffic (operation). Part B is not located within an Air Quality Management Area, which are areas that do not meet an air quality objective indicating that air quality in these areas requires improvement. Data from Northumberland County Council, the government and monitoring of nitrogen dioxide undertaken as part of the EIA show that existing air quality across the area of Part B is good, with no exceedances of national air quality objectives and low risk of non-compliance with the European limit for annual mean nitrogen dioxide.

Construction

Part B would temporarily affect local air quality as a result of emissions from construction activities. The potential air quality impacts due to construction traffic and temporary diversions are considered unlikely to cause a significant effect. However, measures would be put in place during construction to avoid the potential impacts from construction dust causing a significant effect. This would be done by incorporating industry best practice measures into the CEMP, which the main contractor would be required to follow. Examples of such measures include covering dusty materials, limiting construction vehicle speeds on site and machinery would be well maintained and in full working order.

Operation

Once Part B is open, there would be no new, or worsening of an existing exceedance of an air quality objective at relevant locations such as residential properties. Part B would pose a low risk of non-compliance with the European limit value for annual mean nitrogen dioxide.

There would be no effects on ecological sites (including, for example, designated sites and ancient woodland) due to operational air quality for Part B.

NOISE AND VIBRATION

Overview

The A1 between Alnwick and Ellingham runs through a rural landscape surrounded predominantly by agricultural land, with few dwellings close to the road. A noise survey was undertaken to measure the existing noise levels at various locations along Part B. There are no Noise Important Area - defined as areas along roads which have been identified through high-level noise mapping as having high noise levels - within the Scheme area, the closest being 3.8 km from the north of Part B.

Computer modelling has been undertaken using the data from the noise survey and data on the predicted future traffic flows to calculate the potential impact of Part B on the existing noise levels.

Construction

The main construction activities which could cause noise and vibration impacts include:

- Clearing the sites (e.g. removing vegetation)
- Earthworks
- Construction of the road
- Construction of the bridges
- Operation of the construction compounds.

The majority of the construction activities for Part B are linear activities (such as road surfacing) or short-term activities which are unlikely to impact individual receptors for prolonged periods of time. The two activities most likely to cause an impact are bridge construction and earthworks. Mitigation measures to reduce noise impact during construction are detailed in the Outline CEMP which accompanies the DCO application (which would be developed into the full CEMP by the main contractor before construction commences).This would include, for example, using plant, vehicles and machinery with the lowest noise levels, switching off equipment and machinery when not in use, using low noise construction methods and ensuring residents are informed of the works.

In areas where noise levels from construction are likely to be high enough to affect health and/or quality of life, additional measures would be implemented in order to minimise noise levels to acceptable levels. This includes measures such as programming works so the requirement for working outside normal hours is reduced and ensuring exposure to high noise or vibration levels does not exceed 10 days/nights in any consecutive 15 days/nights or does not exceed 40 days/nights in any consecutive 6 months and the offer of temporary rehousing where these durations need to be exceeded. With these measures in place, no significant effects during construction are predicted.

For the majority of the construction phase, there would be no significant effects resulting from vibration. The exception to this would be where percussive piling and heavy operations are to be used nearby to dwellings. Measures would be put in place, including limiting the duration of relevant construction activities to no more than 10 days/nights in any 15 consecutive days/nights and no more than 40 days/nights in any consecutive six months and the offer of temporary rehousing where these durations need to be exceeded. With these measures in place, no significant effects are anticipated.

Operation

Part B has included measures to reduce noise levels including installation of a low noise surface for the majority of the A1 between Alnwick and Ellingham. Part B would result in significant beneficial effects (reduction in noise levels) within the vicinity of Patterson

Cottage and West Link Hall Cottages. There would be no adverse significant effects associated with Part B.

LANDSCAPE AND VISUAL

Overview

The surrounding landscape is generally open with arable and pasture farmland and grassland, enclosed by hedgerows, walls and fences and crossed by the A1. A number of plantation woodlands and waterbodies are within the area surrounding Part B. Northumberland Coast Area of Outstanding Natural Beauty lies approximately 5 km to the east of Part B as shown on **Figure 6**. Alnwick Castle Registered Park and Garden is located approximately 900 m to the south-west of Part B. Areas of high and intermediate landscape value are located within 1 km of Part B (e.g. Kyloe Hills and Glendale). Several PRoW also run throughout Part B, connecting smaller hamlets and scattered communities. Isolated residential dwellings, commercial properties and several farms lie next to and within Part B. Wind turbines of Middlemoor and Wandylaw wind farms are a noticeable skyline feature of the landscape to the west of Part B. With the exception of the landscape immediately adjacent to the existing A1, the landscape is relatively tranquil in nature (refer to **Image 8**).

The assessment has considered impacts of Part B on the local landscape character and visual impacts for existing residents, road users and other users, such as WCH.

Image 8 - View Towards the Existing A1 from The Avenue, Illustrating the Variety of Land Uses within the Surrounding Landscape

Construction

The construction of Part B would affect both the landscape and visual amenity for residential properties, users of PRoW and people travelling along the A1.

Construction works would require the removal of landscape features such as hedges, trees and agricultural land, and demolition of two houses. This would result in the removal of features which contribute to the local landscape character and therefore there would be newly exposed views of the wider landscape and the construction activity. Temporary heaps of material from excavation, material storage and construction compounds would also generate changes in the landscape. New structures, embankments and signage would result in a reduction of the sense of openness in the predominantly agricultural landscape, specifically in the areas surrounding the new Charlton Mires Junction and Heckley Fence bridge (refer to **Image 9**). The assessment identifies significant landscape effects within three local landscape areas (Charlton Ridge Landscape Character Area, Rock Landscape Character Area and North East Farmed Coastal Plain Landscape Character Area) during construction. However, the construction impacts would be temporary and short term, and the effects would not be significant once mitigation planting measures have been established during operation.

These construction activities would result in temporary adverse visual impacts, which would be significant depending on the location of the visual receptors (visual receptors include residential properties, users of PRoW and people travelling along the A1). The presence of construction compounds, removal of vegetation, movement and activity of construction machinery and vehicles, artificial lighting, demolition works, traffic management equipment and the storage heaps of excavated material would all result in adverse visual impacts. Alteration to topography, due to the raised embankment at the Charlton Mires Junction and the new bridge at Heckley Fence, would restrict views for residents in nearby properties.

Measures to mitigate construction impacts include retaining existing vegetation wherever possible; using temporary soil mounds to restrict views of construction activities; locating machinery and material storage areas to avoid landscape and visual impacts; avoiding works during hours of darkness wherever possible and generally maintaining a tidy construction site.

Image 9 – View East from South Charlton, Illustrative of Nearby Properties

Operation

The assessment considers the landscape and visual effects, both when Part B opens and, in the future, (15 years after opening) to account for when the proposed landscape planting would have matured.

Once Part B is operational there would be some changes to the character of the surrounding areas, for example to the Landscape Character Areas affected during construction however, these changes would not result in any significant effects on landscape character as a result of Part B.

Due to the increased visual presence of the A1 and change of landform near the new Heckley Fence bridge and Charlton Mires Junction, the assessment predicts some significant visual effects on people living in properties with views to the east during the operation of Part B. Significant visual effects are also anticipated for users of several PRoW one year after Part B is operational however, none would experience significant effects 15 years later once mitigation planting has established.

Mitigation measures would be further developed during the detailed design process and form part of the landscape design of Part B. This would include, for example, minimising the loss of vegetation and replacement or planting of new vegetation and retaining views of local landmarks (including Heiferlaw Tower to the east, and Middlemoor and Wandylaw Moor Windfarms to the north west).

CULTURAL HERITAGE

Overview

The assessment considers the potential effects of Part B upon cultural heritage assets, such as archaeological remains, historic buildings or structures, conservation areas and historic landscapes.

A total of 111 heritage assets surround Part B including seven Scheduled Monuments (e.g. North Charlton Medieval Village), 51 Listed Buildings, one Registered Park and Garden (Alnwick Castle), one Conservation Area (the Rock Conservation Area) and 51 non-designated[1] assets. Within the Part B boundary there are three non-designated below ground assets, two non-designated built heritage assets, and nine historic landscape character types. Two Scheduled Monuments are located immediately adjacent the Part B boundary. There was also one area containing geophysical features which could have been of archaeological origin at West Linkhall, however no heritage assets were found during the trial trenching which was undertaken in August 2019 at this site. Trial trenching was also undertaken at North Charlton in October 2019, but similarly no heritage assets were found.

Construction

There would be some temporary impacts upon the setting of some Scheduled Monuments (North Charlton Medieval village and open field system, Camp at West Linkhall, Prehistoric Burial Mound, 420m north west of East Linkhall and Ellsnook Round Barrow, 175m north east of Heiferlaw Bridge), resulting in a significant effect on one Scheduled Monument (Camp at West Linkhall).

Construction activities could significantly affect sensitive below ground assets in the immediate vicinity of Part B by partially or wholly disturbing them during activities such as topsoil stripping or installation of drainage pipes. Potential effects on specific below ground assets are set out below, with the majority of the potential effects being significant:

- **Site of Bronze Age cist burials**. Located at the northern end of Part B adjacent to the existing highway. The known burials have been removed but there is potential for the presence of additional funerary remains around the site, and therefore potential for their disturbance. If present, they would be of high importance due to the relationship with the Scheduled Monument Prehistoric burial mound, 420m north west of East Linkhall.
- **Findspot of two flint flakes of Neolithic and Bronze Age date.** Located at Charlton Mires may be indicative of additional below ground archaeological remains in the area,

[1] Non-designated heritage assets are buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions, but which do not meet the criteria for designated heritage assets.

which would be damaged or destroyed (a permanent, direct impact) by ground disturbance work.

- **Earthworks east of Heckley House**. The site of the earthworks remains would be impacted by the establishment of the temporary access tracks required during the construction phase which could require the levelling of the land and the removal of the earthworks.
- **Currently unknown below ground archaeological remains**. There is a potential for currently unknown below ground heritage assets to be present throughout Part B of Prehistoric, Medieval, Post-Medieval, Industrial and Modern date based on the results of the Historic Environment Desk Based Assessment and geophysical survey. There is also the potential for unknown below ground archaeological remains at the construction compound.

No constructions work would be allowed within any of the Scheduled Monuments next to Part B. These measures are set out within the Outline CEMP.

A programme of archaeological trial trenching is presented in a Draft WSI which accompanies the DCO application. The trial trenching would take place before the construction works start. The aim of the trial trenching would be to determine the presence, extent, date, value and level of survival of the archaeological resource and to inform a subsequent programme of mitigation to be undertaken either before or during construction. A method statement would be devised in consultation with Northumberland County Council and potentially Historic England (depending on the nature of the assets) to mitigate for any unknown archaeological remains which may be encountered during construction. Should below-ground archaeological remains be found during construction, options would include preservation in-situ (which may require the redesign or diversion of elements of Part B, or reburial and protection) or those of lesser importance may be recorded in an archive. The mitigation measures adopted would be dependent on the nature and material of heritage assets identified.

The construction of Part B requires the demolition of Charlton Mires Farm during the construction phase; the farm is a non-designated heritage asset. A programme of Historic Building Recording is presented in a Draft WSI. The aim of the Historic Building Recording would be to ensure the preservation in record and archive of the Charlton Mires Farm prior to its demolition, resulting in a not significant effect.

A non-designated Milepost (North of Shipperton Bridge) would need to be removed from its current position and relocated once construction is complete. However, this would not result in a significant effect.

Construction works would temporarily impact the setting of some built heritage assets through noise and visual disturbance in the immediate vicinity of Part B and the construction compound. Mitigation measures to reduce these impacts are included in the Outline CEMP (as noted in the noise, landscape and air quality sections of this NTS). With these measures in place, the Grade II Listed Building Heckley House**,** the Grade II Listed Building Dovecote

to the east of Heckley Fence Farmhouse with Attached Wall (shown on **Image 10** and the Grade II Listed Building Patterson Cottage and the Grade II Listed Building West Linkhall Farmhouse would all be significantly affected. The construction works would also temporarily impact on the setting of non-designated heritage assets, for example, West Lodge and Drythropple, however this would not result in a significant effect.

Areas of historic landscape would be impacted through the loss of land required to construct Part B, resulting in the partial loss of an existing historic landscape type. Hedgerows with historic value would also need to be removed. However, no historic landscape areas are predicted to be significantly affected.

Image 10 - Grade II Listed Building Dovecote to the East of Heckley Fence Farmhouse with Attached Wall

Operation

There is a potential for adverse effects on the setting of below ground assets during the operation of Part B. During operation, there would be permanent impacts on the setting of the two Scheduled Monuments (North Charlton Medieval Village and open field system and Camp at West Linkhall), however the effects would not be significant.

There is also potential for below ground archaeological remains to be adversely impacted through changes in local hydrology, due to compaction, drying out or waterlogging of below ground archaeological remains. However, a robust drainage system would be provided for

Part B meaning that there would be no change in the local hydrology and, therefore, no significant effect.

There would also be permanent impacts on the setting of three Grade II Listed Buildings and one non-designated heritage assets. Impacts on built heritage assets during operation would be minimised through the use of visual screening, such as landscape planting. With these measures in place, the only significant effect would be on the Grade II Listed Building Dovecote to the east of Heckley Fence Farmhouse with Attached Wall, due to the visual intrusion of the bridge and the increase in noise and vibration of vehicles using the bridge and access road.

BIODIVERSITY

Overview

The assessment considered the impacts of Part B on the natural environment, including protected species (such as bats) habitats and ecologically designated sites.

The natural environment around Part B comprises a variety of grasslands, hedgerows, woodland, trees, scrub and waterbodies and rivers. There are several areas within 2 km of Part A designated for their environmental value, such as Longhoughton Quarry SSSI and Hulne Park LWS. Field surveys found various wildlife species including bat, badger, birds (including barn owl), aquatic invertebrates (insects which live in water), fish, and invasive species (such as Himalayan balsam).

Construction

Vegetation clearance to make way for working areas and construction of Part B would result in the loss of habitat such as woodland, hedgerows, grassland and running water. However, replacement habitat would be provided through the landscape planting as part of Part B, which would lead to beneficial significant effects in some instances. This clearance may result in the disturbance of birds because of increase noise levels. However, provided a series of measures are in place during construction, for instance reducing noise disturbance, there would be no significant effect on birds. These measures are detailed in the Outline CEMP.

Part B would result in the permanent loss of bats roosts associated with the demolition of buildings and the removal of woodland which contains bat boxes. However, as these bat boxes would be moved to nearby woodland and further bat boxes would be installed throughout suitable habitat across Part B, the effects would not be significant. Measures would also be put in place to limit disturbance to bats during construction.

Works to drainage culverts would result in both temporary and permanent loss of watercourse habitat which may also impact upon fish and aquatic invertebrates. Measures such as trapping sediment and seasonal restrictions on works for certain watercourses, would mitigate these effects. However, the effects relating to the permanent loss of watercourse habitat during the extension and realignment of a number of culverts would

remain significant for fish despite mitigation. There would be no significant effects on aquatic invertebrates.

The culvert works may also incur temporary disturbance or displacement during construction. Measures would be put in place, such as, lighting used for construction would be switched-off when not in use. With mitigation measures in place, there would be no significant effects on fish and aquatic invertebrates.

Operation

Once Part B is operational, there are only predicted to be impacts on biodiversity within the immediate vicinity of the new carriageway. However, hedge, shrub and tree planting has been designed to encourage birds, barn owl and bats to fly above the height of traffic in order to reduce these impacts. The inclusion of tall trees and shrubs has also been designed to discourage barn owls from feeding adjacent to the carriageway. This should reduce the number of collisions and deaths resulting from traffic, resulting in an effect that would not be significant.

Where existing culverts would be extended and they have ledges for mammal to pass under the road, the mammal ledges would also be extended. A naturalised bed has been incorporated into the design of a culvert along Kittycarter Burn, which would encourage fish passage and support aquatic life. Also, the southern tributary of Kittycarter Burn would be diverted and realigned to the east of the new Charlton Mires Junction. Realigning Kittycarter Burn would reduce the length of culvert required at this location.

The Biodiversity assessment also considered whether Part B would result in an overall loss of biodiversity. This concluded that Part B would result in a net loss of biodiversity through loss of running water habitat and hedgerows but is in line to deliver net gains of less threatened habitats and broadleaved woodland.

Although there would be changes in air quality pollutant levels in a small area immediately adjacent to Part B, these would not be significant.

Overall, with mitigation measures in place, it is not anticipated that there would be any significant effects on ecology once the road is open to traffic.

ROAD DRAINAGE AND THE WATER ENVIRONMENT

Overview

This assessment considers the impact of Part B on road drainage and the water environment, including surface and groundwater and flood risk.

The Part B road alignment would cross five watercourses and associated tributaries which are shown on **Figure 6** above. The majority of the geology of the area is permeable rock capable of supporting water at a local, rather than regional scale. Much of Part B is within areas of low flood risk, though some areas are within medium or high flood risk particularly the southern section of Part B near Denwick Burn.

Construction

Potential impacts during construction include impacts to the water quality of receiving watercourses and groundwater as a result of spillages of fuel, oil, chemicals, concrete or grout, and sediment from construction activities that could be washed into watercourses. Works within watercourses would also be needed to extend and create new culverts and channel realignments which could increase the amount of sediment in the water, increase the risk of pollutant spillage and as well as temporary loss of vegetation, damage to the riverbed and changes to may change the characteristics of the flow of groundwater and water within the watercourses. Also, whilst the works may cause increased localised flood risk, there are no properties located close to the proposed construction areas and therefore impacts are unlikely. Part B would have no significant effects on the surrounding water environment.

Measures to protect the water environment during construction are included in the Outline CEMP. Such measures include, for example, storing potentially polluting substances at least 10 m away from watercourses, locating topsoil storage areas away from watercourses and covering or seeding them until needed, refuelling vehicles away from water, checking construction plant regularly for oil and fuel leaks particularly when working near waterbodies, signing up to the Environment Agency's flood warning service and applying for appropriate consents. With these measures in place, it is not anticipated that there would be any significant effects on the water environment during construction.

Operation

Potential impacts during the operation of Part B include impacts from polluted surface runoff and the quality of nearby water features, changes in natural overland flow, increased rates and volumes of surface water runoff from increased impermeable areas and a permanent increase in flood risk. Part B includes mitigation measures such as a drainage strategy that incorporates drains and basins to collect surface water runoff from the highway and transport it to areas designed to manage the flow during periods of heavy rainfall to reduce flood risk. The drains and basins would also reduce sediment and pollutants entering the surrounding watercourses. In addition, the culverts have been designed to not increase flood risk. As mentioned in the biodiversity section, a culvert along Kittycarter Burn would have a naturalised bed and the southern tributary of Kittycarter Burn would be diverted and realigned to the east of the new Charlton Mires Junction. With these design and mitigation measures in place, there would be no significant adverse effects on the water environment.

GEOLOGY AND SOILS

Overview

The different types of land use and soil conditions within Part B have been surveyed to understand the quality of the existing soil and to assess the effects Part B would have on geology, soils, groundwater, mineral resource and surface water.

Of the agricultural areas in the Part B boundary, 5.7% lies within what is considered very good quality, whilst 23.5% is classified as good, 36.9% as moderate, and 2.3% as poor. Several areas of past coal mining have been identified within 250 m of Part B with historical coal mining shafts located along the southern end of Part B.

Potential sources of contamination have been identified along Part B including, for example, from the existing A1, infilled historical quarries, limekilns and coal pits.

Construction

The construction of Part B would temporarily require the use of agricultural land for construction compounds, construction working space and access, which could reduce the quality of the soil. This would not have a significant effect as the areas to be temporarily used would be reinstated to agricultural use following construction, in line with a 'Soil Handling Strategy' which would be developed to detail measures on how to preserve soil and land quality.

In addition to the use of agricultural land for construction compounds, the construction of Part B would result in the permanent loss of approximately 42.4 ha of agricultural land. There would be a significant effect due to the loss of 25.9 ha of agricultural land which is categorised as best and most versatile agricultural land. In addition, there would be a loss of 15.7 ha of agricultural land which is considered of moderate quality and 0.8 ha of land to be of poor quality, which would not result in a significant effect.

Potential sources of contamination have been identified in certain areas of Part B which could impact construction workers. However, the Outline CEMP includes measures such as suitable risk assessments and control measures (including respirators and monitors) for construction staff working in confined spaces (such as maintenance chambers associated with the drainage infrastructure) and procedures for encountering any unexpected contamination to ensure the safety of construction workers. With these measures in place, there would not be a significant effect on construction workers. Construction vehicles and the storage of fuels and chemicals also present the risk of leaks or spillages, as well as earthworks generating silt, which could enter surface watercourses and groundwater. However, the Outline CEMP includes measures to limit pollution to the surrounding water environment, such as, requirements for construction activities with a greater risk of spillage (such as vehicle maintenance areas) to be carefully located, refuelling to take place on impermeable surfaces, secure storage of fuels, oil and chemicals and loose materials would be covered when stored. Earthworks close to ponds and watercourses would also be carefully managed. With these measures in place, there would not be a significant effect on the surrounding water environment. Past coal mining areas former landfills and infilled pits, quarries or ponds present a risk of hazardous gas causing an explosion. However, all construction staff would be made aware of their presence, a risk assessment undertaken and control measures (such as using a gas alarms) put in place, therefore no significant effects are predicted. There is the potential of areas of poorly compacted or unstable ground

to exist within the Part B boundary which could cause collapse. All construction workers would be made aware of the findings of the ground investigation and the risk of instability hazards, and risk assessments prepared to protect workers and the general public. With these measures in place, there would not be a significant effect on construction works, the public and highway infrastructure. The construction of Part B would result in the sterilisation of mineral resources because of the permanent land take required. Approximately, 33 ha of mineral resource including sand and gravel, limestone and coal located within Mineral Safeguarding Areas would be affected by permanent land take. However, this would not result in significant effects on mineral resources.

Operation

Potential sources of hazardous ground gas would continue to be present during the operation of the Scheme. Hazardous gas could move to confined spaces, which could cause a suffocation or explosion risk for maintenance workers that need to access these spaces. Measures would be put in place, such as, appropriate training, preparation of risk assessments and implementation of controls measures (for example gas alarms and respirators). With these measures in place, there would not be a significant effect on human health.

During operation, there would be a risk that the surrounding water environment would become contaminated from leaks and spills from vehicles using the new A1. Measures would be implemented as part of the drainage design to prevent contamination to the water environment, meaning there would not be a significant effect.

POPULATION AND HUMAN HEALTH

Overview

The population and human health assessment considers the effects from Part B on communities, properties, land use, WCHs, vehicle travellers, the local economy and human health.

Alnwick is the largest community near to Part B, with various other smaller villages and hamlets in the area including Denwick, South Charlton, North Charlton and Rock. A number of residential properties and businesses are located adjacent or close to the existing A1. The Armstrong Household and Farming Museum is located in North Charlton. Within the area surrounding Part B there are also a number of open and recreational spaces that serve both Alnwick and the wider area, and that may be accessed from the A1. There are also community and recreational facilities near the construction compound. Part B would predominantly pass through agricultural land.

A network of PRoW extends within and around Part B, serving a wide range of users. In addition to the PRoW, there are footways and bus stops along sections of the existing A1.

Construction

Twelve PRoW are proposed to be permanently or temporarily closed during the construction period, and one may be temporarily affected by construction vehicles. This would increase community severance and / or require lengthy diversions. Measures would be put in place to reduce the effects upon WCHs, including, for example, Northumberland County Council, affected individuals and groups would be consulted on any temporary diversionary works or closure of WCH routes. The public would be informed of the nature, timing and duration of particular activities during the construction stage by newsletter or other forms of appropriate communication. A PRoW Management Plan would also be produced by the main contractor. This would have a significant adverse effect on most affected PRoW during the construction of Part B. Users of PRoW and existing non-designated footpaths that would remain open and would be near to construction works would experience a temporary reduction of journey pleasantness as a result of visual intrusion, noise and dust emissions. However, the effects are not anticipated to be significant with measures put in place as discussed in the other assessments to minimise impacts such as dust, noise and visual intrusion. The removal of three bus stops at Charlton Mires and along the B5341 would increase journey times for public transport users and reduce access to public transport. Temporary bus stops would be provided during construction. The exact location of these temporary bus stops has not been decided and they may cause significant effects for some users.

Charlton Mires Farm and East Cottage would be demolished during the construction of Part B to enable the new Charlton Mires Junction to be constructed. Overall, there would be a significant effect on residents of these properties. Access to other affected private residences would be maintained or temporarily diverted during construction with no further significant effects. A Construction Traffic Management Plan would be put in place to manage construction traffic and diversion routes.

Some minor beneficial economic effects have been identified from the creation of construction related jobs and support to local businesses through expenditure from direct spend on materials for Part B, although these effects would not be significant.

Users of Greensfield Moor Caravan Park which is located near the construction compound may be affected by temporary reduced amenity. However, the effects are not anticipated to be significant with measures put in place as discussed in the other assessments to minimise impacts such as dust, noise and visual intrusion. The community is expected to continue to access community facilities and recreational facilities during the construction of Part B, so no significant effects are predicted. There may be some reduction in access for commercial properties during construction of Part B, but measures would be put in place to reduce the impacts of this and maintain access where practical, including to farm holdings and agricultural land.

There is not likely to be a significant effect on most of the farm holdings as a result of Part B. However, there is likely to be permanent land take / disruption to East Cottage farm

holdings, and both temporary and permanent severance / land-take / disruption to Charlton Mires Farm holdings, including impacts on the success of farm businesses, as a result of Part B. The effects on these two farm holdings would lead to a significant adverse effect due to a range of factors, including temporary and permanent loss of land and buildings, changes in access and changes to soil quality at the affected farms. A worst case temporary significant effect has been assumed for the tenants using land at the Lionheart Enterprise Park Compound during construction. Some measures would be implemented to reduce negative effects on farm businesses where possible, such as the new Heckley Fence overbridge which would allow farm traffic to move across the A1 safely.

During construction, traffic management systems and diversion routes may lead to some traffic being rerouted onto local roads. This would be managed by a Construction Traffic Management Plan which would include measures such as clear signage and clear notification of any diversions. There is likely to be an increase in confusion and disruption on the road network during construction with these measures in place, leading to an overall increase to the level of driver stress experienced along the A1.

Effects upon human health would be managed in line with good practice measures to manage air quality, noise and flooding. This would include measures such as controlling dust and wheel washing to reduce impacts on air quality, careful management of the timing of construction activities to reduce the impact of noise and vibration and ensure good storage of fuels away from watercourses to prevent water pollution. Effects on human health during construction are therefore not expected to be significant.

Operation

Once Part B is built, WCHs would no longer be able to cross the A1 at the same level as the road, as part of Part B's aim to improve safety; instead, connectivity would be maintained by new WCH provisions on the bridges at the new Charlton Mires Junction and Heckley Fence. Therefore, some PRoW would be permanently diverted to these crossings or would be closed. These would be detailed in the PRoW Management Plan, to be produced by the main contractor. The changes would result in some significant adverse effects in relation to severance of routes and changes to access for bus stops. However, improved safety would benefit residents, despite slightly increasing journey times. There would be no significant changes to amenity along the diverted PRoW. The removal of three bus stops at Charlton Mires and along the B5341 is likely to increase journey times and reduce access to public transport for some local residents travelling via public transport, which could result in a significant effect.

Access to existing residential properties would change which would increase journey times but, in most instances, would provide safer access. Overall, this effect is not considered to be significant. Access to commercial properties would be maintained during the operation of Part B, which would not result in a significant effect.

There would be significant effects on Charlton Mires Farm and East Cottage during operation due to land take and impacts on farm businesses, as described above.

Part B would benefit vehicle users because Part B would improve traffic flows, reduce fear of accidents and decrease driver stress, but this would not result in a significant effect.

Once operational, the operation of Part B, including change in traffic flows, would not have a significant effect on human health, relating to noise, air quality pollution or flooding.

MATERIAL RESOURCES

Overview

The material resources assessment considers the impacts and effects of Part B on the consumption of material resources (including products offering sustainability benefits, recycled or renewable sources) and the generation and use of material recovered from site. It also considers the production and disposal of waste to landfill.

The current operation and maintenance of the existing A1 assets consumes a small number of components such as signage, steelwork for replacement barriers, as well as asphalt for minor re-surfacing for routine works and repairs of the highway. Minimal volumes of waste from such routine maintenance activities and other activities, such as littering, are generated.

Construction

Construction of Part B would require materials such as steel, concrete and asphalt to be used which may consume materials which are in limited supply. Waste would also be generated from activities such as demolition and provision of the additional carriageway, which, if sent to landfill, would impact upon regional landfill capacity.

The consumption of construction materials for Part B would not have a significant effect on the local, regional and national market resources; that is, there would be sufficient materials available to construct Part B. It is intended that the majority of material from earthworks, demolition of existing structures, for the tie-in of new structures and road surfacing for the widening works would be, wherever possible, reused on-site, or recovered and diverted from landfill. Although, any wastes which cannot be diverted from landfill, such as contaminated earth material, would have an adverse impact on landfill capacity in the region.

A number of options for reusing excavated material are being explored. Excavated material not required on Part A would be re-used in the construction of Part B, if it is suitable and/or exported for use to the Applicant’s other schemes in the North East. This material would be stored temporarily within Part A until the start of construction of these other schemes.

The Outline CEMP states the requirement for the main contractor to produce management plans to monitor material reuse and to manage and monitor site waste to reduce waste and potential harm to the environment. Based upon estimated quantities of required material, and the capacity of the regional landfill site to accept the waste, the effect of Part B is not considered to be significant.

Operation

The operation and maintenance of Part B assets would require only a small number of components for example, signage and steelwork for replacement barriers. Similarly, there would only be small volumes of waste generated for example from routine bridge maintenance. As such operational effects are not considered significant.

CLIMATE

Overview

The climate assessment considers how Part B could affect climate, for instance through the release of GHG during construction and operation which would contribute to global warming and climate change. GHGs are natural and man-made gases occurring in the atmosphere, which retain the sun's energy within the earth's atmosphere leading to changes in climate. The assessment also considers the vulnerability of Part B to climate change, in particular impacts on Part B from extreme weather and long-term climate change during construction and operation. The assessment considers that GHG emissions occur constantly and widely due to human and natural activity, therefore, the assessment only considers where Part B results in additional or avoidable emissions compared to the existing scenario and its assumed evolution.

Construction

During construction, the main source of GHG emissions would be carbon inherently within construction materials, the majority of which relates to bulk materials including, for example, asphalt, aggregate and steel. Other sources include waste generation, disposal and the transportation of materials. Measures to mitigate the generation of GHG are set out in the Outline CEMP and include, amongst others, minimising waste and maximising material reuse, sourcing materials locally to minimise transportation, re-using material from earthworks and demolition and using pre-fabricated elements and off-site construction to optimise efficiency. The construction of Part B is considered to not have a significant effect on GHG emissions. Furthermore, the total estimated GHG emissions arising from Part B (both construction and operation) would be approximately 0.003% of the overall UK National Carbon Budget.

The climate vulnerability assessment has identified that hazards including extreme weather events (such as extreme rainfall, drought, wetter winters and flooding, extreme temperatures and wind) have the potential to impact construction workers, business continuity, materials and equipment and structures. However, when considered with Part B's resilience and the mitigation measures below, no significant effects are predicted.

Mitigation measures would be implemented during construction to manage the risks, for example, avoiding concreting in middle of day and avoiding working at heights or use of cranes during high wind events.

Operation

During operation, the main source of GHG emissions would be from the vehicles using Part B. Another, lesser, source of emissions is those associated with the repair (e.g. resurfacing) and replacement of Part B. However, as with the construction phase, although the operation of Part B is predicted to have an adverse impact upon GHG emissions, the magnitude of GHG emissions and the context of the Scheme, using professional judgement, it is considered that the effect of Part B is not significant.

The potential impacts of climate change to Part B are similar to that during construction. The impacts include, for example, damage to the carriageway, bridge structures from extreme weather conditions (rainfall, drought, storms and wind), damage to road infrastructure, unsafe driving conditions due to extreme weather and associated damage and hazards (such as falling trees and dust), as well as delays and disruption to users due to increased rainfall. However, no significant effects are predicted when considering Part B's resilience and mitigation measures.

COMBINED EFFECTS

Overview

As for Part A, an assessment has been undertaken for Part B to consider how multiple impacts may affect a receptor at the same time.

Construction

Combined effects during construction would affect receptors such as residents, road users, users of PRoW, ecological sites, commercial properties and agricultural land. The anticipated combined effects vary for each receptor, but include such effects as changes in air quality, increased noise levels, loss of trees and vegetation, and changes in views, amongst others. Mitigation measures for Part B, for instance maintaining construction machinery and vehicles to reduce noise generation, suitable material storage away from receptors, and the adherence to strict working hours (among others) would minimise the potential for combined effects. However, significant adverse combined effects upon some residential receptors (due to the demolition of houses, visual, noise, air quality, as well as population and human health effects), farming businesses (due to loss of farmland and severance / disruption to farm holdings), road users (due to changes in views and driver stress) and users of some footpaths and PRoW (due to the closure or diversion of some paths and impacts upon amenity) are predicted during construction. There would also be an adverse combined effect on ecological sites due to the loss of habitat but also a significant beneficial effect on ecological sites as a result of habitat creation.

Operation

Combined effects during operation would affect residents, road users, users of PRoW, ecological sites and commercial properties. The effects vary by receptor but include, for example, impacts on air quality, noise and changes to views. Some effects would be beneficial while others would be adverse. Significant combined effects are predicted for

some residential receptors (due to visual, noise, air quality, population and human health effects) and users of some footpaths and PRoW (due to the closure or diversion of some paths and impacts upon amenity).

UPDATED GUIDANCE

Some of Highways England's Design Manual for Roads and Bridges guidance documents, which informed the EIA were updated in 2019 and early 2020, by which time the EIA for the Scheme was largely complete. A sensitivity test has been undertaken either to demonstrate that the assessments reported in the ES are already compliant with the updated guidance, or to identify any changes to the conclusions of the assessments as a result of the updated guidance. The findings of the sensitivity test for Part B are summarised below for each topic:

- Air Quality – The updated guidance would not change the overall conclusions of the assessment.
- Noise and Vibration – The updated guidance would not change the overall conclusions of the assessment. However, during operation an existing beneficial significant effect would increase in the level of significance.
- Landscape and Visual – The updated guidance would not change the overall conclusions of the assessment.
- Cultural Heritage – The updated guidance would not change the overall conclusions of the assessment.
- Biodiversity – The updated guidance would not change the overall conclusions of the assessment.
- Road Drainage and the Water Environment – As part of the sensitivity test an assessment of the impact to groundwater levels and flows has been undertaken. Three new adverse effects were identified in relation to groundwater as a result of bridge foundations, culverts and basins. However, these effects would not be significant with the application of additional measures set out in the Outline CEMP.
- Geology and Soils – The effect on agricultural land classed as Grade 3b (moderate quality) was previously assessed as not significant would be assessed as significant with the new guidance. However, the conclusions of the assessment would not change because all classes of agricultural soils were previously assessed as significant overall.
- Population and Human Health – The application of the updated guidance would not change the overall conclusions of the assessment.
- Material Resources – With the application of the updated guidance, the conclusions of the assessment would remain unchanged.
- Climate – The application of the updated guidance would not change the overall conclusions of the assessment.
- Combined Effects – With the application of the updated guidance, the overall conclusions of the assessment would remain unchanged.

CUMULATIVE EFFECTS OF THE SCHEME

OVERVIEW

An assessment of cumulative and combined effects of the Scheme as a whole (i.e. Part A and Part B together) has been undertaken to consider how the Scheme may result in significant environmental effects. The following types of cumulative and combined effects have been assessed:

- **Within Topic Combined Effects**: Considers the environmental effects of the Scheme as a whole (i.e. Part A and Part B together) for each environmental topic.
- **Cross Topic Combined Effects**: Considers the environmental effects of the Scheme as a whole (i.e. Part A and Part B together) across the environmental topics.
- **Cumulative effects**: Considers the impacts of the Scheme (i.e. Part A and Part B together) interacting with impacts from other proposed developments that are near the relevant receptor. For example, a residential receptor may be affected by noise from the Scheme as well as noise from another proposed development. The construction and operation of the Scheme would not have a significant effect on human health in relation to noise, air quality pollution or flooding.

Within Topic Combined Effects

For the majority of environmental topics, it was determined that an assessment of the Scheme had been covered in the individual assessments for Part A and Part B. This is because Part A and Part B are approximately 15 km apart, which means the combined environmental effects are limited. However, separate assessments were carried out using traffic data for the Scheme and where it was identified that additional effects could occur. A summary of the results of these separate assessments is set out below:

- Air Quality – The Scheme would not have a significant effect on air quality.
- Noise and Vibration – The Part A element of the Scheme would result in three significant adverse effects and 16 significant beneficial effects (including 13 houses and three other sensitive receptors) when considering the mitigation already proposed for Part A. The Part B element of the Scheme would result in four significant beneficial effects. Several road links outside the Part A and Part B elements of the Scheme are predicted to experience significant beneficial changes in noise levels.
- Biodiversity - The operation of the Scheme would not have significant effects on ecological receptors due to changes in air quality.
- Population and Human Health – The Scheme would benefit vehicle users because it would improve traffic flows, reduce fear of accidents and decrease driver stress, but this would not result in a significant effect. Some minor beneficial economic effects have been identified from the creation of construction related jobs and support to local businesses through expenditure from direct spend on materials for the Scheme, although these effects would not be significant. The construction and operation of the Scheme would not result in significant effects on human health in relation to noise, air quality pollution or flooding.

- Material Resources – The Scheme would not have a significant effect as a result of using materials and disposing of waste to landfill during both construction and operation.
- Climate – When considering the mitigation measures set out for Part A and Part B, the Scheme would not have a significant effect for GHG emissions during the construction and operation of the Scheme.

Updated Guidance

Some of Highways England's Design Manual for Roads and Bridges guidance documents, which informed the EIA were updated in 2019, by which time the EIA for the Scheme was largely complete. A sensitivity test has been undertaken either to demonstrate that the assessments reported in the ES are already compliant with the updated guidance, or to identify any changes to the conclusions of the assessments as a result of the updated guidance. The findings of the sensitivity test for the Scheme are summarised below for each topic:

- Air Quality - The updated guidance would not change the overall conclusions of the assessment.
- Noise and Vibration – For the Part A element of the Scheme, applying the new guidance would result in additional significant beneficial effects (reduction in noise levels) at 11 houses. There would also be the potential for one additional significant adverse effect at Northgate Farm if the noise barrier cannot be built at this location, however, it is likely that this property would be eligible for compensation under the Noise Insulation Regulations if this is the case. The updated guidance would not change the overall conclusions of the assessment for the Part B element of the Scheme. However, one significant effect would increase in the level of significance. There would be no additional significant adverse effects on road links outside the Part A and Part B elements of the Scheme with the updated guidance.
- Biodiversity - The updated guidance would not change the overall conclusions of the assessment.
- Population and Human Health - The application of the updated guidance would not change the overall conclusions of the assessment.
- Material Resources – With the application of the updated guidance, a change to the significance of effect from materials consumption would likely occur, resulting in a significant adverse effect (previously assessed as not significant). However, with additional mitigation measures, as set out in the Outline CEMP, the effects would reduce to not significant and therefore the overall conclusions of the assessment would not change.
- Climate - The application of the updated guidance would not change the overall conclusions of the assessment.

Cross Topic Combined Effects

The combined effects have been assessed for Part A on its own and Part B on its own. The results of these individual assessments are reported in the sections above. Combined

effects of the Scheme as a whole (i.e. Part A and Part B together) that are additional to the individual assessments are discussed below.

Combined effects during construction arising from use of the Main Compound for Part A and additional effects due to construction traffic moving between the Main Compound and Part B on some residential receptors near the Main Compound. The combined effects would be due to additional impacts from changes to air quality, visual amenity, noise pollution and community severance. The Scheme, including the use of the Main Compound, would also affect residential receptors due to impacts on human health (such as noise pollution) and have positive effects on the economy and employment due to job generation. Mitigation measures would be put in place for the Scheme, including, for instance maintaining construction machinery and vehicles to reduce noise generation, suitable material storage away from receptors, and the adherence to strict working hours (among others). With these measures in place, there are anticipated to be significant adverse and not significant beneficial effects on residential receptors near the Main Compound.

Scheme Cumulative Effects

A review of the other development proposals surrounding the Scheme was undertaken to identify which may result in a cumulative effect. The search area was based on the likely distances from which they could influence each environmental topic. Consideration was given to whether the Scheme and the other development have any receptors in common, and whether the effects would happen at the same time.

A total of 43 other developments were identified for the cumulative assessment. No significant cumulative effects between the Scheme and other proposed developments have been identified during construction and operation.

Other cumulative impacts with other developments are predicted but they either did not change the assessment of effects (i.e. the effects would remain the same as when the Scheme was assessed on its own) or found not to be significant, when considering the degree of impact and sensitivity of receptors.

THE APPLICATION DOCUMENTS

The ES and other application documents are available to download, free of charge, from the Planning Inspectorate's website: https://infrastructure.planninginspectorate.gov.uk/projects/north-east/a1-in-northumberland-morpeth-to-ellingham/?ipcsection=docshttps://infrastructure.planninginspectorate.gov.uk/projects/north-east/a1-northumberland-morpeth-to-felton/?ipcsection=docs

You can also find information about the Scheme on the Highways England website: https://highwaysengland.co.uk/projects/morpeth-to-ellingham-dualling/

You will also be able to view the ES and this NTS online during the pre-examination and examination period at the following location:

Due to the COVID-19 Epidemic it is not currently possible to deposit documents locally. We will advise of any updates on the Project Website should the situation change https://highwaysengland.co.uk/programmes/a1-in-northumberland/. Copies of the Environmental Statement can also be found at: https://infrastructure.planninginspectorate.gov.uk/projects/north-east/a1-in-northumberland-morpeth-to-ellingham/

The Section 56 Notice (Section 56 is '*notifying persons of accepted application'*) which will be published on acceptance in the local newspapers and will confirm the deposit point locations.

If you are unsure how to, or require assistance in seeing a copy of the documents please email: A1inNorthumberlandPCF@highwaysengland.co.uk

Once deposit points are established, copies of the NTS will be available to take away from those locations, free of charge.

Alternatively, copies of the NTS can be obtained by contacting the project team using the details below:

a1innorthumberland@highwaysengland.co.uk

Alternatively, you can write to the project team at the following address:

A1 in Northumberland Project Team

Lateral, 8 City Walk

Leeds

LS11 9AT

Copies of the complete ES in electronic format on CD can be obtained from the same address free of charge. Paper copies of the ES are available at a cost as follows:

- Complete ES (Volumes 1 – 8) - £ 5,240
- Volume 1 (ES introductory chapters) setting out an introduction to the Scheme, a description of the Scheme, an assessment of the alternatives considered and a description of the environmental assessment methodology - £300
- Volume 2 (ES main text for Part A) setting out the environmental assessment in Chapters - £500
- Volume 3 (ES main text for Part B) setting out the environmental assessment in Chapters - £500
- Volume 4 setting out the assessment of cumulative effects as a result of the Scheme and a summary of environmental effects for the Scheme - £100
- Volume 5 (ES figures for Part A) including drawings, photos and other illustrative material - £500
- Volume 6 (ES figures for Part B) including drawings, photos and other illustrative material - £500
- Volume 7 (ES technical appendices for Part A) including the technical appendices that accompany the assessments set out in Volume 2 - £ 1,420
- Volume 8 (ES technical appendices for Part B) including the technical appendices that accompany the assessments set out in Volume 3 - £ 1,420

Prices include VAT at 20% and UK postage. Please contact the project team using the details above for further details regarding payment methods.

WHAT HAPPENS NEXT?

An application for a DCO for the Scheme has been submitted to the Inspectorate, who will determine the application on behalf of the Secretary of State. If granted the proposed DCO will give the Applicant, the legal power to construct and operate the Scheme.

During the first 28 days (acceptance period) from when the draft DCO is submitted, the Inspectorate will make the application documents available to download from their website and will contact all relevant local authorities to confirm that the pre-application consultation has been adequately carried out and all the necessary documents have been provided. By the end of the acceptance period the Inspectorate will confirm whether the application has been accepted for examination.

Once the Inspectorate confirms that the application has been accepted for examination, the pre-examination phase will begin. During this phase interested parties can register their interest and make a relevant representation to the Inspectorate. The pre-examination phase ends following the Preliminary Meeting, which registered interested parties will be invited to attend. The Inspectorate will appoint an Inspector/s (the Examining Authority) on behalf of

the Secretary of State. At the Preliminary Meeting the Examining Authority will decide the key issues that will be taken into account during the examination of the application.

The examination period is held over a period of up to six months, during which time a series of hearings are held to help address the key issues. Registered interested parties may attend the hearings, make statements and ask questions. Following the conclusion of the examination the Examining Authority has three months to provide a recommendation to the Secretary of State on whether the DCO should be granted. The Secretary of State then has a further three months to come to a decision. Once the decision is published, there is a six-week High Court Challenge period. If there are no challenges to the decision, it becomes final.

This document is also available on our website at www.gov.uk /highways

If you have any enquiries about this document A1inNorthumberland@highwaysengland.co.uk or call 0300 470 4580*.

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