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Yorkshire Green Energy Enablement (GREEN) Project

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Version History

Date	Version	Status	Description/Changes
01/11/2022	A	Final	First Issue

12. Traffic and Transport

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12. Traffic and Transport

12.1 Introduction

12.1.1 This chapter presents the assessment of the likely significant effects of the Yorkshire Green Energy Enablement Project (referred to in this ES as Yorkshire GREEN or the 'Project') with respect to traffic and transport. It should be read in conjunction with **Chapter 3: Description of the Project (Volume 5, Document 5.2.3)** and with respect to relevant parts of the following chapters:

- **Chapter 13: Air Quality, (Volume 5, Document 5.2.13)** (due to the use of transport data to inform air quality assessments);
- **Chapter 14: Noise and Vibration, (Volume 5, Document 5.2.14)** (due to the use of transport data to inform noise assessments);
- **Chapter 15: Health and Wellbeing, (Volume 5, Document 5.2.15)** (due to potential effects on health resulting from changes in traffic and associated noise and air quality emissions); and
- **Chapter 16: Socio-economics, (Volume 5, Document 5.2.16)** (due to effects of the Project on Public Rights of Way (PRoW)).

12.1.2 This chapter describes:

- the legislation, policy and technical guidance that has informed the assessment (**Section 12.2**);
- consultation and engagement that has been undertaken and how comments from consultees relating to traffic and transport have been addressed (**Section 12.3**);
- the methods used for baseline data gathering (**Section 12.4**);
- overall baseline (**Section 12.5**);
- embedded measures relevant to traffic and transport (**Section 12.6**);
- the scope of the assessment for traffic and transport (**Section 12.7**);
- the methods used for the assessment (**Section 12.8**);
- the assessment of traffic and transport effects (**Section 12.9**);
- assessment of cumulative (inter-project) effects (**Section 12.10**); and
- a summary of the significance conclusions (**Section 12.11**).

12.1.3 This chapter is supported by the following appendices:

- **Appendix 3F (Volume 5, Document 5.3.3F): Construction Traffic Management Plan (CTMP)**;
- **Appendix 3G (Volume 5, Document 5.3.3G): Public Rights of Way Management Plan (PRoWMP)**; and
- **Appendix 12A (Volume 5, Document 5.3.12A): Traffic Generation Calculations.**

Project overview

12.1.4 The Project is divided into six sections for ease of reference as indicated in **Figure 1.2, Volume 5, Document 5.4.1**. The Project will comprise both new infrastructure and works to existing transmission infrastructure and facilities as follows.

- Section A (Osbalwick Substation): Minor works at the existing Osbalwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry and works to one existing pylon. All substation works would be within existing operational land.
- Section B (North west of York Area): Works would comprise:
 - reconductoring of 2.4km of the 400kV Norton to Osbalwick (2TW/YR) overhead line and replacement of one pylon on this overhead line;
 - the new 400kV YN overhead line (2.8km), north of the proposed Overton Substation;
 - the new Shipton North and South 400kV cable sealing end compounds (CSECs) and 230m of cabling to facilitate the connection of the new YN 400kV overhead line with the existing Norton to Osbalwick YR overhead line;
 - a new substation (Overton 400kV/275kV Substation) approximately 1km south of Shipton by Beningbrough;
 - two new sections of 275kV overhead line which would connect into Overton Substation from the south (the 2.1km XC overhead line to the south-west and the 1.5km SP overhead line to the south-east); and
 - works to 5km of the existing XCP Poppleton to Monk Fryston overhead line between Moor Monkton in the west and Skelton in the east comprising a mixture of decommissioning, replacement and realignment. To the south and south-east of Moor Monkton the existing overhead line would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) would be permanently removed. A 2.35km section of this existing overhead line permanently removed between the East Coast Mainline (ECML) Railway and Woodhouse Farm to the north of Overton.
- Section C (Moor Monkton to Tadcaster): Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section D (Tadcaster Area): Two new CSECs (Tadcaster East and West 275kV CSECs) and approximately 350m of cable would be installed approximately 3km south-west of Tadcaster and north-east of the A64/A659 junction where two existing overhead lines meet. One pylon on the existing 275kV Tadcaster Tee to Knaresborough (XD) overhead line would be replaced.
- Section E (Tadcaster to Monk Fryston): Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line would comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section F (Monk Fryston Area): A new substation would be constructed to the east of the existing Monk Fryston Substation which is located approximately 2km south-west of the village of Monk Fryston and located off Rawfield Lane, south of the A63.

A 1.45km section of the 275kV Poppleton to Monk Fryston (XC) overhead line to the west of the existing Monk Fryston Substation and south of Pollums House Farm would be realigned to connect to the proposed Monk Fryston Substation. East of the existing Monk Fryston Substation the existing 4YS 400kV Monk Fryston to Eggborough overhead line, which currently connects to the existing substation, would be reconfigured to connect to the proposed Monk Fryston Substation.

- 12.1.5 A more detailed description of the Project design and construction methodology can be found in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3**, of the ES.

12.2 Relevant legislation, planning policy and technical guidance

- 12.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to traffic and transport. Further information on policies relevant to the Project is provided in **Chapter 5: Legislation and policy overview, Volume 5, Document 5.2.5** of the ES.
- 12.2.2 The assessment has been undertaken in accordance with relevant transport related planning policy and guidance at the national, regional and local level. This has helped to identify any requirements which the Project needs to consider, aiding the process of defining the scope of assessment and informing the identification of local issues.
- 12.2.3 There is no legislation specifically relevant to this assessment.

Planning policy

- 12.2.4 A summary of the relevant current national and local planning policy is given in **Table 12.1**. It is noted that in September 2021, the Department of Business, Energy and Industrial Strategy (BEIS) consulted upon a review of the suite of energy National Policy Statements (NPS) with consultation closing on 29 November 2021. The energy NPS were reviewed to reflect the policies and broader strategic approach set out in the December 2020 Energy White Paper and to ensure that a planning framework was in place to support the infrastructure requirement for the transition to net zero. There are no substantive changes with regard to the Traffic and Transport policies within the draft revised energy NPSs that are considered to be relevant to the Project.

Table 12.1 - Planning policy relevant to the traffic and transport assessment

Policy	Policy Context
National planning policy	
Overarching National Policy Statement for Energy (EN-1) ¹	<p>Paragraph 5.13.2</p> <p>The consideration and mitigation of transport impacts is an essential part of Government’s wider policy objectives for sustainable development as set out in section 2.2 of NPS EN-1. This is addressed in Section 12.6 of this document.</p> <p>Paragraph 5.13.3</p> <p>If significant transport effects are likely the ES should be accompanied by a Transport Assessment, developed in consultation with National Highways (NH) (formerly Highways England) and Local Highways Authorities. As agreed with the Planning Inspectorate a Transport Assessment is not required (as set out in Table 12.3 of this document).</p> <p>Paragraph 5.13.4</p> <p>Where appropriate, the applicant should prepare a Travel Plan and provide details of proposed measures to improve access by public transport, walking and cycling to mitigate transport impacts.</p> <p>Paragraph 5.13.6</p> <p>The Secretary of State (SoS) should ensure the applicant has sought to mitigate substantial impacts on transport infrastructure. Where mitigation is insufficient the SoS should consider including requirements to mitigate such effects. This is addressed in Section 12.6 of this document.</p> <p>Paragraph 5.13.11</p> <p>Where substantial HGV traffic is likely to occur the SoS may attach requirements to control numbers and routing of HGV movements, make sufficient provision for HGV parking and make arrangements for reasonably foreseeable abnormal disruption.</p>
National Planning Policy Framework (NPPF) ²	<p>If significant transport effects are likely, then a Travel Plan is required along with a Transport Statement or Transport Assessment. As agreed with the Planning Inspectorate a Transport Assessment is not required (Table 12.3).</p>

¹ Department of Energy and Climate Change (2011), Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed July 2022)

² Ministry of Housing, Communities and Local Government (2021). The National Planning Policy Framework (NPPF). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004408/NPPF_JULY_2021.pdf (Accessed July 2022)

Policy	Policy Context
Local planning policy	
Harrogate District Local Plan 2014-2035 ³	<p>Policy TI1 (Sustainable Transport) To deliver sustainable, safe and reliable transport the council welcomes working in partnership with all the relevant stakeholders.</p> <p>Policy TI2 (Protection of Transport Sites and Routes) Transport sites and routes will be safeguarded to make sure that any future expansion of these infrastructures is not affected.</p> <p>Policy TI3 (Parking Provision) Promotes sustainable transport modes, sets out parking policy and standards.</p> <p>Appendix 3F (Volume 5, Document 5.3.3F): Construction Traffic Management Plan (CTMP) sets out the proposed HGV access strategy which considers the protection of transport sites and routes.</p>
Hambleton Local Development Framework: Core Strategy Development Plan Document, 2007 ⁴	<p>Policy DP2 (Securing Developer Contributions) To ensure the achievement of sustainable development, contributions from developers will be sought if necessary.</p> <p>Policy DP3 (Site Accessibility) Development should have provision for sustainable forms of transport. A Travel Plan should be prepared and implemented.</p> <p>A Travel Plan has not been prepared. Due to the nature of the Project the management of construction traffic and staff is a more direct effect that needs to be managed and mitigated. A CTMP has been prepared to cover these issues as Appendix 3F (Volume 5, Document 5.3.3F).</p> <p>Policy DP4 (Access for All) Development must ensure safe and easy access for all potential users.</p> <p>Appendix 3F (Volume 5, Document 5.3.3F) CTMP has been prepared to set out details of accesses on the Project and the consultation with the local highways authorities to prove for safe and easy access for all users.</p>

³ Harrogate Borough Council (2020). Harrogate District Local Plan 2014-2035. (online). Available at: <https://www.harrogate.gov.uk/planning-policy-guidance/harrogate-district-local-plan-2014-2035> (Accessed 31 March 2021).

⁴ Hambleton District Council (2007). Local Development Framework Development Plan Document Core Framework. (Online) Available at: <https://www.hambleton.gov.uk/downloads/file/1667/core-strategy-local-development-framework-development-plan-document> (Accessed July 2022).

Policy

Policy Context

Hambleton Local Plan – Adopted February 2022⁵

A proposal will only be supported where it is demonstrated that:

- a. it is located where the highway network can satisfactorily accommodate, taking account of planned improvements, the traffic generated by the development and where the development can be well integrated with footpath and cycling networks and public transport;
- b. where transport improvements are necessary proportionate contributions are made commensurate with the impact from the proposed development;
- c. it seeks to minimise the need to travel and maximise walking, cycling, the use of public transport and other sustainable travel options, to include retention, where relevant, and enhancement of existing rights of way;
- d. any potential impacts on the strategic road network have been addressed having regard to advice from early engagement with Highways England (now NH);
- e. highway safety would not be compromised and safe physical access can be provided to the proposed development from the footpath and highway network;
- f. adequate provision for servicing and emergency access is incorporated;
- g. appropriate provision for parking is incorporated, taking account of;
 - i. highway safety and access to, from and in the vicinity of the site;
 - ii. the accessibility of the development to services and facilities by walking, cycling and public transport;
 - iii. the needs of potential occupiers, users and visitors, now and in the future;
 - iv. the amenity of existing and future occupiers and users of the development and nearby property; and
 - v. opportunities for shared provision, where locations and patterns of use allow.

The issues above are addressed as part of the assessment set out in this chapter in **Section 12.9** and supported by **Appendix 3F (Volume 5, Document 5.3.3F): CTMP** and **Appendix 3G (Volume 5, Document 5.3.3G): PRowMP**.

⁵ Hambleton District Council (2022) Hambleton Local Plan (Online). Available at: <https://www.hambleton.gov.uk/downloads/file/2745/hambleton-local-plan-final-february-2022> (Accessed July 2022)

Policy	Policy Context
Saved Policies of the York Local Plan, 2005 ⁶	<p>Policy T2a (Existing Pedestrian/Cycle Networks) Planning permission will not be granted if the Project causes any inconvenience for non-motorists unless sustainable alternative routes will be provided.</p> <p>Policy T5 (Traffic and Pedestrian Safety) Assurance for traffic and pedestrian safety should be provided by implementing appropriate measures suitable for the local area and existing road layouts.</p> <p>Policy T13a (Travel Plan and Contribution) Developments which meet the criteria set down in PPG13, or which are likely to employ more than 30 employees, or a residential site with more than 20 units, will be required to submit a travel plan. Any required contribution for transport improvements will be secured through a Section 106 Agreement.</p> <p>Policy T18 (Highways) Increase in traffic on the local road network will only be allowed in some special circumstances such as boosting the economy, removing traffic from other sensitive areas, improving road safety, reducing conflict between vehicles and non-motorists.</p> <p>Policy T20 (Planning Agreements) Where required applicants will be expected to enter into a Section 106 Agreement in order to provide or make an appropriate contribution to such improvements.</p> <p>The issues above are addressed as part of the assessment set out in this chapter in Section 12.9 and supported by Appendix 3F (Volume 5, Document 5.3.3F): CTMP and Appendix 3G (Volume 5, Document 5.3.3G): PRowMP.</p>
Saved Policies of the Selby District Local Plan, 2005 ⁷	<p>Policy T1 Permission for the new development will be subject to the capacity of the local road network unless appropriate off-site highway improvements are undertaken by the developer.</p> <p>Policy T2 Development proposals which would result in the creation of a new access or the intensification of the use of an existing access will be permitted provided highway safety is not compromised and the new access proposal can be created in a location and to a standard which is approved by the highway authority.</p>

⁶ City of York Council (2005). Local Plan Incorporating the 4th Set of Changes (April 2005). (online) Available at: <https://www.york.gov.uk/downloads/file/2822/the-local-plan-2005-development-control-local-plan-full-document-and-appendices> (Accessed July 2022).

⁷ Selby District Council (2005). Selby District Local Plan (online). Available at: <https://www.selby.gov.uk/selby-district-local-plan-sdlp-2005> (Accessed July 2022).

Policy	Policy Context
	The issues above are addressed as part of the assessment set out in this chapter in Section 12.9 and supported by Appendix 3F (Volume 5, Document 5.3.3F): CTMP and Appendix 3G (Volume 5, Document 5.3.3G): PRoWMP..

Technical guidance

12.2.5 A summary of the technical guidance for traffic and transport is given in **Table 12.2**.

Table 12.2 – Technical guidance relevant to the traffic and transport assessment

Technical guidance document	Context
The Department for Transport (DfT) Circular 02/2013 The Strategic Road Network and the Delivery of Sustainable Development Guidance ⁸	Sets out the ways in which Highways England (now National Highways (NH)) will engage with communities and developers to deliver sustainable development and thus economic growth, whilst safeguarding the primary function and purpose of the Strategic Road Network. The Environmental Impact section states that “ <i>developers must ensure all environmental implications associated with their proposals, are adequately assessed and reported so as to ensure that the mitigation of any impact is compliant with prevailing policies and standards. This requirement applies in respect of the environmental impacts arising from the temporary construction works and the permanent transport solution associated with the development, as well as the environmental impact of the existing trunk road upon the development itself</i> ”.
The Institute of Environmental Assessment (IEA) ⁹ publication Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic (GEART) ¹⁰	This document is still current guidance and sets out the approach to assessing traffic related environmental effects and has been the basis for the assessment in this chapter. Section 12.8 sets out how the guidelines have been applied.
Design Manual for Roads and Bridges (DMRB) ¹¹	The DMRB, produced by NH, provides standards, advice notes and other published documents relating to the assessment and operation of trunk roads and is frequently used by local highway authorities. A series of documents

⁸ Department for Transport (2013). The Strategic Road Network and the Delivery of Sustainable Development Guidance. (Online) Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/237412/dft-circular-strategic-road.pdf (Accessed July 2022).

⁹ Now the Institute of Environmental Management and Assessment, IEMA

¹⁰ Institute of Environmental Management & Assessment (IEMA) (1993) Guidelines for the Environmental Assessment of Road Traffic. IEMA; Lincoln.

¹¹ National Highways (formerly Highways England) - multiple documents available online. (Accessed July 2022).

Technical guidance document	Context
	<p>within the DMRB will be relevant to the design of access proposals.</p> <p>These include CD 109 (Highways Link Design), CD 123 (Geometric Design of at-grade priority and signal-controlled junctions) and CD 143 (Designing for walking, cycling and horse-riding).</p>

12.3 Consultation and engagement

Overview

12.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Chapter 4: Approach to preparing the ES (Volume 5, Document 5.2.4)**.

Scoping Opinion

12.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 28 April 2021. A summary of the relevant responses received in the Scoping Opinion in relation to traffic and transport and confirmation of how these have been addressed within the assessment to date is presented in **Table 12.3**.

Table 12.3 – Summary of EIA Scoping Opinion responses for traffic and transport

Consultee	Consideration	How addressed in this ES
Planning Inspectorate	The Inspectorate agrees that due to the likely low number of staff to be employed at each of the substations and the limited maintenance activity required for the components of the Proposed Development the effects on roads, PRow and users of these routes from traffic associated with operation and maintenance can be scoped out of the ES.	As agreed with the Planning Inspectorate, this has been scoped out of the assessment, as set out in Section 12.7 .
Planning Inspectorate	The Inspectorate agrees that as no Hazardous Loads are anticipated to be required in the construction, operation or maintenance of the Proposed Development this matter can be scoped out of the ES. However, the ES should consider impacts arising from Abnormal Indivisible Loads	As agreed with the Planning Inspectorate, effects from Hazardous Loads have been scoped out of the assessment, as set out in Section 12.7 .

Consultee	Consideration	How addressed in this ES
	where these are likely to give rise to significant effects.	
Planning Inspectorate	The Inspectorate considers that based on the nature and characteristics of the Proposed Development an operational phase Transport Assessment is not required.	As agreed with the Planning Inspectorate the requirement for a Transport Assessment has not been taken forward and is scoped out.
Planning Inspectorate	The Inspectorate notes that the Study Area will be reviewed and amended as necessary; this should include consideration of any additional roads that should form part of the assessment once the construction access routes are defined.	The Study Area has been amended from that set out in the Scoping Report as further detail on traffic generation, access locations and traffic distribution has been progressed. The current Study Area is set out in Section 12.7 .
Planning Inspectorate	The ES should consider the likely significant construction traffic and transport effects on PRoWs arising from installation of underground cables and associated earthworks, not just in relation to the local and strategic road network.	A PRoW Management Strategy (PRoWMP) has been prepared to support this chapter and is included as Appendix 3G (Volume 5, Document 5.3.3G) . Assessment of the local and strategic road network is set out in Section 12.9 .
Network Rail	Assessment of the proposed Project impact on Network Rail Infrastructure – Assessment should include consideration of how the Project and construction will impact the operational railway.	As requested by Network Rail this chapter is supported by Appendix 3F: CTMP (Volume 5, Document 5.3.3F) setting out the details of haulage routes, including where these cross existing rail assets.

Statutory Consultation

- 12.3.3 Statutory Consultation took place between 28 October and 9 December 2021 in accordance with the Planning Act 2008. Prescribed and non-prescribed consultees and members of the public were included in the consultation. Various methods of consultation and engagement were used in accordance with the SoCC including letters, website, public exhibitions, publicity and advertising in newspapers and webinar briefings.
- 12.3.4 National Grid Electricity Transmission plc (“National Grid”) prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. National Grid sought feedback on the environmental information presented in that report. Feedback received during statutory consultation was considered by National Grid and incorporated where relevant into the design of the Project.

12.3.5 A summary of the relevant responses received in response to statutory consultation, together with any subsequent discussions held in relation to Traffic and Transport and confirmation of how these have been considered within the assessment to date is presented in **Table 12.4** Statutory consultation representations and National Grid's responses is provided in **Volume 6, Document 6.1 (Consultation Report)**.

Table 12.4 – Summary of Statutory Consultation responses for traffic and transport

Consultee	Consideration	How addressed in this ES
Royal Mail	<p>Royal Mail requests that wording is added to the Preliminary Construction Traffic Management Plan to secure the following mitigations:</p> <ol style="list-style-type: none"> 1.Royal Mail is notified by National Grid Electricity Transmission Ltd or its contractors at least one month in advance on any proposed road closures / diversions / alternative access arrangements, hours of working, 2.where road closures / diversions are proposed, National Grid Electricity Transmission Ltd or its contractors liaise with Royal Mail at least one month in advance to identify and make available alternative highway routes for operational use, where possible, and 3.the final Construction Traffic Management Plan should include a mechanism for National Grid Electricity Transmission Ltd or its contractors to inform Royal Mail about works affecting the local highways network. 	<p>Appendix 3F (Volume 5, Document 5.3.3F) CTMP includes the associated text requested by Royal Mail.</p>
Sustrans	<p>Targeted Statutory consultation was undertaken with Sustrans in March-April 2022. The following considerations were made:</p> <p>Sustrans provided links to design guidance for temporary diversions of NCN routes. It was noted that the standard for provision of temporary diversions should be in accordance with relevant current design guidance LTN 1/20. It was acknowledged that the alternative route at Overton would be a traffic free route and the way in which this route leaves and re-joins the carriageway is also key for any new provision.</p> <p>It was agreed that further consultation would be undertaken.</p>	<p>Details of the proposals for the alternative route of the NCN route during the construction phase are set out in the PRowMP</p> <p>Further consultation was undertaken as set out below in Table 12.5.</p>
British Horse Society	<p>We would ask that due consideration is given to horse riders, along the entire route as the most vulnerable road user. It has now become clear from</p>	<p>PRow 28/13/10 routes under the YR overhead line which is not</p>

Consultee	Consideration	How addressed in this ES
	<p>the plans that the bridleways affected, are from Section A, Osbaldwick CP, bridleway number 28/13/10. This bridleway must remain intact, and any work carried out which is adjacent to the bridleway be undertaken with due regard to the safety of horse riders using this bridleway., This bridleway is an important route for the Cottage Farm Stables Business and therefore any closure must be temporarily as short as possible to minimise the effect on the business.</p> <p>The second bridleway Section D, which is located in Sutton with Hazelwood CP number 35.63/6/3 must remain open throughout the proposed works, the surface must remain intact and any damage must be repaired to the original standard.</p> <p>Any further vehicle intensification of this route will be detrimental to the public's enjoyment and safety. Very little consideration is being given to bridleway traffic, and the potential for conflict between it and large vehicles on a regular basis throughout the day. Should this scheme go ahead it is imperative that visibility and signage are improved on all access roads.</p> <p>When meeting site traffic, this traffic should give way to horse riders at all times and should be limited to a maximum speed of 5 MPH. We would ask the drivers of the site vehicles to be educated in how to pass horses safely thereby minimising conflict and reducing the risk of accidents. And the British Horse Society would be happy to assist with that.</p> <p>The surface of any bridleways affected by this scheme must be inspected and maintained throughout the entire time that this Project is operating, ruts and ponds should not be allowed. We also ask that a bypass route for horse riders be considered where appropriate.</p>	<p>proposed to be affected by the Project. Therefore PRow 28/13/10 will be unaffected.</p> <p>PRow 35.63/6/3 runs along Chanty Lane which is not proposed to be used as an access route from the local highways network and as such, there will not be vehicle intensification from traffic along the track. The PRow will be crossed by XC overhead line which will be reconducted and an access haul road to pylons XC488 to XC490. This is proposed to be addressed via a managed closure over a short timeframe and a safe managed vehicle crossing point. No long-term closure of the road is proposed.</p> <p>Details of how the impacts on bridleways are addressed in Appendix 3G (Volume 5, Document 5.3.3G) PRowMWP.</p>

12.3.6 It should be noted that no formal statutory response to the PEIR chapter for traffic and transport and the associated appendices were received from the local highways authorities North Yorkshire County Council (NYCC), City of York Council (CYC) or Leeds City Council (LCC) or NH as the national highway authority. It was considered that technical engagement was required with these parties after the end of the statutory consultation phase. This engagement was undertaken and the details of this are set out in **Table 12.5.**

Technical engagement

12.3.7 Technical engagement with consultees in relation to traffic was undertaken with the key stakeholders following the completion of the statutory consultation phase. **Table 12.5** sets out the details of the consultation.

Table 12.5 – Summary of technical engagement for traffic and transport

Consultee	Consideration	How addressed in this ES
Sustrans – Teams Meeting 27 May 2022	<p>Following on from the targeted consultation, a detailed discussion was undertaken with Sustrans, with a focus on the design of the proposed alternative route to the NCN Route 65 at Overton Lane.</p> <p>After the meeting the following commitments were agreed with Sustrans:</p> <p>The alternative NCN route will be in place for the construction period for the area of construction works that would impact the existing cycle route. The alternative route should be in place before any works in the area commence.</p> <p>The alternative NCN route will be designed in consultation with Sustrans, and in accordance with Sustrans guidance, specifically the following:</p> <ul style="list-style-type: none"> • Temporary diversions of NCN routes (Sustrans)¹² • Sustrans traffic-free routes and greenways design guide – (Sustrans)¹³ 	<p>Details of the proposed cycle path alternative route are set out in Appendix 3G (Volume 5, Document 5.3.3G) PRowMP.</p> <p>The details of the alternative route of the NCN65 route have been included in the Access and Rights of Way plans and secured under the powers of the DCO.</p>

¹² Sustrans (2022). Temporary diversions of National Cycle Network routes (online). (Accessed July 2022).

¹³ Sustrans (2022). Sustrans traffic-free routes and greenways design guide (online). (Accessed July 2022).

Consultee	Consideration	How addressed in this ES
CYC – Design Focused Meeting – 11 February 2022	<p>The alternative cycle path provided will be at least 3m wide, and the opportunity for a 4m wide cycle path will be explored, taking into account the amount of land available</p> <p>Signage for the alternative cycle path will be consistent with Sustrans permanent cycle path signage.</p>	<p>The Order Limits (see Section 12.5) include the design elements (access design and visibility splays) that have been agreed with CYC including the visibility splay lengths based on speed surveys and DMRB standards.</p> <p>Details of the accesses and associated visibility splays, AIL impacts are included in the CTMP (Appendix 3F, Document 5.3.3F) along with details of the agreed access designs for the construction phase.</p>
	<p>The focus of this meeting was to understand any comments CYC had on the PEIR submission as no formal response was received.</p> <p>This was the first of two meetings, which focused on addressing design related issues which had effects on the proposed Order Limits. These involved bellmouth design, visibility splays, PRoW Diversions and AIL impacts.</p> <p>It was agreed that speed surveys should be used to inform the length of visibility splays at access junctions based on the 85thile speeds and in accordance with DRMB design standards.</p> <p>During the meeting a schedule of all accesses was presented and some locations were noted where visibility splays were considered not to be required or could be managed with traffic management. Following the meeting, a schedule of the final arrangement for the accesses was provided to CYC but no response was received.</p>	

Consultee	Consideration	How addressed in this ES
<p>CYC – Assessment Focused Meeting – Team Meeting – 6 May 2022</p>	<p>The second meeting with CYC focused on the assessment presented at PEIR and asked the local highway authority if there were any issues this raised.</p> <p>During the meeting and within post meeting emails, CYC confirmed that they were content with the following:</p> <ul style="list-style-type: none"> • Collection of traffic survey data for all locations where data in the PEIR was older than 2019 or was a gap (due to COVID); • Use of the EIA assessment methodology based on Guidelines of the Environmental Assessment of Traffic (GEART) (IEA, 1993) to inform the EIA assessment; • Growth of DfT traffic data and traffic count survey data to a 2022 baseline (and future year baseline) using a growth factor derived from TEMPro; • The general methodology for traffic generation and distribution; • No requirement for a Transport Assessment as set out and agreed with PINS at scoping stage; and • Use of CYC accident data to be 5-year period dating from April 2022. 	<p>The matters dealt with during the meeting are address in the following sections of this document:</p> <ul style="list-style-type: none"> • Section 12.8 – Traffic Generation Methodology; • Section 12.5 – Traffic Growth Methodology; • Section 12.5 – Accident assessment and baseline traffic data; • Section 12.8 – Assessment methodology. <p>The A1237 York Outer Ring Road Dualling is proposed to be completed in 2025 which has an overlap with the proposed assessment year of the Project. However, assessment in this chapter has not included any construction traffic from the A1237 York Outer Ring Road Dualling as not to under estimate the potential percentage impacts of the Project.</p> <p>Details of the A1237 York Outer Ring Road Dualling are included in Appendix 3F, Volume 5, Document 5.3.3F CTMP related to the AIL assessment.</p>

Consultee	Consideration	How addressed in this ES
NYCC – Design Focused Meeting – 5 February 2022	<p>CYC set out that there would be a new scheme constructed, the A1237 York Outer Ring Road Dualling, which would be complete by 2025 and would form part of the future base year network.</p>	<p>The Order Limits include the design elements that have been agreed with NYCC including the visibility splays lengths bason speed surveys and DMRB standards.</p>
	<p>The focus of this meeting was to understand any comments NYCC had on the PEIR submission as no formal response was received.</p>	
	<p>This was the first of two meetings, the first of which focused on addressing any design related issues which had effects on the proposed Order Limits. These involved bell mouth design, visibility splays, PRow diversions and AIL impacts.</p>	<p>Details of the accesses and associated visibility splays are included in the CTMP (Appendix 3F, Volume 5, Document 5.3.3F) along with details of the agreed access designs for the construction phase.</p>
	<p>It was agreed that speed surveys should be used to inform the length of visibility splays at access junctions based on 85%tile speeds and in accordance with DRMB design standards.</p>	<p>The inclusion of the Overton Road widening scheme within the future baseline has been agreed and is incorporated into the Project design, details of which are included in the CTMP.</p>
	<p>At the meeting a schedule of all accesses was presented and it noted some locations where visibility splays were considered not required or could be managed with traffic management.</p>	
	<p>The meeting also focused on the requirement from NYCC for an improvement (widening) scheme on Overton Road between the substation and the A19. The inclusion of this scheme within the future baseline was agreed. Further post meeting discussion</p>	

Consultee	Consideration	How addressed in this ES
NYCC– Assessment Focused Meeting – 11 May 2022	<p>resulted in a design that was agreed and included in the Project design.</p> <p>The second meeting with NYCC focused on the assessment presented at PEIR and asked the local highway authority if there were any issues this raised.</p> <p>NYCC confirmed that they were content with the following:</p> <ul style="list-style-type: none"> • Collection of traffic survey data for all locations where data in the PEIR was older than 2019 or was a gap (due to COVID); • Use of the EIA assessment methodology based on Guidelines of the Environmental Assessment of Traffic (GEART) (IEA, 1993) to inform the EIA assessment; • Growth of DfT traffic data and traffic count survey data to a 2022 baseline (and future year baseline) using a growth factor from TEMPro; • The general methodology for traffic generation and distribution; • No requirement for a Transport Assessment as set out and agreed with PINS at scoping stage; and • Use of NYCC accident data to be 5 year period dating back from April 2022. <p>A review of major applications was undertaken and NYCC set out that consideration</p>	<p>The following sections set out details of:</p> <ul style="list-style-type: none"> • Section 12.8 – Traffic Generation Methodology; • Section 12.5 – Traffic Growth Methodology; • Section 12.5 – Accident assessment and baseline traffic data; • Section 12.8 – Assessment methodology. <p>Proposals for the use of a left in left out at the A63/Rawfield Lane junction are set out in the CTMP (Appendix 3F Volume 5, Document 5.3.3F).</p>

Consultee	Consideration	How addressed in this ES
NH	<p>might need to be made of the new settlement site near the A59 at Whixley. However, it was agreed that this traffic would be included in the TEMPro growth rates used.</p> <p>NYCC also noted the potential issues with a low rail bridge on Laith Staid Road. Post meeting this was reviewed and it was noted that it had no signed height restriction. The suitability of the route will be confirmed with Network Rail.</p> <p>NYCC asked that the crashmap data used at PEIR should be updated with data from the NYCC accident database. It was agreed this would be used, however the NYCC accident database was unfortunately not working between April and August 2022 and as such crashmap¹⁴ data has been used for this DCO submission.</p> <p>There was also discussion on the issues of traffic turning off the A63 into Rawcliffe Lane. It was agreed that a solution to potential safety implications was required. Initially it was discussed that a speed limit reduction would be proposed, however NYCC did not accept this. It was agreed that a left in left out would be more appropriate using the roundabout to the east at the A63/A162 for the construction phase.</p>	<p>NH has been contacted as part of the consultation</p>

¹⁴ Crashmap (2022). Online mapping (online) (Accessed July 2022).

Consultee	Consideration	How addressed in this ES
	process. A response was received on 29 September 2022 and engagement is ongoing.	

12.3.8 It should be noted that a small 2km section of road (Spenn Common Lane/Warren Lane) is required to be used as part of the HGV access strategy through the Leeds City Council (LCC) area, and consultation is being undertaken with LCC regarding this.

12.4 Data gathering methodology

12.4.1 The description of the baseline conditions presented in **Section 12.7** is based on currently available data for the Study Area.

12.4.2 The methodology for baseline data gathering including the desk study and site surveys is set out below.

Study Area

12.4.3 The Study Area for the Traffic and Transport assessment has been informed by:

- Roads providing access for construction traffic generated by the Project and points on the transport network that will be crossed by any element of the Project. Temporary construction working areas and laydown areas will be required throughout the Project and will be located within the Order Limits.
- The key routes outside of the Order Limits, which cover the entire area within which development could take place, that construction traffic will take to access the construction areas and permanent infrastructure of the Project.

12.4.4 The proposed transport Study Area is set out in **Figure 12.1, Volume 5, Document 5.4.12** of this document.

12.4.5 The scope of assessment for the Project has taken into account the key roads that would be affected by predicted traffic generation associated with the construction, refurbishment and dismantling of overhead lines for the Project. These are set out in further detail in **Section 12.7**.

12.4.6 The Study Area falls within local highways authority boundaries comprising NYCC, CYC and LCC and includes roads that are part of the Strategic Road Network (SRN) which are managed and maintained by NH.

12.4.7 The Study Area for the Project includes the road links affected by the Project which are set out in **Table 12.6**.

Table 12.6 - Transport Study Area

Study Area – List of Roads			
A162	A63	Rawfield Lane	Butts Lane
A1246	A1(M)	Westfield Lane	B1222

Study Area – List of Roads

Whitecote Lane	St John's Lane	B1217 Aberford Road/Collier Lane	Copley Lane
Coldhill Lane	Paradise Way	A64	Spennacombe Lane
Warren Lane	A659	C305 Garnet Lane	Moor Lane
Wighill Lane	Croft Lane	A168 (Walton Road)	B1224 (Wetherby and York Road)
Healaugh Lane	Church Lane	M1	Atterwith Lane
Marston Lane	A59	Tockwith Road	East Lane
Newland Lane	Church Lane	Red House Lane	A1237
A19	Common Croft Lane	Cinder Lane	B1363 (Sutton Road, Wigginton Road)
Corban Lane	Overton Road	Stripe Lane	Osbalwick Link Road
Murton Way	Plainville Lane	A1079	U1720
Laith Staid Road			

Desk study

12.4.8 A desk study has been undertaken which has included a review of the strategic and local road network, public transport networks, PRow network, and accident data within the Study Area for the Project.

12.4.9 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 12.7**.

Table 12.7 - Data sources used to inform the traffic and transport assessment

Organisation	Data Source	Data Provided
Ordnance Survey (OS) Mapping	Bing maps allows access online to Ordnance Survey Mapping ¹⁵	1:50,000 and 1:25,000 Ordnance Survey Mapping of the Study Area
Google Traffic	Google maps website ¹⁶	Visual representation of congestion on local roads and junctions within the Study Area during different times of the day
Crashmap	Crashmap website ¹⁴	Accident data for the entire Study Area

¹⁵ Microsoft Bing (2021). Bing Maps (Online) (Accessed July 2022).

¹⁶ Google (2021). Google Maps (Online) (Accessed July 2022).

Organisation	Data Source	Data Provided
Google Street View	Google maps website ¹⁶	Street view imagery of the local highways network
PRoW Information	North Yorkshire County Council Definitive Map ¹⁷ City of York Definitive Map ¹⁸	PRoW information from the definitive maps provided by NYCC and CYC
Traffic Data	DfT website ¹⁹	Traffic data derived from manual and automatic traffic counts on roads in England and Scotland. Includes Annual Average Daily Flow (AADF) by vehicle classification, raw data and traffic flow estimations for the years when counts have not been undertaken.
Bus Service information	York – Travel York website ²⁰ Selby – Arriva website ²¹ Leeds – Firstbus website ²²	Bus Service information for the local area from York, Leeds and Selby
National Cycle Network (NCN) Information	Sustrans website ²³	Details of NCN through the Study Area
DfT (2021) – Table TRA2501c	DfT website ²⁴	Road traffic statistics of vehicle classifications to inform HGV traffic growth assumptions.
DfT – Trip End Model Presentation	The National Trip End Model (NTEM) forecasts the growth in trip origin-destinations (or productions-attractions)	Traffic growth rates for the Study Area.

¹⁷ North Yorkshire County Council (2021). Base Maps Public Rights of Way (Online) Available from: https://maps.northyorks.gov.uk/connect/analyst/mobile/#/main?mapcfg=roads_footpaths (Accessed July 2022).

¹⁸ City of York Council (2021) Public rights of way (Online). Available at: <https://www.york.gov.uk/PROW> (Accessed October 2021)

¹⁹ Department for Transport (2021). Road Traffic Statistics (Online) Available from: <https://roadtraffic.dft.gov.uk> (Accessed July 2022).

²⁰ City of York Council (2021). York Bus Route Map (Online) (Accessed July 2022).

²¹ Arriva (2021). Bus travel in Selby. (Online) (Accessed July 2022).

²² FirstBus (North) Limited and FirstBus (South) Limited (2021). Network Maps (Online) (Accessed July 2022).

²³ Sustrans (2021). The National Cycle Network. (Online) (Accessed July 2022).

²⁴ Department for Transport (2021). Provisional Road Traffic Estimates, Great Britain: April 2020-March 2021. (Online) Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940319/tra2501.ods (Accessed July 2022).

Organisation	Data Source	Data Provided
Program (TEMPro)	up to 2051 for use in transport modelling. The NTEM includes planning data to allow for traffic growth as a result of new development. The TEMPPro software allows users to view the NTEM dataset and has been used to derive traffic growth factors between years, e.g. from baseline year to forecast year.	
Network Rail	National Rail website ²⁵	Rail services details of active rail lines in the Study Area

Survey work

12.4.10 A site survey of the local road network with the potential to be affected by the construction traffic generated by the Project was carried out on 15 March 2021 WSP. The site survey included detailed notes and photographs recorded on a Global Positioning System (GPS) linked on-site system (collector app). **Table 12.8** below sets out details of this site survey.

Table 12.8 - Transport site survey

Survey Type	Scope of Survey	Coverage of Study Area	Survey Status
Site Survey	<p>The scope of the site survey included:</p> <ul style="list-style-type: none"> • All roads and junctions that are part of the Study Area; • All proposed site access locations; • Key PRowS potentially affected by the Project such as the national trails and key routes near settlements; • Observations of traffic conditions on the highways network; • Visit to the existing substation at Monk Fryston; • A visit to the proposed construction compound locations; • Observations of key sensitive locations; and 	Proposed construction traffic routes within and on the periphery of the Study Area	Survey Complete

²⁵ National Rail (2021). Maps of the National Rail Network of Great Britain (Online) (Accessed July 2022).

Survey Type	Scope of Survey	Coverage of Study Area	Survey Status
	<ul style="list-style-type: none"> Driving along routes to confirm their suitability for HGV traffic. 		

12.5 Overall baseline

12.5.1 This section provides a description of the baseline conditions of the local and strategic roads in the Study Area (as set out in **Table 12.6**) which are proposed to be used to access the Project, as well as potentially affected PRowS, cycle routes and sustainable travel routes. **Figure 12.2, Volume 5, Document 5.4.12** illustrates the roads that have been included in this section.

Strategic road network

A1(M)

12.5.2 The A1(M) has been split into four separate sections to reflect those parts of the A1 that have been upgraded. The section that forms part of the Project access strategy runs between the M62 at junction 41 and the A194(M) at Junction 65. The road is a motorway with three lanes in both directions, a hard shoulder and is subject to a 70mph speed limit.

M1

12.5.3 The M1 motorway runs from London to Leeds ending beyond Junction 47 where it merges with the A1(M). The road is subject to a 70mph speed limit. In the Study Area the M1 west of A1(M) is a motorway with three lanes in both directions and a hard shoulder.

A64

12.5.4 The A64 is a major road in the North of England which links Leeds to Scarborough via York. In the Study Area east of the A1(M) the road is part of the SRN and, is a dual carriageway from the A1(M) to the east of York to the north-east of its junction with the A1237 and subject to the National Speed Limit (NSL) (70mph).

Local highways network

A162

12.5.5 The A162 runs between Darrington and Tadcaster to the east of the A1(M). The road is a two-lane single carriageway for its length and is subject to the NSL (60mph) for the majority of its length except where it passes through villages such as Barkstone Ash and Towton where the speed limit reduces to 30/40mph. There are footways and lighting along the route only in the villages that the route passes through and around major junctions.

A63

12.5.6 The A63 runs between Leeds and Hull on an east to west alignment. The road is generally a two-lane single carriageway for its entirety with short dual carriageway sections near major junctions and towns. The road is subject to the NSL (60mph) other than where it passes through towns and settlements, where there is also street lighting.

Rawfield Lane

12.5.7 Rawfield Lane routes north to south-west between the A63 and the settlement of Fairburn and is a two-lane single carriageway. It is subject to the NSL (60mph) for the majority of its length other than on the approach to Fairburn where the speed limit reduces to 30mph. There is a 7.5 tonne HGV restriction on the road except for loading.

Butts Lane

12.5.8 Butts Lane routes from the A63, in the south, to Westfield Lane, in the north, passing through the settlement of Lumby. South of Lumby the road is a narrow single lane carriageway with no centre line and has a 7.5 tonne HGV restriction on the road except for loading. The road is subject to the NSL (60mph) other than in Lumby where the speed limit is 30mph. The road has footways and street lights in Lumby.

A1246

12.5.9 The A1246 is the former A1 between Brotherton and Selby Fork. The road is a two-lane single carriageway subject to the NSL (60mph).

Westfield Lane

12.5.10 Westfield Lane routes from the A63 to Low Street, South Milford, in a west-east orientation. The road is generally a narrow single lane carriageway with no centre line, except where the road crosses the A1(M). It has a 7.5 tonne HGV restriction on the road except for loading and is subject to the NSL (60mph) other than in South Milford where the speed limit is 30mph. The road has footways and street lights in South Milford.

B1222

12.5.11 The B1222 runs between the A19 at York and Fulford via Sherburn in Elmet. The road is subject to the NSL (60mph) other than through settlements such as Naburn (20mph) and Sherburn in Elmet (30mph). The road is a two-lane single carriageway with street lights and footways in the villages only.

Whitecote Lane

12.5.12 Whitecote Lane is a rural two-lane single carriageway between the B1222 and the West Side of South Milford. The road is subject to the NSL (60mph).

St John's Lane/Coldhill Lane/Copley Lane

12.5.13 St John's Lane/Coldhill Lane/Copley Lane is a rural two-lane single carriageway between Sherburn in Elmet and the B1217. The road is subject to the NSL (60mph) other than in Sherburn in Elmet where the limit is 30mph.

B1217 Aberford Road/Collier Lane

12.5.14 The B1217 is a short rural B road that connects Towton to Garforth. The road is a two-lane single carriageway subject to the NSL (60mph).

Paradise Way

12.5.15 Paradise Way routes north to south from the A64/A1(M) junction in the south to Wetherby Road in Bramham in the north. Within the Study Area the road routes from the A64/A1(M) junction to Spen Common Lane, through a rural area. The road is largely single carriageway through this area. The speed limit is the NSL (60mph). There is a shared cycle/footpath on the southbound side of the carriageway.

Spen Common Lane

12.5.16 Spen Common Lane routes between Paradise Way to the west and Warren Lane to the north-east. It routes through a rural area with a warning for slow farm traffic. The road is predominantly single carriageway without a centre line with some potential places for passing and is without footpath provision. The NSL (60 mph) applies.

Warren Lane

12.5.17 Warren Lane is a rural road that routes between Spen Common Lane to its south and Toulston Lane to the north. At the southern extent it passes by residential properties. It is predominantly single carriageway without a centre line. The NSL (60 mph) applies.

A659

12.5.18 The A659 is a two-way single carriageway that routes out of the north-west of Tadcaster and through a rural area to Weatherby via Boston Spa. The road is subject to the NSL (60 mph) other than in built up areas where the speed limit is 30mph. In the vicinity of the Study Area the A659 has a direct junction with the A64.

C305 Garnet Lane

12.5.19 Garnet Lane is a short road that links two points off the A659 just west of Tadcaster. The road is a single lane with passing places. The road is rural in nature with no footways and is subject to the NSL (60 mph).

Moor Lane

12.5.20 Moor Lane is a short road that links Garnet Road to Weedling Gate south-west of Tadcaster. The road is a single lane with passing places. The road is rural in nature with no footways and is subject to the NSL (60mph).

Croft Lane

12.5.21 Croft Lane is a short road that links the A659 into the village of Newton Kyme. The road is a single lane with passing places. The road is rural in nature with no footways and is subject to the NSL (60 mph).

A168 (Walton Road)

12.5.22 The A168 runs through North Yorkshire between Boston Spa and Northallerton via Weatherby. Within the Study Area the A168 runs from junction 45 of the A1(M) and routes north to Wetherby.

Wighill Lane (West)

12.5.23 Wighill Lane West runs from a junction with Walton Road/Wetherby Road in Walton and Church Road south of Wighill. The road is a rural two-lane single carriageway with no footways.

Wighill Lane (East)

12.5.24 Wighill Lane East runs from Wighill to Healaugh. The road is a rural two-lane single carriageway with no footways.

Church Lane

12.5.25 Church Lane routes between two sections of Wighill Lane as it routes through Wighill village. It is a two-lane single carriageway. The speed limit through the village is 30mph and NSL (60mph) either side. There is footway provision on both sides of the carriageway as Church Lane routes through Wighill.

B1224 (York Road)

12.5.26 The B1224 routes between the A59, in the east, and a roundabout junction with the A168 and Deighton Road in the west. Within the Study Area the road routes between the B1224 junction with A1(M) (junction 46) to the junction with Healaugh Lane. The B1224 in this section is generally a two-lane single carriageway. There is some footway provision as the B1224 routes passes through Bickerton and eastwards from this location. Approaching the settlement of Bilton-in-Ainsty, eastbound, the speed limit is 40mph and there is footway and bus provisions. On exiting the settlement, the NSL (60mph) applies.

Healaugh Lane

12.5.27 Healaugh Lane routes south from the B1224. The NSL (60mph) applies. There is a priority junction with the B1224. It is single carriageway with no centre line and has no footway facilities.

A59

12.5.28 The A59 routes from Preston to York. Within the Study Area the road routes between the A1237 and the A1(M)/A168. The speed limit varies from 40mph to the NSL (60mph) as it routes through both rural areas and urban areas. There is footway and street lighting provision along some of its length within built up areas and villages. The road is a high standard two-lane single carriageway.

Tockwith Road

12.5.29 Tockwith Road routes between B1224 York Road and Marston Road through the village of Long Marston. The road is subject to a 7.5 Tonne HGV restriction aside from loading. The road is single carriageway with footpath provision on the north side of the

carriageway and street lighting provision through the village. After the village the road is subject to the NSL (60mph).

Atterwith Lane

12.5.30 Atterwith Lane routes between Tockwith Road/Main Street (in Long Marston) and Main Street (in Hessay) and routes through a rural area. The NSL (60mph) applies outside the village and 30mph within the villages. The road is subject to a 7.5 Tonne HGV restriction aside from loading.

Marston Lane

12.5.31 Marston Lane routes between the A59 and Atterwith Lane. There is a priority junction with the A59. The road is a two-lane single carriageway through a rural area subject to the NSL (60mph) and has no footway provision.

Church Lane

12.5.32 Church Lane routes from A59 to Moor Monkton. It is signed as a no through road as it leads to a dead end in Moor Monkton. Shortly beyond the junction with the A59 there is a single carriageway without central road markings and a short section of footway provided but north of this point the road widens to a two-lane carriageway but without centre lines other than near the junction with Red House Lane. The road is subject to the NSL (60mph).

Red House Lane

12.5.33 Red House Lane routes north-east from Church Lane to Hall Lane. It routes through a rural area with access to a small number of properties and is subject to the NSL (60mph). The road is a cul-de-sac terminating at farm buildings to the north-east.

East Lane

12.5.34 East Lane is to the west of Moor Monkton and follows from Church Lane and Main Street. It passes residential properties and is signed as a no through road for vehicles. It is single carriageway with no centre line. The NSL (60mph) applies.

Newlands Lane

12.5.35 On Newlands Lane the NSL (60mph) applies. It routes between the A59 to the south to a junction with Broad Lane/West Field Lane/Common Croft Lane to the north. There is a HGV restriction of 7.5 tonnes except for loading. The road is single carriageway, with no centre line but with passing places. It routes through a rural area with no footways.

Common Croft Lane

12.5.36 Common Croft Lane routes from Newlands Lane to Cinder Lane/Ouse Moor Lane. It is single carriageway with no centre line markings and some passing places. The road is subject to the NSL (60mph) and does not have footways.

Cinder Lane

12.5.37 Cinder Lane is a single carriageway that runs north-west from a junction with Common Croft Lane/Ouse Moor Lane. The road is a cul de sac as it terminates to the north-west at a farm. The road is single track and subject to the NSL (60mph).

A1237

12.5.38 The A1237 is part of the York Ring Road forming the east and northern sections. It links the A64 at both ends (as that forms the remaining section of the York Ring Road). The road provides access to several strategic roads such as the A64, A19 and A59. The road is a two-lane single carriageway. The road does not have footways but there are signalised and dropped crossings at all the major junctions. Approaching the junction with the A59 the speed limit is 40mph and beyond it the NSL (60mph) applies.

A19 (Shipton Road)

12.5.39 The A19 routes from York (A1237) to the A168 at Thirsk. Within the Study Area the A198 runs from A1237 to Overton Road/Station Lane. The A1237 is subject to a 50mph speed limit just north of York and then the NSL (60mph) applies. There is also a 30mph speed limit in Shipton and 40mph speed limit in Skelton. There is footway provision, including a pedestrian crossing island at the A1237 junction. Within the Study Area the A19 is predominantly a high quality two-lane single carriageway.

Overton Road

12.5.40 Overton Road routes from Stripe Lane towards the A19, through a rural area passing through Overton. The NSL (60mph) applies. Overton Road is a narrow single lane carriageway without a centre line, and with passing places. There is a gradient change due to a bridge crossing over the railway line.

Stripe Lane

12.5.41 Stripe Lane routes from the A19 to Overton Road. The NSL (60mph) applies. It is a single lane carriageway with no central line, with passing points. Routing from the A19 there is a warning sign for vehicles over 10'6" due to a low bridge on the road related to a rail bridge. Stripe Lane routes through a rural area, passing a small number of properties.

B1363 (Sutton Road, Wigginton Road)

12.5.42 The B1363 routes from York (A1237) to the B1257 to the north. Within the Study Area the road routes from A1237 to Goose Lane. The road is generally a two-lane single carriageway subject to the NSL (60mph) but on approach to Wigginton the speed limit reduces to 40mph.

Corban Lane

12.5.43 Corban Lane routes west-east from East Lane to the B1363 through a rural area. There is a priority junction with the B1363. Routing west from the B1363 the road is subject to the NSL (60mph) and has an HGV restriction over 7.5 tonnes. Corban Lane is a two-lane carriageway.

Plainville Lane

12.5.44 Plainville Lane is a narrow single lane carriageway without a centre line, and with passing places. It routes between Corban Lane and Bull Lane in a north south-orientation through a rural area with a small number of properties. The road is a dead end. The road is subject to the NSL (60mph).

A1079

12.5.45 The A1079 routes from Hull (A1079/A165) city centre to York city centre (A1078/A1036/Foss Islands Road). Within the Study Area the road runs between Osbaldwick Link Road and the junction with the A64/A166. The junction with Osbaldwick Link Road is signalised and is shortly followed by another signalised junction. The road in this section is dual carriageway with a speed limit of 40mph with a shared pedestrian and cycle pathway on both sides of the road and a bus lane on the westbound carriageway.

Osbaldwick Link Road

12.5.46 Osbaldwick Link Road routes between Hull Road (A1079) and Murton Way and has a speed limit of 30mph. It has a signalised junction with Hull Road and at that junction the southbound carriageway has two lanes and two bicycle lanes. On the northbound carriageway side of the road there is a split cycle/pedestrian footway and a short stretch of footway on the southbound carriageway side to the south of the junction with Murton Road. The road passes through areas that predominately comprise retail/business uses and has bus service facilities along the road as well as street lighting provision.

Murton Way

12.5.47 Murton Way routes east from Osbaldwick Link Road and routes to the Moor Way/Moor Lane/Murton Lane junction to the east. The speed limit varies between 30mph and the NSL (60mph). Past the existing junction with Osbaldwick Substation there is a 7.5 tonne HGV restriction. Murton Way is single carriageway routing through an area of businesses/residential properties and has a footpath on the westbound carriageway.

Bus network

12.5.48 Bus services are in operation between the major settlements within the Study Area. The following bus services operate along roads which are crossed by existing overhead lines within the Order Limits or will be crossed by new overhead lines proposed as part of the Project:

- A659 (West of Tadcaster):
 - 843, 840 (both Leeds to York and on to Scarborough or Pickering & Whitby);
- A1079 – X47/X46 (both York to Hull);
- Wighill Lane, Church Lane – 37 (York to Tadcaster);
- Rawfield Lane – 493 (Sherburn in Elmet to Pontefract);
- B1222 – 164 (Selby to Leeds);
- A659 – 492 (Sherburn in Elmet to Weatherby via Tadcaster)
- B1224 - 412 (York to Weatherby);

- A59:
 - 22/23 (York to Boroughbridge then Rippon and Knaresborough);
 - 436 (York to Boroughbridge and then Thirsk and Middlesborough);
 - 852 (Wigginton to York then Harrogate and Richmond);
 - 74 (York to Harrogate and Ilkley);
- Marston Lane – 22/23 (York to Boroughbridge then Rippon and Knaresborough);
- A63 – 493 (Sherburn in Elmet to Pontefract);
- A64 – 561 (York to Hull via Tadcaster);
 - CityZap (Leeds to York);
- B1363:
 - 40 (York to Easingwold);
 - 852 (Wigginton to York then Harrogate and Richmond);
- A19:
 - 29 (York to Easingwold);
 - 30x, 30 (York to Easingwold and Thirsk); and
 - 31x (York to Easingwold and Helmsley).

12.5.49 The key roads above and the bus services running along them are set out in **Figure 12.3, Volume 5, Document 5.4.12**.

Public Rights of Way

12.5.50 The Order Limits and existing and proposed Project elements within them potentially affect a number of PRoWs.

12.5.51 **Figure 12.4, Volume 5, Document 5.4.12** sets out the locations of the PRoW in relation to the Project. To understand the effects of the Project a PRoWMP has been developed and is provided in **Appendix 3F (Volume 5, Document 5.3.3F)**.

12.5.52 The PRoWMP has set out in detail each PRoW and area of Open Access Land (OAL) that would be affected by the Order Limits of the Project. This includes details on the PRoW number, type of effect and if the impact will be permanent or temporary.

National Cycle Network

12.5.53 Two Sustrans NCN routes fall within the Order Limits:

- NCN 65 – Runs between Middlesbrough and Hornsea (via York): within the Order Limits NCN runs along Overton Road, Stripe Lane and an off-road section south of Stripe Lane; and
- NCN 66 – NCN Route 66 runs along Murton Way which provides access to Osbaldwick Substation.

12.5.54 **Figure 12.5, Volume 5, Document 5.4.12** of this document shows the NCN routes and the Order Limits for the Project.

12.5.55 There are impacts on NCN Route 65 due to the location of the proposed substation and temporary construction compounds (TCCs) on Overton Road and the duration of these works. A temporary alternative cycle path has been identified, the details of which are set out in the PRowMP and is shown in the **Access, Rights of Way and Public Rights of Navigation Plan (Volume 2, Document 2.7.1 – 2.7.6)**.

Navigable watercourses

12.5.56 The only navigable watercourse crossed by the Order Limits is the River Ouse north west of York between Moor Monkton and Overton in Section B. Details on the management of the crossings of the River Ouse are included in **Appendix 3F - CTMP, (Volume 5, Document 5.3.3F), Appendix 3G – PRowMP (Volume 5, Document 5.3.3G)** and shown in the **Access, Rights of Way and Public Rights of Navigation Plan (Volume 2, Document 2.7.1 – 2.7.6)**.

Baseline traffic data

12.5.57 As the COVID-19 pandemic had a substantial effect on road traffic levels during 2020, 2021 and early 2022, for the ES, baseline traffic flows have been derived from a combination of existing traffic counts available from an online database maintained by DfT¹⁹ and new traffic surveys undertaken in mid-2022.

12.5.58 Technical discussion with NYCC and CYC agreed that when then using the DfT historic traffic data that use of data older than 2018 would not be accepted and that data beyond 2019 would not be representative due to the impacts of the COVID-19 Pandemic. As such historic data from 2019 was agreed as appropriate to use for the basis of assessment.

12.5.59 The following section sets out the details of the DfT derived baseline traffic data and the 2022 traffic survey data.

DfT Historic Data

12.5.60 As the available traffic data is historic, growth rates have been applied to the 2019 DfT data. The growth rates for total vehicles have been derived from the DfT's TEMPro 7.2 software and HGV growth rates have been derived from the DfT National Traffic Statistics. The current year of 2022 has been adopted as the baseline year.

12.5.61 Growth rates from TEMPro have been based on three planning authority areas due to the length of the route: Selby district for the south section; Harrogate district for the central section; and the City of York for the north section of the Study Area.

12.5.62 The TEMPro growth rates are as follows:

- 2019 – 2021:
 - Selby – 1.025;
 - Harrogate – 1.023; and
 - York - 1.0.29.

12.5.63 HGV growth has been based on the DfT (2021) publication 'TRA2501c - Road traffic (vehicle miles) by vehicle type in Great Britain'²⁴. Table TRA2501c provides a summary of annual road traffic (vehicle miles) by vehicle type from October 1995 to June 2021, presented in quarter periods for each year.

12.5.64 To understand traffic growth to 2022, a methodology was required to take into account issues with HGV traffic growth in 2020, 2021 and 2022 due to the ongoing COVID-19 pandemic. Traffic growth in 2020 and 2021 saw large reductions in HGV traffic as lockdowns were in place across the UK. As such it was considered that using the last reliable year of HGV growth (2019) would be the best approach for understanding 2020, 2021 and 2022 growth. The following methodology was therefore used.

- the growth factor from 2018 to 2019 was 0.375%;
- estimated growth between 2019 and 2022 is assumed as 0.375% per annum, or 0.76% over the two years; and
- the growth for 2019 – 2021 (1.125%) provides an HGV growth rate of 1.01125

12.5.65 The growth rates above have been agreed with the local highways authorities.

2022 Traffic Surveys

12.5.66 A commitment was made in the PEIR to survey all locations where no traffic data was presented at PEIR or where traffic data older than 2015 had been used. This commitment has resulted in new 2022 traffic surveys at five locations:

- Wiggington Road;
- Osbaldwick Link Road;
- Station Road;
- Church Hill; and
- A19 (Shipton).

12.5.67 These fully classified traffic surveys were undertaken between Monday 6 June 2022 and Sunday 12 June 2022 via a combination of pneumatic tube automatic traffic counts (ATCs) and radar speed and traffic data detection units.

12.5.68 In addition to the PEIR commitment for traffic surveys, as part of the design process for visibility splays at proposed construction accesses, a number of speed/traffic surveys were also undertaken. It was considered, in agreement with the local highways authorities CYC and NYCC that where these were available and appropriate these should be used rather than the historic DfT Traffic data. As such, 2022 traffic counts have also been used to inform assessment in this chapter at the following locations;

- Common Croft Lane;
- Overton Road;
- B122 Church Lane; and
- Church Lane.

Baseline Traffic Data Summary

12.5.69 **Table 12.9** sets out the annual average daily flow (AADF) for the DfT traffic data from 2019 and the resultant 2022 baseline traffic based on the application of the growth factors, as well as the 2022 traffic survey data used to inform assessment. These are the locations used to inform the assessment presented later in this chapter and agreed locations with the relevant local highway authorities.

Table 12.9 - 2022 baseline traffic data (AADF)

Highways Link	Details	Historic Traffic Data (DfT 2019)		2022 Base		
		Total vehicles	HGVs	Total Vehicles	HGVs	HGV%
1	A63 – Between Rawfield Lane and A162	14338	2176	14886	2448	16.4%
2	A659 - Between A64 and A659	5387	261	5550	294	5.3%
3	A64 - Between Paradise Lane and A659	58571	3646	60422	4102	6.8%
4	Weatherby Road - Between Tower Crescent and Station Road	4499	35	4617	39	0.8%
5	A1237 - Between Askham Bryan Lane and Broad Lane	27967	1419	28917	1596	5.5%
6	A59 - Between Cat Lane and Newlands Lane	18617	804	19236	905	4.7%
7	Common Croft Lane - North of A59	N/A ²⁶		128	2	1.6%
8	A59 - Between Low Road and Pool Lane	18617	804	19236	905	4.7%
9	A1237 - Between A1237 and Esk Drive	38923	1295	40180	1457	3.6%
10	A19 - Between Fairfields Drive and Stripe Lane	9964	637	10315	717	7.0%
11	Overton Road - Between Stripe Lane and A19	N/A		135	16	11.9%
12	B1363 - Between Mill Lane and A1237	N/A		9910	206	2.1%
13	A1079 - Between A64 and Osbaldwick Link Road	13932	286	14365	322	2.2%
14	A64- Between Common Lane and Forest Lane	50567	3119	52338	3509	6.7%
15	A63 - Between Westfield Lane and A1246 Turn Off	10872	875	11208	984	8.8%

²⁶ N/A- Locations where 2022 traffic surveys have been used to inform the baseline.

Highways Link	Details	Historic Traffic Data (DfT 2019)		2022 Base		
		Total vehicles	HGVs	Total Vehicles	HGVs	HGV%
16	A168 - Between A58 and Walton Road	12048	374	12391	421	3.4%
17	B1222 - Church Lane - Wighill	N/A		456	32	7.0%
18	Osbaldwick Link Road - Between A1079 and Murton Way	N/A		3421	86	2.5%
19	Station Road - Between A659 and Weatherby Road	N/A		3012	256	8.5%
20	B1222 - Church Hill - Sherburn in Elmet	N/A		4156	485	11.7%
21	A1(M) Between A659/A168 and A64	109296	17047	113770	19178	16.9%
22	A1(M) Between A53 and M62	143012	20216	148327	22743	15.3%
23	M1 Between A63 and A1(M)	80319	8047	82966	9053	10.9%
24	A19 - Shipton	N/A		12190	1581	1%
25	Church Lane - North of A59	N/A		374	4	1.1%

High level accident data review

12.5.70 Personal Injury Accident (PIA) data has been obtained from data provided by CYC in 2022. It was not possible, due to an error with the accident data database at NYCC, to seek this data for the NYCC area (and LCC area) and as such CrashMap for the latest five-year period (01 January 2016 – 31 December 2020) has continued to be used for that area. CYC have been notified of this approach. There are no accidents on the LCC road section (Warren Lane and Spen Common Lane) and therefore there is no need to notify LCC. The extent of the Study Area is illustrated in **Figure 12.6, Volume 5, Document 5.4.12** of this document.

12.5.71 The purpose of assessing recorded PIAs is to determine whether there is a history of accidents on construction traffic routes within the Study Area, and to investigate whether there are any patterns or contributing factors to the accidents recorded. Clusters of accidents could indicate that improvements are required to enable development to proceed as additional traffic generated during the construction phase may exacerbate existing safety issues. Further consideration has been given to those

accidents involving vulnerable road users (cyclists/pedestrians) as part of this assessment.

12.5.72 The impact of casualties differs according to the severity of the injuries sustained. Three groups are usually differentiated as follows:

- fatal: any death that occurs within 30 days from causes arising out of the accident;
- serious: records casualties who require hospital treatment and have lasting injuries, but who do not die within the recording period for a fatality; and
- slight: where casualties have injuries that do not require hospital treatment, or, if they do, the effects of the injuries quickly subside.

12.5.73 The accident assessment in this chapter has been undertaken for the entire Study Area. The assessment below only includes links where accidents were noted.

12.5.74 There are several elements of the network where zero accidents were recorded in the time frame set out above. Links with zero accidents are set out in **Table 12.10**. Access numbers used to define link lengths are set out in **Section 12.8**.

Table 12.10 – Highways links in Study Area with no recorded accidents

Links with Zero Accidents			
Rawfield Lane Between A63 and Hillam Lane	East of Garnet Lane Between A659 and Access 35	Church Lane Between A59 and Access 77	Newlands Lane Between A59 and Broad Lane
Westfield Lane Between A63 and Access 10	Garnet Lane Between A659 and Access 35	Red House Lane Between Church Lane and Access 73	Common Croft Lane Between Broad Lane and Newlands Lane
Whitecote Lane Between B1222 and Access 11	Murton Way Between Osbalwick Road and Access 104	Marston Lane Between A59 and Atterwith Lane	Stripe (N) Lane Between Shipton Road and Access 81
Laith Staid Lane Between St Johns Lane and Access 18	Wighill Lane (N) Between Church Lane and Access 57	Tockwith Road Between Marston Lane and Access 63	Healaugh Lane Between B1224 and Access 58
Spenn Common Lane Between Paradise Way and Access 38	Osbalwick Road Between A64 and Murton Way		

Recorded accidents

12.5.75 A total of 176 accidents were recorded over the time periods set out above and agreed with CYC and NYCC on the roads within the Study Area. Of the 176 accidents recorded, 9 accidents were recorded as fatal, 42 accidents were recorded as serious and 1,125 accidents were recorded as slight. **Table 12.11** provides a summary of the accidents and location of occurrence.

12.5.76 Accident severity is defined as follows;

- a fatal accident is an accident in which at least one person is fatally injured;

- a serious accident is one in which at least one person is seriously injured, but no-one suffers a fatal injury; and
- a slight accident is one in which at least one person suffers slight injuries, but no-one is seriously injured, or fatally injured.

12.5.77 Where traffic data is available for a road link, a calculation of the accident rate per million vehicle kilometres has been undertaken which is a means of assessing the number of accidents against national statistics. For those links where there is no traffic data available, the accidents recorded have been provided but without the calculation of the accident rate.

12.5.78 Estimated annual flows have been calculated by using the 2022 base year for traffic for 24 hours multiplied by 365 days of the year.

Table 12.11 – PIA data summary (January 2015 – December 2019)

Vicinity	Severity			Total	PIA p.a.	Link Lengths (km)	Estimated Annual Flow	PIA p.a. Million Vehicle km
	Slight	Serious	Fatal					
A162 between Access 1 (Figure 12.8) and A63	0	1	0	1.00	0.20	1.00	2,226,135	0.09
Butts Lane Between A63 and Redhill Lane	1	1	0	2	0.40	0.80		
A63 Between A1246 and A162	6	2	0	8	1.60	2.64	5,433,433	0.11
Great North Road Between A63 and Selby Road	6	2	1	9	1.80	2.43	4,038,360	0.18
B1222 Between A63 and St Johns Lane	12	4	1	17	3.40	4.18	1,516,940	0.54
St Johns Lane Between B1222 and Laith Staid Lane	0	1	0	1	0.20	0.29		
B1217 Between M1 and Access	8	4	1	13	2.60	5.99		

Vicinity	Severity			Total	PIA p.a.	Link Lengths (km)	Estimated Annual Flow	PIA p.a. Million Vehicle km
	Slight	Serious	Fatal					
Point 27 (Figure 12.8)								
Copley Lane Between B1217 and Coldhill Lane (N)	0	1	0	1	0.20	1.83		
Coldhill Lane Between Coldhill Lane (N) and Access 20 (Figure 12.8)	1	0	0	1	0.20	0.78		
Coldhill Lane (N) Between Copley Lane and Access 24 (Figure 12.8)	1	0	0	1	0.20	1.15		
Paradise Way Between A64 and Spen Common Lane	1	0	0	1	0.20	0.70		
A659 Between A64 and Station Road	1	1	0	2	0.40	3.23	2,025,695	0.06
A659 Between Station Road and	1	1	0	2	0.40	1.20	4,522,835	0.07

Vicinity	Severity			Total	PIA p.a.	Link Lengths (km)	Estimated Annual Flow	PIA p.a. Million Vehicle km
	Slight	Serious	Fatal					
Access Point 46 (Figure 12.8)								
Church Lane/Wighill Road Between Access Point 48 (Figure 12.8) and Wighill Lane (N)	2	1	0	3	0.60	2.38	1,685,126	0.15
Wighill Lane (W) Between Church Lane and Wetherby Road	1	2	0	3	0.60	3.54	166,440	1.02
Wetherby Road/Walton Road Between Wighill Lane and A168	1	0	0	1	0.20	3.21	2,526,530	0.02
A168 Between Walton Road and A1 (M)	2	2	1	5	1.00	2.71	4,522,835	0.08
B1224 Between A1 (M) and Access Point 61 (Figure 12.8)	13	6	1	20	4.00	8.60	2,319,210	0.20

Vicinity	Severity			Total	PIA p.a.	Link Lengths (km)	Estimated Annual Flow	PIA p.a. Million Vehicle km
	Slight	Serious	Fatal					
Atterwith Lane Between Marston Lane and Tockwith Road	0	1	0	1	0.20	1.99		
A59 Between B6265 and A1237	11	5	2	18	3.60	11.18	7,021,136	0.05
A59 Between B6265 and A1(M)	9	3	0	12	2.40	5.04	7,021,136	0.07
A1237 Between A64 and B1224	3	0	1	4	0.80	4.16	10,554,747	0.02
A1237 Between B1224 and A59	3	1	0	4	0.80	1.87	10,554,747	0.04
Overton Road Turning Between A19 and Access Point 82 (Figure 12.8)	2	0	0	2	0.40	2.13	49,421	3.80
A1237 Between A59 and A19	11	1	0	12	2.40	2.01	14,304,124	0.08
A19 Shipton Road (N)	4	1	0	5	1.00	1.53	3,765,015	0.17

Vicinity	Severity			Total	PIA p.a.	Link Lengths (km)	Estimated Annual Flow	PIA p.a. Million Vehicle km
	Slight	Serious	Fatal					
Between A1237 and Stripe Lane								
A19 Between Stripe Lane and Overton Road	4	0	1	5	1.00	2.27	3,765,015	0.12
A1237 Between A19 and B1363	10	1	0	11	2.20	2.33		
B1363 Between A1237 and Corban Lane	1	0	0	1	0.20	2.67	3,617,223	0.02
Plainville Lane Between Corban Lane and Access Point 100 (Figure 12.8)	1	0	0	1	0.20	1.16		
Corban Lane Between Sutton Road and Access Point 95 (Figure 12.8)	1	0	0	1	0.20	2.98		
A1079 Between Osbaldwick Road and A64	8	0	0	8	1.60	1.03	5,243,206	0.30

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12.5.79 From the DfT (2019) reported road casualties for Great Britain 2019 presented in RAS10002 table²⁷, the national accident rate per million vehicle kms by road classification were as follows:

- urban A road: 0.42;
- rural A road: 0.11;
- urban other roads: 0.33; and
- rural other roads: 0.19.

12.5.80 A comparison of the links above and the accident rate per million vehicle km (where available) for the links listed in **Table 12.11** and the national accident rate has been undertaken. This identifies that only five links have an annual accident rate higher than the national average as follows:

- B1222 Between A63 and St Johns Lane; 0.54 compared to 0.19 for a rural other road;
- Wighill Lane between Church Lane and Wetherby Road; 1.02 compared to 0.19 for a rural other road;
- Overton Road between A19 and Access Point 82 (**Figure 12.8, Volume 5, Document 5.4.12** of this document); 3.80 compared to a 0.19 for a rural other road;
- A19 Shipton Road (N) between A1237 and Stripe Lane: 0.17 compared to 0.11 for rural A Road; and
- A19 between Stripe Lane and Overton Road Turning: 0.12 compared to 0.11 for a rural A Road.

12.5.81 It should be noted that for the five links where accident rates are higher than the national average, accident rates may be distorted by several factors and should be treated with caution. For two of the links (A19 at Shipton and A19 between Stripe Lane and Overton Road) the accident rates are only 0.01 and 0.06 above the national average which will not be perceptively different and with daily traffic variations will be around the national averages. It is not considered there is a significant accident record on these two links.

12.5.82 For Overton Road and Wighill Lane the low baseline of traffic flows needs to be considered against the number of accidents. On Wighill Lane only three accidents were recorded (one slight, two serious) in the assessment period and only two were recorded on Overton Road (both slight). These accidents do not indicate a large pattern of accidents on these links and should be treated with some caution.

12.5.83 For the remaining link (B1222) the accidents tend to be in the vicinity of side roads which indicates an issue with vehicle speeds. This route has not been identified as an issue by NYCC as part of the consultation to-date.

²⁷ Department for Transport (2021). Reported road accidents, vehicles and casualties tables for Great Britain (Online). Available at: <https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain> (Accessed October 2021).

Future baseline

12.5.84 In accordance with GEART, the period in which the level of traffic (future baseline plus traffic from the Project) is at its peak will be considered within the assessment. The peak construction period will be based on the indicative construction programme and the anticipated construction traffic movements. The future baseline will take into account traffic growth as a result of new development which will be based on growth factors from the DfT NTEM sourced from TEMPro. As the NTEM includes planning data based on development delivery programmes, the use of TEMPro allows for cumulative traffic growth as a result of committed development within the Study Area.

12.5.85 To understand the future year of assessment for the assessment of transport effects in the construction phase, the traffic generation calculations were interrogated (as set out in **Section 12.8**) to understand the peak weeks for all receptors on highways links. This work confirmed that all peak weeks required to be assessed in this chapter occurred during weeks 30 to 94 of the construction programme for the Project which, based on current delivery timescales, places future years of assessment in 2025 and 2026.

12.5.86 The growth rates from TEMPro are as follows:

- 2021 – 2025:
 - York: 1.025;
 - Selby District: 1.026;
 - Harrogate District: 1.021;
- 2021 – 2026:
 - York: 1.032;
 - Selby District: 1.033; and
 - Harrogate District: 1.028.

12.5.87 The HGV growth rates derived from DfT Table TRA2501c:

- 2021 – 2025: 1.0465; and
- 2021 – 2026: 1.062.

12.5.88 The resultant future year traffic generation is set out in **Table 12.21 – Table 12.22**.

Future highways network changes

12.5.89 A review has been undertaken of committed highways schemes in the local area to understand any future schemes that may need to be included as part of the ES for the DCO application for the Project. The following are noted:

- A1237 York Outer Ring Road Dualling – Construction proposed 2023-2025: As of July 2022, the York Outer Ring Road Dualling project has not formally submitted a planning application, and therefore no construction traffic that could be used to inform future assessment years is in the public domain. It is however considered that not including this traffic presents a worst case for the impacts of the Project. To include any construction traffic as a result of the York Outer Ring Road Dualling project would provide a higher baseline traffic in the future years and reduce the impacts shown in this chapter.

- A1(M) Junction 47 Upgrade – Construction ongoing in 2022: It is considered (in consultation with NH) that this capacity improvement scheme will be delivered before construction of the Project and therefore will form part of the future baseline.

12.5.90 In technical discussions with NYCC, CYC and NH no additional schemes were noted as needing to be considered in any future baseline.

12.6 Embedded measures

12.6.1 A range of environmental measures have been embedded into the Project as outlined in Section 3.4 of **Chapter 3: Description of the Project, Volume 5, Document 5.2.3**. **Table 12.12** outlines how these embedded measures will influence the traffic and transport assessment.

Table 12.12 – Summary of the embedded environmental measures

Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Construction			
Local Roads, PRow and Rail and watercourses	Potential effects from overhead lines being removed from or constructed over existing roads, PRow, rail and watercourses	A crossing schedule will be prepared which includes a crossing methodology for each crossing of road, rail, PRow and watercourse.	Code of Construction Practice (CoCP) (Volume 5, Document 5.3.3B) implemented via DCO requirement 5
PRow	Potential effects on users of existing PRow	Signage and/or temporary PRow/PRow diversions will be provided during construction	CoCP (Volume 5, Document 5.3.3B) / PRowWMP (Volume 5, Document 5.3.3G) implemented via DCO requirement 5
Local and strategic roads and associated receptors	Increased traffic at receptors in settlements and villages	The HGV routing during the construction period to individual accesses will be developed to avoid settlements such as Sherburn in Elmet, South Milford, Micklefield, Saxton, Bramham, Clifford, Boston Spa, Tadcaster Center, Healaugh, Tockwith, Long Marston, Rufforth, Askham, Angram, Nether Poppleton, Central York and Haxby. This measure will limit the effects of the Project in these villages and settlements.	Proposed routing set out in the CTMP (Volume 5, Document 5.3.3F), implemented via DCO requirement 5

Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Local and strategic roads	Damage to local and strategic roads and associated highways safety issues	Highways condition surveys will be undertaken before, during and after the construction phase and repairs conducted to any damage to highways as a result of Yorkshire GREEN construction HGVs on the highways included within the Study Area.	This will be provided within the CTMP (Volume 5, Document 5.3.3F), implemented via DCO requirement 5
PRoW	Delays to users of local PRoW	PRoWs that cross the various existing and proposed overhead line routes will be managed or diverted over the shortest practicable distance with potential to provide adjacent crossings.	PRoWMP (Volume 5, Document 5.3.3G) implemented via DCO Requirement 5
PRoW	Damage to local PRoW	Condition surveys of PRoW on affected sections such as at the overhead line crossing points will be undertaken before, during and after the construction phase. If damage is identified as a result of the construction phase, the damage will be repaired. Post-construction, all PRoWs will be returned to their pre-construction condition or better.	PRoWMP (Volume 5, Document 5.3.3G) implemented via DCO Requirement 5
Local highways network	Temporary access to the local highways network during construction	Construction access will be provided with visibility splays designed to Design Manual for Roads and Bridged (DRMB) or local design standards, whichever is appropriate, as agreed with the relevant highway authorities. This will provide for safe accesses where construction vehicles can access the highways network in a safe way which should reduce the risk of accidents related to the Project.	CTMP (Volume 5, Document 5.3.3F) implemented via DCO Requirement 5, Works plans implemented via DCO (Schedule 1).

Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Local Roads	Permanent access to the local highways network	Permanent accesses will be designed to DMRB or local design standards, whichever is appropriate. This measure will allow for a safe and formal access to be provided to the highways network from permanent infrastructure.	CTMP (Volume 5, Document 5.3.3F) implemented via DCO Requirement 5, Works plans implemented via DCO (Schedule 1)
Strategic and Local Road Network	Highways Safety	All arrangements for scaffolding at road crossings will be agreed with the relevant highway authority. Road closures will be avoided where possible.	CTMP (Volume 5, Document 5.3.3F) implemented via DCO Requirement 5, Works plans implemented via DCO (Schedule 1)
PRoW Network	Management of PRoW Routes during Construction	<p>National Grid proposes to manage and provide mitigation for each PRoW that is affected by the Project and a series of mitigation measures have been set out within the PRoWMP which will be applied to different types of PRoW and, where appropriate and agreed with the relevant highway authority, Open Access Land (OAL) affected.</p> <p>Temporary diversions will ensure that the affected PRoW passes around the work areas or is diverted onto routes away from the haul roads or overhead line works at safe locations that can be managed.</p> <p>The proposed signage strategies will inform the public of the construction schedule and the implications for each affected PRoW.</p> <p>The active management of crossing points and shared accesses will be temporary in nature and will required</p>	PROWMP (Volume 5, Document 5.3.3G) implemented via DCO Requirement 5, Works plans implemented via DCO (Schedule 1)

Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
		site specific signage to inform the public and construction vehicle drivers.	
NCN	Management of NCN Route 65 on Overton Road	<p>Provision of a dedicated 3m (potentially 4m, depending on feasibility) wide off-carriageway cycle route around fields to the south and west of Overton Road to avoid the widened section of Overton Road to be used by construction traffic for the Overton Substation and associated overhead line works for the duration of the construction phase.</p> <p>Cycle path to be designed in consultation with Sustrans and in accordance with Sustrans guidance.</p> <p>Signage for the alternative route due to the length of time it will be in place, will be required and should be consistent with a signage for a permanent diversion.</p>	This will be detailed within the CTMP (Volume 5, Document 5.3.3F), implemented via DCO Requirement 5
Rawcliffe Lane/A63 Junction	Potential safety issue relative to right turning HGVs from A63 to Rawfield Lane.	Agreement was reached with NYCC that to alleviate any potential highways safety issues regards access to Rawfield Lane for HGVs routing from the west, a left in left out arrangement would be the best approach at the junction. Traffic from the west would route east along the A63, past Rawfield Lane and then reach a roundabout with the A162. Here traffic can undertake a turn around the roundabout and route back on the A63 west bound and make a left turn into Rawfield Lane.	This will be detailed within the CTMP (Volume 5, Document 5.3.3F), implemented via DCO Requirement 5

- 12.6.2 As part of the Project design process, a number of embedded measures are proposed to reduce the potential for impacts on transport network users (see **Table 12.12**). These measures typically include those that have been identified as good or standard practice and include actions that would be undertaken to meet existing legislative requirements.
- 12.6.3 In addition to the embedded environmental measures set out in **Table 12.12**, two supporting documents have been prepared to support the ES assessment including:
- A **CTMP (Appendix 3F - Volume 5, Document 5.3.3F)** which sets out details of the construction traffic access strategy that underpins the assessment in this chapter, and the mitigation and management of construction traffic flows; and
 - A **PRoWMP (Appendix 3G – Volume 5, Document 5.3.3G)** which sets out details of the impacts of the Project on the PRoW network and, where appropriate, OAL and the management and mitigation required.
- 12.6.4 Many of the embedded environmental measures set out in **Table 12.12** form key management and mitigation proposals set out in these additional documents.

12.7 Scope of the assessment

The Project

- 12.7.1 **Section 12.1** of this document provides an overview of the Project. A more detailed description of the Project design and construction methodology can be found in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3**.

Spatial scope

Overview

- 12.7.2 The spatial scope of the assessment is based on the most probable routes for traffic generated by the Project, for the movement of deliveries, equipment and of staff. Identification of appropriate routes takes into consideration the following:
- restrictions such as weight and height limits; and
 - avoidance of major and small settlements;
 - suitability of routes based on a review of road types and widths.
- 12.7.3 The development of a Study Area for Yorkshire GREEN has focused on the wider road network to be used by traffic for all construction activity which will comprise a range of routes due to the number of potential access points along the Project.
- 12.7.4 The assessment considers the impact of construction traffic on highway links to be used for HGV access, proposed Project accesses and takes into account the sensitivity of local roads, as set out in **Section 12.9**. The proposed highway links to be assessed are set out in **Figure 12.7, Volume 5, Document 5.4.12** and these are detailed in **Table 12.13**.

Table 12.13 – Highways links identified for assessment

Highways Link	Link Names	Highways Link	Link Names
1	A63 between Rawfield Lane and A162	13	A1079 between A64 and Osbaldwick Link Road
2	A659 between A64 and Garnett Lane	14	A64 between Common Lane and Forest Lane
3	A64 between Paradise Lane and A659	15	A63 between Westfield Lane and A1246 Turn Off
4	Weatherby Road between Tower Crescent and Station Road	16	A168 between A58 and Walton Road
5	A1237 between Askham Bryan Lane and Broad Lane	17	Church Lane - Wighill
6	A59 between Cat Lane and Newlands Lane	18	Osbaldwick Link Road – between A1079 and Murton Way
7	Common Croft Lane between Broad Lane and Lords Lane	19	Station Road between A659 and Weatherby Road
8	A59 between Low Road and Pool Lane	20	B1222 Church Hill – Sherburn in Elmet
9	A1237 between A1237 and Esk Drive	21	A1(M) between A659/A168 and A64
10	A19 between Fairfields Drive and Stripe Lane	22	A1(M) between A53 and M62
11	Overton Road between Stripe Lane and A19	23	M1 between A63 and A1(M)
12	B1363 between Mill Lane and A1237	24	A19 at Shipton
		25	Church Lane North of the A59

12.7.5 In order to understand the wider impact of the construction traffic on the SRN, Highways Links 3, 14, 21, 22 and 23 have been used within the assessment in this chapter to allow for robust assessment of the SRN even though as set out in **Section 12.9** these are not sensitive links for traffic.

Temporal scope

12.7.6 The temporal scope of the assessment of traffic and transport effects is consistent with the period over which the construction of the Project would be carried out. This covers the period 2025 to 2026 which has been identified as the years in which the peak impacts will occur during the overall construction phase which runs between 2024 to 2028.

12.7.7 The Project is expected to have a life span of more than 80 years. If decommissioning is required at this point in time, then activities and effects associated with the decommissioning phase are expected to be of a similar level to those during the construction phase works, albeit with a lesser duration of two years. Therefore, the likely significance of effects relating to the construction phase assessment will be applicable to the decommissioning phase and decommissioning effects are not discussed further in this chapter.

Potential receptors

12.7.8 The spatial and temporal scope of the assessment enables the identification of receptors which may experience a change as a result of the Project. GEART (IEA, 1993) identifies particular groups and special interests that may be sensitive to changes in traffic conditions which can be defined as:

- local roads and the users of those roads; and
- land uses and environmental resources fronting those roads, including the relevant occupiers and users.

12.7.9 GEART suggests potentially affected groups and special interests that may be sensitive to changes in traffic conditions that should be considered and specifies that others can be added if appropriate. The receptors identified which may experience likely significant transport effects as a result of the construction of the Project that are considered within this traffic and transport assessment are set out in **Table 12.14**.

Table 12.14 – Receptors requiring assessment for transport

Receptor Group	Receptors included within group
Traffic and transport highways receptors (IEA, 1993)	People in work places
	People at home
	Sensitive groups including children, elderly and disabled
	Sensitive locations such as hospitals, churches, schools and historical buildings
	People walking and cycling and equestrians
	Open spaces, recreational areas and shopping areas
	Sites of tourist/visitor attractions
	Highway links on the local and strategic network that currently suffer from congestion in the peak hours of the day may also need to be considered for further assessment as this has potential to impact on “users of the roads”.

Likely significant effects

12.7.10 The effects on traffic and transport receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 12.15**.

Table 12.15 – Traffic and transport receptors scoped in for further assessment

Receptor	Likely significant effects
Construction phase (including reconductoring and dismantling works)	
All receptors (Table 12.14) on identified highways links (Table 12.13)	Impact of construction traffic on users of the road or occupants alongside the road, such as severance, delay, loss of amenity, intimidation, road safety.
PRoW crossed by the Order Limits	Impact of construction activities on users of the affected PRoWs, such as loss of amenity, intimidation and safety.
Highways links crossed by the Order Limits	Impact of construction activities on users of local and strategic roads, such as delay.

12.7.11 The receptors/effects detailed in **Table 12.16** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

Table 12.16 – Summary of effects scoped out of the traffic and transport assessment

Receptors/potential effects	Justification
Effects on users of all local roads, PRoW, Rail lines and navigable watercourses during operation and maintenance	The potential effects of traffic impacts in the operational and maintenance phase of the Project have been scoped out from assessment due to the negligible amounts of traffic generated in this phase as agreed with the Planning Inspectorate and set out in Table 12.3 .
Impact of conveyance of Hazardous Loads on local and strategic highways during construction, operation and maintenance	There are no hazardous loads anticipated on the Project so as agreed with the Planning Inspectorate in Table 12.3 these have been scoped out of assessment.
Potential effects on the capacity of local roads and junctions during construction, operation and maintenance	The requirement for a Transport Assessment and associated capacity assessments has been scoped out of further assessment as agreed with the Planning Inspectorate in Table 12.3 due to anticipated very low traffic flows in this phase of the development.
Potential effects on bus services and bus routes during the construction phase of the development	Roads along which bus services are provided that fall within the Order Limits would be protected through the use of scaffolding

Receptors/potential effects	Justification
	<p>(where overhead lines cross the road). This would avoid the need to close the road and the requirement to divert any bus services and therefore would not affect the bus service.</p> <p>It is considered therefore that local bus service provision will not be significantly affected by the Project and no further consideration is made in this chapter.</p>

12.8 Assessment methodology

- 12.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Approach to EIA, Volume 5, Document 5.2.4**. However, whilst this has informed the approach that has been used in this traffic and transport assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this traffic and transport assessment.
- 12.8.2 The Traffic and Transport assessment methodology for the ES is consistent with that provided in the Scoping Report and at PEIR and no changes have been made since the scoping phase.

General approach

- 12.8.3 The guidance that is followed when assessing the potential significance of road traffic effects is the GEART, IEA, 1993, which states that:
- “The detailed assessment of impacts is likely to concentrate on the period during which the absolute level of an impact is at its peak, as well as the hour at which the greatest level of change is likely to occur.”* (Paragraph 3.10, IEA, 1993).
- 12.8.4 To assess the impact at its peak, the likely percentage increase in traffic is determined by comparing estimates of traffic generated by the Project with future predicted baseline traffic flows on the highways links within the defined Study Area.
- 12.8.5 GEART sets out the following transport effects that need to be considered in any assessment:
- severance: the separation of people from places and other people and places or impede pedestrian access to essential facilities;
 - driver delay: traffic delays to non-development traffic;
 - pedestrian amenity: the effect on the relative pleasantness of a pedestrian journey as a result of changes in traffic flow, traffic composition and pavement width/separation from traffic;
 - pedestrian delay: the ability of people to cross roads as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions;
 - fear and intimidation: these may be experienced by people as a result of an increase in traffic volume and its proximity or the lack of protection caused by such factors as narrow pavement widths;

- accidents and safety: the risk of accidents occurring where the Project is expected to produce a change in the character of traffic; and
 - hazardous loads.
- 12.8.6 Cumulative effects on traffic and transport resulting from the effects of the Project and other developments have been assessed at this stage through the use of traffic growth rates derived from the TEMPro and DfT Statistics.
- 12.8.7 Permitted/committed developments within and in the vicinity of the transport Study Area that will result in additional traffic on the road network are considered to be included within the TEMPro traffic growth rate.

Determination of significance

- 12.8.8 The EIA Regulations recognise that developments will affect different environmental elements to differing degrees, and that not all of these are of sufficient concern to warrant detailed investigation or assessment through the EIA process. The EIA Regulations identify those environmental resources that warrant investigation as those that are likely to be significantly affected by the Project.
- 12.8.9 The EIA Regulations do not define significance and it is necessary to state how this will be defined for the EIA. The significance of an effect resulting from a development during construction or operation is most commonly assessed by reference to the sensitivity (or value) of a receptor and the magnitude of the change. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the Project.
- 12.8.10 GEART provides two rules that are used to establish whether an environmental assessment of traffic effects should be carried out on receptors:
- Rule 1: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
 - Rule 2: Include sensitive areas where traffic flows are predicted to increase by 10% or more. These include locations with vulnerable road users, such as schools, nursing homes, and locations with high pedestrian activity.
- 12.8.11 It should be noted that, according to GEART, predicted traffic flow increases below 10% are generally not considered to be significant as daily variations in background traffic flow may fluctuate by this amount. Changes in traffic flows below this level are, therefore, assumed not to result in significant environmental effects.
- 12.8.12 **Table 12.17** sets out how significance will be determined based on receptor sensitivity and the magnitude of change.

Table 12.17 -Significance evaluation matrix

		Magnitude of change			
		High	Medium	Low	Negligible
Receptor sensitivity	High	Major (Significant)	Major (Significant)	Moderate (Significant)	Negligible (Not significant)
	Medium	Major (Significant)	Moderate (Significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Moderate (Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)
	Negligible	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

12.8.13 The following terms have been used to classify the level of transport effects, where they are predicted to occur:

- **major adverse or major beneficial** – where the Project will cause a significant deterioration or improvement to the existing environment;
- **moderate adverse or moderate beneficial** – where the Project will cause a noticeable deterioration or improvement to the existing environment;
- **minor adverse or minor beneficial** – where the Project will cause a small deterioration or improvement to the existing environment; and
- **negligible** – no discernible deterioration or improvement to the existing environment.

12.8.14 For the purposes of the transport assessment presented in this chapter, major and moderate effects are considered to be ‘Significant’, whilst minor and negligible effects are considered ‘Not Significant’.

12.8.15 Effects can also be described, for example, as:

- temporary (short-term, medium-term, long-term) or permanent; and
- area extent – highway link, local area, district-wide, county-wide, regional or national level.

Receptor sensitivity

12.8.16 The sensitivity of each highway link to be included in the assessment will be assigned in accordance with the advice provided in the GEART, as summarised in **Table 12.18** and based on professional judgement.

Table 12.18 – Receptor sensitivity

Sensitivity	Description/reason	Receptor
High	Receptors of high sensitivity to change in traffic flows: schools, colleges, playgrounds, accident blackspots, retirement homes and urban/residential homes without footways that are used by pedestrians and cyclists.	People travelling to and from work or home on foot, bicycle or horse. Adjacent land uses to the road.
Medium	Receptors of medium sensitivity to change in traffic flows including congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycle ways, community centres, parks and recreation facilities.	People travelling to and from work or home on foot, bicycle or horse. Adjacent land uses to the road
Low	Receptors with low sensitivity to change in traffic flows: places of worship, public open space, nature conservation areas, listed buildings, tourist/visitor attractions and residential areas with adequate footway provision.	People travelling to and from work or home on foot, bicycle or horse. Adjacent land uses to the road
Negligible	Receptors with negligible sensitivity to change in traffic flows including Motorways and Dual Carriageways and/or land uses sufficiently distant from affected routes and junctions.	People travelling to and from work or home on foot, bicycle or horse. Adjacent land uses to the road

12.8.17 In accordance with GEART, where the sensitivity of a road link is judged as high or medium, Rule 2 will be applied and where traffic flows are predicted to increase by 10% or more, an assessment of environmental effects will be undertaken. Where the sensitivity is judged as low or negligible, Rule 1 will be applied and where traffic flows are predicted to increase by more than 30%, or where the number of HGVs is predicted to increase by more than 30%, an assessment of environmental effects will be undertaken of the road link.

Magnitude of change

12.8.18 GEART recognises that professional judgement should be used as part of the assessment and states the following:

“For many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed-up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact as well as the assessment of the damage to various natural resources.” (Paragraph 4.5, IEA, 1993)

12.8.19 Based on Rule 1 and Rule 2 and the sensitivity of the receptors, **Table 12.19** shows the magnitude of change which will be applied to the environmental effects to help identify levels of significance. The indicators to assess the magnitude of change are based on advice included within GEART and professional judgement.

Table 12.19 – Magnitude of change

Transport Effect	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows over 90%	Change in total traffic or HGV flows of 60%-90%	Change in total traffic or HGV flows of 30-60%	Change in total traffic or HGV flows of less than 30%
Driver Delay	High increase in queuing at junctions and/or congestion on road links	Medium increase in queuing at junctions and/or congestion on roads links	Low increase in queuing at junctions and/or congestion on roads links	Low or no increase in queuing at junctions and/or congestion on roads links
Pedestrian amenity	Based on general level of pedestrian activity, visibility and physical conditions such as traffic flow, traffic composition, crossing points and pavement width/separation from traffic			
Pedestrian delay				
Pedestrian fear and intimidation				
Accident and Safety	Informed by a review of existing collision patterns and trends based upon the existing personal injury accident records and the forecast increase in traffic.			

Undertaking further assessments

12.8.20 The approach to the traffic and transport assessment as set out in this section is in accordance with the GEART. The main transport effects associated with the Project traffic movements within the transport Study Area are:

- construction staff vehicles, including cars and light vans;
- HGVs – vehicles 3.5t gross weight (>3.5t) delivering materials and equipment; and
- AILs – vehicles with abnormal loads.

12.8.21 Two management plans related to traffic and transport have been provided, a **CTMP (Appendix 3F, Volume 5, Document 5.3.3F)** and a **PRoWMP (Appendix 3G, Volume 5, Document 5.3.3G)**. It has been agreed with the Planning Inspectorate and later with the relevant local highways authorities that a Transport Assessment will not be required as the peak hour traffic flows associated with the Project are anticipated to be very low.

12.8.22 Where likely significant transport effects are identified, mitigation requirements are presented in this chapter in **Section 12.6**.

Project details used to inform the assessment methodology

12.8.23 The assessment is based on the impact within the Study Area of the traffic generated by the construction of the Project, distributed on the road network to the access points for overhead line works and to the TCCs over the duration of the construction programme.

12.8.24 During construction, TCCs will be installed at Overton and Monk Fryston Substations as well as at the CSEC locations (seven compounds in total) and access points are required so that vehicles can access the working areas at the pylons and new permanent access routes would be provided for the construction and operation of the CSECs at Shipton and Tadcaster and the Overton Substation.

Construction Access Points

12.8.25 The proposed access points are shown in the **Access, Rights and Way and Public Rights of Navigation Plan, Volume 3, Document 2.7.1 – 2.7.6** which shows 104 access points.

Temporary Construction Compounds (TCC)

12.8.26 Prior to setting out the details of the traffic generation for the elements of the Project it is worth considering the details with regards TCCs on the project.

12.8.27 The Project requires seven TCCs. at three of the locations a TCC is needed for the substation/CSEC works and one for the overhead line works. At Tadcaster these works have one combined TCC. **Table 12.20** indicates the locations, the access points and which element the TCC is proposed to be used for.

Table 12.20 – TCC PEIR Locations

TCC location	Access Point	TCC Used for
Monk Fryston TCC	East – AP2	Monk Fryston Substation
	West – AP5	Overhead line Works
Overton Substation TCC	East – AP89	Overton Substation
	West – AP90	Overhead line Works
Shipton TCC	South – AP95	Overhead line Works
	North – AP98	Shipton CSEC
Tadcaster TCC	AP30	Tadcaster CSEC and Overhead line Works

12.8.28 The remainder of this section sets out the details of how the traffic generation and distribution used to inform the assessment in **Section 12.9** has been developed.

Traffic generation

12.8.29 There are several elements of the Project that will generate construction traffic movements during the indicative 198 week programme. The traffic generation has been split down to that generated by the overhead line works and that generated by the substations and CSECs. The following section sets out the details of the overall traffic predictions made by engineers on the Project for these aspects.

Overhead line works

12.8.30 The overhead line work that would generate traffic has been calculated for the following elements:

- pre-construction works:
 - pre-site surveys;
 - ground investigations;
 - foundation upgrades; and
 - TCC establishment.
- access and pylon works, conductor works and dismantling:
 - bellmouth construction;
 - stone/interlocking panels access tracks;
 - bridge and culvert crossings;
 - pylon working areas;
 - pylon foundations;
 - steelwork delivery, assembly and pylon erection;
 - underground cable installation;
 - Crossing protection (scaffolding);
 - conductor works including installation, sagging, clamping in, attaching jumpers and conductor spacers; and
 - pylon dismantling.
- Reinstatement;
- Essential and replacement planting;
- Third party diversions;
- Environmental surveys
- Ongoing refuelling, maintenance and security/surveillance staff at the TCCs.

12.8.31 The number of construction vehicles associated with these elements is presented in **Appendix 12A – Table 12A.1, Volume 5, Document 5.3.12.**

Substation/CSEC works

12.8.32 The substation and CSEC/cable installation works that would generate traffic has been calculated for the following elements for each site (as necessary):

- civil enabling works:
 - bellmouth access;
 - haul roads (temporary access roads);

- establish temporary construction compound (including earthworks, drainage, service connections, pavement, fencing and gates and the installation of offices and welfare facilities);
- establish main compound (main enabling works including earthworks, surfacing, fencing and gates and drainage).
- main works (civil):
 - foundations for electrical equipment;
 - troughing;
 - permanent access roads;
- main works (erection of electrical substation structures, connection of cables and conductors and commissioning):
- main works (close out and demobilise):
 - remove and reinstate the temporary compound areas;
 - Remove and reinstate temporary roads; and
 - landscaping.

12.8.33 The number of construction vehicles associated with these elements is presented in **Appendix 12A – Table 12A.2, Volume 5, Document 5.3.12** of this document.

Construction programme

12.8.34 To provide the detail for estimating and modelling construction traffic a proposed Project programme across 4.5 years (2024-2028) has been utilised. For the calculation of traffic generation peaks a programme for weeks 1 to 198 has been used which covers 2024 to April 2028. Beyond April 2028 only very minor works at the substations will be ongoing in the form of reinstatement works which will be spread-out across the rest of the year and generate just a few movements a day.

12.8.35 Week 1 of the construction programme has been defined for the calculations in this chapter as 8 July 2024 and week 198 as w/c 24 April 2028.

12.8.36 The construction programme for the overhead line works breaks down the key works set out above but to a greater level of detail including specifics of works required to the different parts of the proposed overhead line networks such as dismantling and erection of lines during specific line outages. The overhead line programme is a complex arrangement with large periods of time where no work will be undertaken at certain locations because of the outage sequence needed to construct the project. The following section sets out the traffic generation of the differing elements of the programme. It presents a summary of the way in which traffic flows for the Project have been developed first for the overhead line works and then the works at the substations and CSECs.

12.8.37 For all works described below it is assumed that various staff vehicles would be required including 4x4/pick up, crew bus and welfare van.

Overhead line works

Pre-site surveys

- 12.8.38 A line survey is required before the construction works commence along the route and this would take place at the start of the construction programme in weeks 1 to 13.
- 12.8.39 The line survey consists of a route review along the intended path of the overhead line routes and is completed by two teams of two staff in one 4x4/pickup. There is no requirement for HGVs to complete this task.
- 12.8.40 This results in each access requiring two two-way Light Vehicle (LV) movements in total.

Ground investigations

- 12.8.41 The initial ground investigations (GI) works are required at the start of the construction programme prior to works being undertaken and would take place in weeks 7 to 19.
- 12.8.42 The GI works are needed to understand existing ground conditions and would require the need for some materials and plant movements facilitated by HGV including a Low Loader and HIAB wagon.
- 12.8.43 This results in each access requiring six two-way LV movements in total and ten two-way HGV movements in total.

Foundation Upgrades

- 12.8.44 There is a requirement to upgrade foundations at a number of existing pylons at an early point within the construction programme. This is required at 24 pylons across the Project on the XC overhead line only.
- 12.8.45 The works required at each pylon are predicted to require 88 two-way LV movements and 58 two-way HGV movements and this work is proposed to be undertaken in weeks 7 to 27.
- 12.8.46 To complete the construction of the proposed foundation upgrades this would require the use of a grab wagon, low loader, concrete mixer and HIAB Wagon.

Temporary Construction Compound establishment

- 12.8.47 There are four TCCs required on the Project for the overhead line works that need to be established at differing times of the Project programme: one at Shipton CSEC, one at Overton Substation, one at Monk Fryston Substation. The overhead line works will share a compound with the substation works at Tadcaster and the traffic generation that results from this has also been included in this section.
- 12.8.48 The compounds at Overton and Tadcaster and Shipton are predicted to account for 75% of the LV movements for establishing compounds. These three TCCs would be constructed from Week 4 to Week 18 of the programme.
- 12.8.49 The compound at Monk Fryston would be constructed in weeks 30 – 37 due to the work in this area starting later in the construction programme and would account for 25% of the LV trips for this activity. This results in 720 two-way LV movements per TCC access in total.

12.8.50 Construction of the compounds including hard standing, staff facilities, fencing and access requirements would require a low loader, HIAB wagon, grab wagon, tipper, skip wagon, utility vehicles, small crane and road sweepers. The HGV split is assumed to be 90% to Overton, Tadcaster and Shipton and 10% to Monk Fryston taking into account complexity of construction at the various sites. This results in 1586 two-way movements to each of Overton, Tadcaster and Shipton and 592 two-way movements to Monk Fryston.

12.8.51 Traffic associated with the remaining three TCCs is included in the substation traffic generation set out below.

Bellmouth construction

12.8.52 There are a number of accesses to the various elements of the Project that are proposed to have a bellmouth access constructed where either a suitable bellmouth or other existing access does not exist.

12.8.53 The bellmouths would be constructed in the two weeks before main works commence at each access which results in bellmouth works across Weeks 1 and 143 with the staggered nature of the works proposed with some weeks in this phase where no bellmouth construction is ongoing.

12.8.54 To complete the construction of the proposed bellmouths, including any visibility requirements, carriageway tie in and other gate and fence works, would require a tipper, low loader, tarmac tipper and HIAB wagon, skip wagon and road sweepers.

12.8.55 This results in each bellmouth requiring 14 two-way HGV and 26 two-way LV movements across the two-week period.

Stone/interlocking panels access tracks

12.8.56 Each working area has a differing need for access tracks (including safety fences and gates) in terms of distance and nature of material required to allow vehicles to leave the local highways network and access various working areas.

12.8.57 The works for installing on-site access tracks are required at differing periods of the construction programme due to the differing nature of the works that would be undertaken across the construction programme. The on-site access tracks will be constructed between week 4 and week 146.

12.8.58 To complete the construction of the proposed on-site access roads would require a grab wagon, tipper (20t), low loader, JCB, HIAB wagon, skip wagon and road sweeper.

Bridge and culvert crossings

12.8.59 Bridges and culverts would be installed where watercourse crossings are needed. Locations of the bridges and culverts have been defined in the Project design and as such it is known that materials and staff to build the five bridges and 14 culverts are needed at the following accesses:

- Accesses required for bridge works – Accesses 47, 56, 87, 91 and 93; and
- Access required for culvert works – Accesses 2, 10, 46, 57, 66, 71, 73, 77, 78, 89 and 91

12.8.60 It is assumed that each bridge would require 90 two-way LV trips and 11 two-way HGV trips. Each culvert would require 42 two-way LV movements and six two-way HGVs.

12.8.61 The bridges and culverts would be constructed at the same time as the access tracks and would also be constructed across weeks 4 to 146.

12.8.62 Construction of the proposed bridges and culverts would require a grab wagon, low loader, concrete mixer and HIAB wagon.

Pylon working areas

12.8.63 Based on the design of the Project, there is a need for 44 pylon working areas across the entire Project and many of these working areas are located next to each other meaning that there are several working areas required via single access points. The working areas comprise stone based crane pads or other hard standing work areas and would also accommodate the plant and material needed to erect/dismantle or undertake other works at pylons, both permanent and temporary.

12.8.64 Each pylon working area has been predicted as needing 137 two-way HGV movements and 45 two-way LV movements to install the working area.

12.8.65 The pylon working areas would be constructed following on from access works and are proposed to be constructed across weeks 8 to 103.

12.8.66 To complete the construction of the proposed onsite pylon working areas would require a grab wagon, 20 tonne tipper, low loader, and HIAB wagon.

Pylon foundations/pylon erection (including steelwork delivery and assembly)

12.8.67 This would involve the erection of permanent and temporary pylons. Pylons would comprise tension pylons and suspension pylons.

12.8.68 **Table 12.21** sets out the estimated traffic generation for both pylon types. This is split between the works required to install pylon foundations and the works required to install/construct the pylon.

Table 12.21 – Tension/suspension pylon foundations and erection total traffic generation (total two-way traffic per pylon across the construction programme)

	Permanent Pylon			Temporary Pylon		
	HGV	LV	Total	HGV	LV	Total
Pylon Foundations						
Suspension	15	84	99	15	84	99
Tension	28	126	154	28	126	154
Pylon Erection						
Suspension	14	54	68	14	54	68
Tension	27	81	108	27	81	108

12.8.69 To complete the construction of the proposed pylons would require a low loader, concrete delivery wagon, tipper HGV, HIAB wagon, small and large crane.

Underground cable installation

12.8.70 The Project proposes the installation of two sections of underground cable, as well as CSECs at either end of the cables. This comprises an approximately 350m section of 275kV cable at Tadcaster and an approximately 230m section of 400kV cable at Shipton. The Tadcaster works would be accessed via access 31 and the Shipton works via access 98. A small number of vehicles will also need to use access 34 at Tadcaster. The estimated traffic predictions for these works are set out in **Table 12.22**. These predictions include traffic associated with site preparation, installation of underground cable.

Table 12.22 – Underground cable works traffic generation (total two-way traffic across the construction programme)

Voltage (Location)	Underground Cable		
	HGV	LV	Total
275kV (Tadcaster)	166	72	238
400kV (Shipton)	70	84	154

12.8.71 The construction programme has the underground cable works taking place in weeks 52-66 at Tadcaster and weeks 51-63 at Shipton.

12.8.72 The construction of the proposed underground cables would require a low loader, concrete delivery wagon, HIAB wagon, small and large crane.

Scaffolding

12.8.73 Scaffolding is required at all locations where the proposed overhead line works (construction and dismantling) are proposed over highways, railway lines and watercourse crossings. This results in there being a need for vehicles (HIAB wagon or similar) to deliver scaffolding at 63 accesses across the Project.

12.8.74 Each scaffolding installation has been predicted to need 4 two-way HGVs (for delivery of scaffolding) and 27 two-way LVs for staff to install the scaffolding over a number of days.

Conductor works including installation, sagging, clamping in, attaching jumpers and conductor spacers

12.8.75 The works required in this phase of the Project are related to the stringing of the new conductor and pilot wire for the new and refurbished overhead line sections including sagging, clamping in attaching jumpers and adding the conductor spacers. The estimated total two-way traffic flows to the proposed site are set out in **Table 12.23**.

Table 12.23 – Conductor works traffic generation (total two-way)

Works	Conductor Works		
	HGV	LV	Total
Pilot Wire Installation	72	144	216
Conductor and Earth Wire Pulling	1,340	1,000	2,340
Sagging	370	756	1,126
Clamping In	818	612	1,430
Attaching Jumpers	94	258	352
Install Conductor Spacers	162	240	402

12.8.76 To complete the conductor works there would be the need for materials and plant to be delivered to the sites including the use of grab wagon, low loader, HIAB wagon, skip wagon and a medium crane.

Pylon dismantling

12.8.77 In addition to sections of new overhead line being constructed there would be a need to remove sections of overhead line and the associated pylons (both temporary and permanent). It is estimated that each pylon to be fully removed (including conductor wires) would require 58 two-way HGVs and 69 two-way LGV movements.

12.8.78 The pylons need to be removed at differing times depending on construction works and outages on the line and would be undertaken from Week 47 to 149.

12.8.79 To complete the pylon dismantling there would be the need for a grab wagon, low loader, HIAB wagon, skip wagon and a medium crane.

Temporary Construction Compound Related Traffic Movements

12.8.80 Outside of any movements to the compound accesses set out above there are also two other movements to and from the TCCs that have been considered as part of the traffic generation calculations as follows;

- Traffic movements to and from the work sites with a start and end point that is a TCC; or
- Ongoing refuelling, maintenance and security/surveillance staff at the TCCs.

12.8.81 As presented in **Appendix 12A – Tables 12A.1 and 12A.2, Volume 5, Document 5.3.12** a prediction has been made of the total amount of traffic for each of the work streams set out above and what percentage of the total would need to have a corresponding trip to the nearest compound. The trips to and from the compound have been incorporated in the traffic flows for each element above.

12.8.82 In addition, predictions have been made for the total traffic generation related to the following elements:

- Refuelling of the site vehicles and plant;
- Refuelling of compound fuel tanks;

- Vehicle, plant, machinery maintenance; and
- Security and surveillance.

12.8.83 The total traffic for all operations at TCCs is shown in **Table 12.24**.

Table 12.24 – Two-way traffic generation for ongoing refuelling, maintenance and security/surveillance staff at the TCCs

Works	Ongoing refuelling, maintenance and security/surveillance staff at the TCCs		
	HGV	LV	Total
Refuelling of Site Vehicles + Plant	1959	-	1959
Refuelling Compound Fuel Tanks	279	-	279
Vehicle, Plant + Machinery, Maintenance	-	6529	6529
Security Surveillance	-	15521	15521

Reinstatement

12.8.84 At this stage of the Project, a robust worst-case approach has been undertaken which assumes that all traffic movements for reinstatement works would be of the same volume as those estimated for the following elements:

- TCC;
- bellmouth construction;
- stone/interlocking panels access tracks;
- bridge and culvert crossings; and
- pylon working areas.

12.8.85 The removal of scaffolding as part of reinstatement has been addressed within the scaffolding calculations above.

12.8.86 The reinstatement works are proposed to take place in phases after the construction and dismantling works have been completed on-site for each access.

Planting

Essential Planting

12.8.87 Mitigation planting at Overton Substation and Monk Fryston Substation is anticipated to be undertaken over two four week periods, and one four week period at the Tadcaster CSEC sites. It is estimated that each of the planting periods would result in 75 two-way HGVs and 75 two-way LVs.

12.8.88 To complete all the planting works there would be the need for low loaders, flatbed trucks and 4x4s.

Replacement Planting

12.8.89 Replacement habitat planting at other accesses, where required, is anticipated to generate around 1,000 two-way HGV movements and 1,000 two-way LV movements. This planting work would be undertaken between weeks 174 and 194 at 80 accesses. Traffic generation estimates are up to 13 two way HGVs and 13 two way LVs per access.

Third Party Diversions

12.8.90 The proposed route of the Project would require interactions with a number of key existing third party infrastructure that would need to be diverted in order to construct the Project. This includes the following:

- existing 11kV lines (11 of these) – Accesses 16, 17, 24, 27, 41, 73, 93, 91 and 96;
- existing 33kV lines (four of these) – Accesses 24, 29, 32, and 78; and
- gas pipelines (one of these) – Access 31.

12.8.91 For the 11kV crossings it is estimated that undertaking each diversion would require 40 two-way HGV trips and 40 two-way LV trips. For the 33kV crossings it is assumed that each diversion would require 80 two-way HGV trips and 80 two-way LV trips and for the gas pipeline, 40 two-way HGV trips and 40 two-way LV trips.

12.8.92 This work would be undertaken between Week 3 and Week 24.

12.8.93 To complete all the required works there would be the need for a HIAB, 4x4, welfare van and JCB.

Pre environmental Surveys

12.8.94 In addition to upfront line surveys and pre commencement works set out earlier in this section there is a requirement for some environmental surveys at the start of the Project between weeks 1 and 13. A total traffic prediction for these works has been made, resulting in 650 LV movements. It is assumed these movements would be split across accesses resulting in the need for 6 two way LV movements to each access.

Substation/CSEC works

12.8.95 Four locations are considered in this section with regard to traffic generation for the construction of the new substations and CSECs:

- Monk Fryston Substation adjacent to the existing substation – Access 3;
- Overton Substation – Access 89;
- Tadcaster Tee CSECs (East and West) – Access 30; and
- Shipton CSECs (North and South) Access 198.

12.8.96 Traffic predictions for each of the four sites (as set out in **Appendix 12A, Table 12A.2, Volume 5, Document 5.3.12**) and the time frame for the works within the construction programme have been taken into account in the traffic modelling. The traffic associated with the four TCCs relevant to these sites has also been included in these traffic predictions.

12.8.97 The vehicles required to undertake these works will include 4x4 pick-up, welfare van, fuel tanker, tractor/trailer, low loader, 20 tonne tipper wagon, Abnormal Indivisible Loads

(ALLs) excavators, concrete mixer, small crane and some other smaller bespoke vehicles.

Total traffic generation

12.8.98 **Appendix 12A – Table 12A.3 and Table 12A.4, Volume 5, Document 5.3.12** sets out the HGV and LV totals for the entire Project across the construction programme per access per week.

Traffic distribution

12.8.99 The distribution of development traffic has been estimated for each of the highways links set out in **Table 12.13**.

12.8.100 For this ES assessment a distribution methodology has been developed to inform the distribution of traffic (LV and HGV) onto the local and strategic highway network within the Study Area. Building on the assessment undertaken at PEIR, this assessment also includes for the following elements:

- distribution of trips specifically between TCCs and works sites; and
- HGV distribution based on anticipated locations of the requirements for materials to be delivered to site such as steel work, stone, geo grid, cranes, plant, concrete, etc.

12.8.101 It is considered that the distribution methodology set out in this chapter is a robust assessment based on the currently available information. The distribution has set out potential HGV and LV movements across the full extent of the Study Area resulting in potential impacts across the local and strategic network.

HGV traffic distribution

12.8.102 Construction HGV traffic generation (not ALLs, the details of distribution of these movements are included in the **CTMP Appendix 3F, Volume 5, Document 5.3.3F**) in this ES chapter has taken into account assumptions as to the origin locations of quarries and sand and gravel sites within the wider area of the north of England as the majority of deliveries are likely to include stone for temporary construction access tracks and temporary construction compounds (and their subsequent removal). Other deliveries of elements of the pylons, such as steelwork, and other materials for the substations are also assumed to route from industrial areas that will access the site via the SRN (A1(M) and M1).

12.8.103 HGVs would route by means of the SRN into the Study Area via five routes: the A1(M) South; M1 West; A1(M) North; A19 North and the A64 North East. **Figure 12.10, Volume 5, Document 5.4.12** sets out the location of the destination/origins of HGV trips in the Study Area.

12.8.104 It is considered that the use of the A19 North would only be applicable to the construction accesses 64-104 of the Project. Vehicles from the north routing to accesses 0-63 would use the A1(M) North.

12.8.105 **Table 12.25** sets out the anticipated HGV distribution of construction material deliveries directly to and from the Project accesses.

Table 12.25 – Yorkshire GREEN HGV distribution

Network Exit Point	Distribution (Accesses 0-63)	Distribution (Accesses 64-104)
A1(M) North	25%	15%
M1 South	25%	25%
A1(M) South	40%	40%
A19	0%	10%
A64 (North East)	10%	10%

12.8.106 HGV routing from the Project work access locations to the Study Area network entry/exit points has been developed from the HGV access strategy set out in the CTMP. **Figure 12.11, Volume 5, Document 5.4.12** sets out the proposed HGV access strategy which has been designed to avoid the need to route HGVs through key settlements and villages.

LV distribution

12.8.107 To estimate construction staff traffic movements, into and out of the temporary construction accesses per day, a detailed distribution matrix has been developed. This has been based on journey to work data from the 2011 census for three areas (middle layer super output areas data). The locations are North West of York (E02002782: York 011), Tadcaster (E02005809: Selby 001) and Monk Fryston (E02005812: Selby 004). **Figure 12.12, Volume 5, Document 5.4.12** sets out the locations of the three local areas used to inform construction staff distribution.

12.8.108 The three areas have been selected to allow for an appropriate distribution of LV traffic across the Project. The distribution of traffic in Monk Fryston will be different to that from work sites around the north of York.

12.8.109 The resultant distribution that has been applied to construction LV traffic is set out in **Table 12.26** for the three sections of the Project and shown in **Figure 12.13, Volume 5, Document 5.4.12** of this document. There are three settlements in the distribution below internal to the Study Area as these are medium sized settlements that would attract traffic.

Table 12.26 – Yorkshire GREEN LV distribution by Area and Accesses within that Area

Section	Section 1	Section 2	Section 3
Accesses in section	1-30	31-64	65-112
A1 (M) north	0.6%	2.8%	2.5%
A19 North	0.5%	0.2%	6.2%
M1 West	15.4%	16.2%	5.3%
A59 West	1.0%	1.7%	6.5%
A64 East	0.8%	1.5%	5.1%

Section	Section 1	Section 2	Section 3
Accesses in section	1-30	31-64	65-112
A1079 East	0.8%	2.3%	5.6%
A19 South	0.0%	1.3%	5.3%
A1 (M) south	30.8%	5.8%	3.6%
B1363 York	0.8%	3.1%	11.5%
A59 York	0.4%	2.5%	25.0%
A19 York	0.4%	1.9%	4.2%
Murton Way	0.4%	1.0%	1.3%
A63 East	19.9%	7.0%	0.0%
A63 West	0.0%	0.0%	0.0%
A64 West	2.9%	8.1%	2.3%
B6164 North	0.9%	1.9%	0.3%
B1224 West	0.3%	0.0%	0.5%
A166 East	0.3%	1.1%	1.0%
A1036 York	2.5%	8.5%	9.0%
Tadcaster	5.4%	25.7%	3.8%
Sherburn in Elmet	14.3%	6.2%	0.7%
Boston Spa	0.8%	1.0%	0.3%
A659 West	0.5%	0.0%	0.0%
Total	100%	100%	100%

12.8.110 LV distribution has not been fixed to the same HGV access strategy and has been calculated using Google Maps¹⁶.

Peak week identification

12.8.111 With a fixed set of temporary accesses, predictions of traffic generation across the construction phase and distribution of HGV and LV traffic, the peak week of traffic for each identified highways link has been predicted.

12.8.112 The following peak weeks during the construction phase were noted for each of the identified highways links in the Study Area.

- 2025 Peak Week:
 - Week 37 – Highways Link 1;
 - Week 39 – Highways Link 13, 14, 18, 25;

- Week 40 – Highway Link 2;
- Week 42 – Highways Link 3;
- Week 43 – Highway Link 21, 22, 23;
- Week 44 – Highway Link 9, 10;
- Week 45 – Highways Link 5, 12, 24;
- Week 61 – Highways Link 15, 20;
- Week 63 – Highways Link 16, 17; and
- Week 64 – Highways Link 4, 19.
- 2026 Peak Week:
 - Week 90 – Highway Link 7;
 - Week 94 – Highway Links 6, 8; and
 - Week 96 – Highways Link 11.

12.8.113 The construction traffic has been converted to a daily traffic flow by using a seven-day working week, which is currently anticipated on the Project.

12.8.114 The locations of the highways links are presented on **Figure 12.7, Volume 5, Document 5.4.12. Appendix 12A Table 12A.5, Volume 5, Document 5.3.12** of this document presents the HGV, LV and total development traffic on the highway links per week over the Project programme and identifies the weeks for each of the links. This has been used to calculate the proportional increase in traffic as a result of the Project and has been used in the environmental assessment of traffic and transport related effects.

Proposed construction access

12.8.115 The location of each construction access point is set out in **Figure 12.8, Volume 5, Document 5.4.12** of this document. The majority of these accesses are proposed to be temporary accesses only in place between the start and end of works at that access (i.e. not the full duration of the construction programme).

12.8.116 Visibility splays provided for each access (where required) have been developed through detailed technical discussions with the relevant local highways authorities and where required speed surveys were undertaken to inform the scope of visibility splays based on the guidance set out in DMRB CD123 Geometric Design of at grade priority and signal junctions²⁸.

12.8.117 Further details on accesses and the resultant visibility splays are set out in **Appendix 3F (Volume 5, Document 5.3.3F), CTMP**.

Proposed permanent accesses

12.8.118 There is a need for a permanent access (AP89) at the new Overton Substation, the design of which has been discussed with NYCC as part of the widening scheme design on Overton Road. Details of the proposed access and widening scheme are

²⁸DMRB (2020) CD 123 – Geometric design of at-grade priority and signal-controlled junctions (online). (Accessed August 2022).

included in **Appendix 3F (Volume 5, Document 5.3.3F), CTMP**. The access will be gated at the entrance to the substation to restrict access to operational traffic only.

12.8.119 The proposed Monk Fryston Substation would not require a new permanent access and access would be taken from the existing substation access (AP 3), however it is proposed that there will be some widening and modifications to this existing junction. The design of this access is set out in **Figure 12.14, Volume 5, Document 5.4.12**.

12.8.120 Both CSECs will also require a permanent access on the public highway, comprising a simple bellmouth as shown in **(Volume 2, Document 2.15)**. These are proposed at AP32 for Tadcaster and AP98 for Shipton.

12.9 Assessment of traffic and transport effects

Introduction

12.9.1 To undertake the assessment of effects of the traffic generated by the Project, the traffic flows need to be estimated and trips distributed onto the road network, as set out in **Section 12.8**.

12.9.2 Peak traffic movements during the construction phase of the Project have been added to future baseline years to clearly identify the traffic impacts arising from the Project.

12.9.3 The change in traffic flows has been assessed against GEART (IEA, 1993) Rule 1 (30% or above) and Rule 2 (10% or above). Where the change is considered significant, further assessment has been made using the criteria in **Section 12.8**.

12.9.4 The assessment within this section has been undertaken on a worst-case basis for traffic generation considering the optionality that is included within the Order Limits and is based on current available information.

12.9.5 The assessment in this section includes all of the relevant embedded mitigation measures the details of which are set out in **Table 12.12**.

Assessment year traffic growth

12.9.6 **Table 12.28** below sets out the 2025 and 2026 traffic flows per receptor based on the traffic growth methodology set out in **Section 12.5**.

Sensitivity of receptor

12.9.7 Given the potential receptors described in **Section 12.8**, **Table 12.27** identifies the sensitivity of highways links and the GEART (IEA, 1993) rule that applies for the Study Area.

Table 12.27 – Highways links receptor sensitivity

Link No	Highway Link	Comments	Receptor Sensitivity	GEART Rule
1	A63	The link is a two-way single carriageway with no properties fronting the road and no pedestrian footways	Low	1
2	A659	The link is a two-way single carriageway that in part links from the A64 to Tadcaster. The road is rural and there are no houses fronting the carriageway	Negligible	1
3	A64	The link is a two-way dual carriageway that is part of the strategic road network	Negligible	1
4	Wetherby Road	The link is a two-way single carriageway in an urban environment with houses and industrial properties fronting the carriageway and a footway on both sides of the road including a raised table signalised pedestrian crossing	Medium	2
5	A1237	The link is a two-way single carriageway with no properties fronting the carriageway or pedestrian footways.	Low	1
6	A59	This link is a two-way single carriageway on the fringe of York as it passes the York Park and Ride site with houses and footways adjacent to the carriageway	Medium	2
7	Common Croft Lane	The link is a rural single carriageway with no centre line in a rural location with no houses or footways adjacent to the carriageway	Negligible	1
8	A59	The link is a rural two-way single carriageway with only farm buildings fronting the carriageway and no pedestrian footways	Low	1
9	A1237	The link is a two-way single carriageway with no properties fronting the carriageway or pedestrian footways	Low	1
10	A19	The link is a two-way single carriageway in the village of Skelton. The village setting has houses and footways adjacent to the carriageway	Medium	2
11	Overton Road	The link is a rural single carriageway with no centre line in a rural location with no houses or footways adjacent to the carriageway	Negligible	1
12	B1363	The link is a two-way single carriageway on the edge of Wigginton. The village setting has houses and footways adjacent to the carriageway	Medium	2

Link No	Highway Link	Comments	Receptor Sensitivity	GEART Rule
13	A1079	The link is a two lane dual carriageway to the east of York with footways adjacent to the carriageway but with few properties fronting the carriageway	Low	1
14	A64	The link is a two-way dual carriageway that is part of the strategic road network	Medium	2
15	A63	The link is a two-way dual carriageway with no footways or properties adjacent to the carriageway	Low	1
16	A168	The link is a two-way single carriageway with footways on the west side of the road but houses to the east of Weatherby are segregated from the carriageway by hedges/embankments	Low	1
17	Church Lane	The link is a two-way single carriageway in the village of Wighill. The village setting has houses and footways adjacent to the carriageway	Medium	2
18	Osbalwick Link Road	The link is a two-way single carriageway with footways/cycle way on the west side of the road but houses to the east of York are segregated from the carriageway by hedgerows.	Low	1
19	Station Road	The link is a two-way single carriageway in the town of Tadcaster. The edge of town setting has houses and footways adjacent to the carriageway	Medium	2
20	B1222	The link is a two-way single carriageway in the town of Sherburn in Elmet. The edge of town setting has houses and footways adjacent to the carriageway	Medium	2
21	A1(M)	The link is a motorway that is part of the SRN	Negligible	1
22	A1(M)	The link is a motorway that is part of the strategic road network	Negligible	1
23	M1	The link is a motorway that is part of the strategic road network	Negligible	1
24	A19	The link is a two-way single carriageway in the village of Shipton. The village setting has houses and footways adjacent to the carriageway	High	2
25	Church Lane	The link is a two-way single carriageway in a village setting (Moor Monkton) on Church Lane north of the A59. The village setting has houses and footways adjacent to the carriageway	Medium	2

Magnitude of change

12.9.8 **Table 12.28** sets out the magnitude of change of the calculated peak daily (24 hour) development traffic on the identified highways links and presents the following information:

- future year baseline traffic per highways link for 2025 or 2026 based on which year the peak week at each highways link is predicted to occur for vehicles and HGVs;
- the predicted daily traffic flows per highways link for total vehicles and HGVs; and
- the percentage impact of the Project traffic per highways link for total vehicles and HGVs.

12.9.9 A percentage impact assessment has not been possible for highway links without traffic data. In **Table 12.28**, percentage impacts that exceed the GEART (IEA,1993) assessment thresholds based on the highways link sensitivity in **Table 12.27** are set out in red.

Table 12.28 - Future year percentage impact

Link No.	Future year Base Traffic (2025/26) (24 Hour)		Project Construction Traffic (per day (24 hour))		Magnitude of Change (percentage impact)	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
1	15267	2562	96	50	0.6%	2.0%
2	5699	307	66	29	1.2%	9.4%
3	62064	4292	190	132	0.3%	3.1%
4	4737	41	19	6	0.4%	14.6%
5	29675	1671	183	110	0.6%	6.6%
6	19884	961	74	22	0.4%	2.3%
7	132	2	44	24	33.2%	1444.1%
8	19884	961	37	15	0.2%	1.6%
9	41217	1525	207	109	0.5%	7.1%
10	10589	750	206	92	1.9%	12.3%
11	140	17	41	30	29.2%	176.6%
12	10163	216	104	69	1.0%	32.0%
13	14731	337	5	2	0.0%	0.6%
14	53723	3672	12	7	0.0%	0.2%
15	11474	1030	39	5	0.3%	0.5%
16	12719	440	42	19	0.3%	4.3%
17	468	33	24	7	5.1%	21.2%

Link No.	Future year Base Traffic (2025/26) (24 Hour)		Project Construction Traffic (per day (24 hour))		Magnitude of Change (percentage impact)	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
18	3508	90	5	2	0.1%	2.2%
19	3095	267	19	6	0.6%	2.2%
20	4257	508	14	1	0.3%	0.2%
21	117100	20070	23	18	0.0%	0.1%
22	152084	23801	122	86	0.1%	0.4%
23	84976	9474	90	54	0.1%	0.6%
24	12529	1654	73	16	0.6%	1.0%
25	383	4	5	2	1.2%	47.8%

Significance of residual effect

12.9.10 **Table 12.27** sets out the sensitivity of the highways links assessed based on the receptors present and the GEART (IEA, 1993) rules regarding change in traffic flows. **Table 12.28** sets out the percentage change in traffic flows and HGVs. Where the percentage change is 30% or more on non-sensitive sections (Rule 1) or 10% or more on sensitive sections (Rule 2), an assessment of the environmental effects is needed.

12.9.11 Based on the results presented in **Table 12.28** and the defined sensitivities set out in **Table 12.27**, there are six highway links where the percentage change in total vehicle or HGVs results in the need for further assessment.

12.9.12 The six links that require detailed environmental assessment are as follows:

- Link 4 - Wetherby Road between Tower Crescent and Station Road;
- Link 7 – Common Croft Lane between Broad Lane and Lords Lane;
- Link 10 – A19 between Fairfields Drive and Stripe Lane;
- Link 11 – Overton Road between Stripe Lane and A19
- Link 12 – B1363 between Mill Lane and A1237;
- Link 17 – B1222 Church Hill – Wighill; and
- Link 25 – Church Lane – North of the A59.

12.9.13 On all other highways links, the percentage change in traffic flows or HGVs does not trigger the need for an assessment of environmental effects based on the rules set out in GEART.

Highways Link 4 – Weatherby Road between Tower Crescent and Station Road

12.9.14 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 14.6% over the 24-hour period (an increase of six HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Medium**.

12.9.15 **Table 12.29** sets out the assessment of the traffic and transport environmental effects at the highways link and the significance of effect.

Table 12.29 – Highway Link 4 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	<p>Wetherby Road (A659) is a two lane single carriageway road which links Tadcaster to Boston Spa. The road is urban in nature as it passes through the north section of Tadcaster. The highways link is a key 'A' road in the local area and is designed to accommodate high traffic flows and HGVs. With an increase of six HGVs per day across the 12 hour period, this would result in an average of less than one additional HGV per hour. The change in HGVs on the link is between 0-30% and based on Table 12.19 as the current baseline for HGV numbers is low. The magnitude of change is Negligible. The significance of effect on severance is therefore Negligible (Not Significant).</p>	Negligible	Negligible (Not significant)
Driver Delay	<p>The increase in traffic at the peak of the construction phase of one additional HGVs per hour) is unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is therefore Negligible. The significance of effect on driver delay is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	<p>Wetherby Road (A659) in Tadcaster has a signalised pedestrian crossing and has a crossing at the junction of the A659/Station Road. The footway widths in Tadcaster are 2m to 3.9m wide and footways run along both sides of the road. These formal crossings and footways accommodate for the pedestrian desire lines in this built-up area.</p> <p>However, in the peak of the construction phase it is anticipated that, on average, less than one additional HGV will be generated every hour on the link. Based on professional judgement it is considered that this will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based</p>	Negligible	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	on Table 12.17 is therefore Negligible and Not Significant .		
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that the Wetherby Road (A659) between the A259 and A27 has an accident rate of 0.7 per million vehicle kilometres which is just below the 0.11 rate for Urban A Roads.</p> <p>For pedestrians, crossings of the highway are provided in Tadcaster.</p> <p>With only up to an additional HGV an hour in the construction phase peak as a result of the Project the magnitude of change is therefore negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)

12.9.16 Based on **Table 12.29** the overall significance of residual effects at Highways Link 4 and associated receptors is therefore considered to be **Negligible** which is considered **Negligible (Not Significant)**.

Highways Link 7 – Common Croft Lane between Broad Lane and Lords Lane

12.9.17 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 1444.1% over the 24-hour period (an increase of 24 HGVs) and for total vehicles by 33.2% (an increase in 44 two way vehicles). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Negligible**.

12.9.18 **Table 12.30** sets out the assessment of the traffic and transport environmental effects at the highways link and the significance of effect.

Table 12.30 – Highway Link 7 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	<p>Common Croft Lane/Newlands Road is a single lane rural carriageway road which links the A59 to Cinder Lane and Ouse Moor Lane west of Nether Poppleton.</p> <p>With an increase of 24 HGVs per day across the 12 hour period, this would result in approximately two additional HGVs per hour (four total vehicles per hour).</p> <p>The change in HGVs on the link is above 90% and based on Table 12.19 the magnitude of change is High. The significance of effect on severance however based on Table 12.17 is therefore Negligible and Not Significant.</p>	High	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Driver Delay	The increase in traffic at the peak of the construction phase is two additional HGVs (four total vehicles) per hour and is unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is therefore Negligible . The significance of effect on driver delay is therefore Negligible and Not Significant .	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	There are no pedestrian footways on the link and no clear pedestrian desire lines between land uses. In the peak of the construction phase, it is anticipated that two additional HGVs will be generated every hour on the link. Based on professional judgement it is considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects. The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.19 is therefore Negligible and Not Significant .	Negligible	Negligible (Not significant)
Accidents and Safety	The assessment undertaken in Section 12.5 indicates that the Common Croft Lane/Newlands Road did not have any accidents recorded during the five-year period assessed in this chapter. With only two additional HGV required every hour in the construction phase traffic peak as a result of the Project the magnitude of change is therefore Negligible . The significance of effect on accidents and safety is therefore Negligible and Not Significant .	Negligible	Negligible (Not significant)

12.9.19 Based on **Table 12.30**, the overall significance of residual effects at Highways Link 7 and associated receptors is considered to be **Negligible and Not Significant**.

Highways Link 10 – A19 between Fairfields Drive and Stripe Lane

12.9.20 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 12.3% over the 24 hour period (an increase of 92 HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Medium**.

12.9.21 **Table 12.31** sets out the assessment of the traffic and transport environmental effects at the highways link, and the significance of effect.

Table 12.31 – Highway Link 10 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	<p>The A19 in this location is a two lane single carriageway road which routes from York through the village of Skelton and onwards through Shipton by Beningbrough to Thirsk. The road is primarily rural in nature. The highways link is a key ‘A’ road in the local area and is designed to accommodate high traffic flows and HGVs. With an increase of 92 HGVs per day across the 12 hour period, this would result in approximately eight additional HGVs per hour.</p> <p>The change in HGVs on the link is less than 30% and based on Table 12.19 the magnitude of change is Negligible. The significance of effect on severance is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Driver Delay	<p>The increase in traffic at the peak of the construction phase is eight additional HGV movements per hour (or one HGV approximately every 8 minutes) and is unlikely to result in any delay to drivers on the highway link or local junctions. On this basis the magnitude of change is therefore Negligible. The significance of effect on driver delay is therefore Negligible and Not Significant</p>	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	<p>The A19 in Skelton has several dropped crossings over the road including at the junction of the A19 and Fairfields Drive. The footway widths in Skelton are 3 to 4m wide and run along both sides of the road. These formal crossings and footways accommodate the pedestrian desire lines in this built-up area.</p> <p>In the peak of the construction phase, it is anticipated that an additional HGV movement would be generated every 8 minutes on the link. Based on professional judgement it is considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.17 is therefore Negligible and Not Significant</p>	Negligible	Negligible (Not significant)
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that the A19 between Fairfields Drive and Stripe Lane has an accident rate of 0.17 per million vehicle kilometres which is above the 0.11 rate for Rural A Roads. However, given the more urban nature of this</p>	Negligible	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	<p>link between Fairfields Drive and Stripe Lane a more appropriate rate would be the 0.42 for an Urban 'A' Road.</p> <p>For pedestrians, crossings of the highway are provided in Skelton.</p> <p>With only an additional HGV every 8 minutes in the construction phase peak as a result of the Project the magnitude of change is considered Negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.</p>		

12.9.22 Based on **Table 12.31** the overall significance of residual effects at Highways Link 10 and associated receptors is considered to be **Negligible and Not Significant**.

Highways Link 11 – Overton Road between Stripe Lane and A19

12.9.23 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 176.6.6% over the 24 hour period (an increase of 30 HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Negligible**.

12.9.24 **Table 12.32** sets out the assessment of the traffic and transport environmental effects at the highways link, and the significance of effect.

Table 12.32 – Highway Link 11 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	<p>Overton Road at this location is a one lane single carriageway road which routes from the A19 over a railway bridge and towards a rural floodplain. The road is rural in nature. With an increase of 47 HGVs per day across the 12 hour period, this would result in approximately four additional HGVs per hour.</p> <p>The change in HGVs on the link is more than 90% and based on Table 12.19 the magnitude of change is High. The significance of effect on severance is therefore Negligible and Not Significant.</p>	High	Negligible (Not significant)
Driver Delay	<p>The increase in traffic at the peak of the construction phase is three additional HGV movements per hour (or one HGV approximately every 20 minutes) and is unlikely to result in any delay to drivers on the highway link or local junctions. On this basis the magnitude of change is therefore Negligible. The significance of</p>	Negligible	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	effect on driver delay is therefore Negligible and Not Significant		
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	<p>There are no pedestrian footways on the link and no clear pedestrian desire lines between land uses.</p> <p>In the peak of the construction phase, it is anticipated that a HGV will be generated every 20 minutes. Based on professional judgement it is considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.19 is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that the Overton Road between Overton Road between Stripe Lane and A19 has an accident rate of 3.80 per million vehicle kilometres which is above the 0.19 rate for rural other Roads.</p> <p>For Overton Road the low baseline of traffic flows needs to be considered against the pure number of accidents. In the assessment period and only 2 accidents were recorded on Overton Road (both slight). These accidents do not indicate a large pattern of accidents on these links and the accident rate number should be treated with some caution.</p> <p>With only an additional HGV every 20 minutes in the construction phase peak as a result of the Project the magnitude of change is considered Negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)

12.9.25 Based on **Table 12.32** the overall significance of residual effects at Highways Link 11 and associated receptors is considered to be **Negligible and Not Significant**.

Highways Link 12 – B1363 between Mill Lane and A1237

12.9.26 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link 32% over the 24-hour period (an increase of 69 HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Medium**.

12.9.27 **Table 12.33** sets out the assessment of the traffic and transport environmental effects at the highways link and the significance of effect.

Table 12.33 – Highway Link 12 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	<p>The B1363 is a two lane single carriageway road which routes northwards from York to various villages and passes through the western edge of Wigginton where the road is urban in nature, though the majority of the link is rural. The highway link is a key B road in the local area and is designed to accommodate moderate traffic flows and HGVs. With an increase of 69 HGVs per day across the 12 hour period, this would result in approximately six additional HGVs per hour.</p> <p>The change in HGVs on the link is between 30%-60%% and based on Table 12.19 the magnitude of change is Low. The significance of effect on severance is therefore Minor and Not Significant.</p>	Low	Minor (Not significant)
Driver Delay	<p>The calculated increase in traffic at the peak of the construction phase of four additional HGVs per hour (or one HGV approximately every 10 minutes) is unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is therefore Negligible. The significance of effect on driver delay is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	<p>The B1363 in Wigginton does not have any pedestrian footways.</p> <p>In the peak of the construction phase, it is anticipated that an additional HGV would be generated every 10 minutes on the link. Based on professional judgement it is considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.17 is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that the B1363 has an accident rate of 0.02 per million vehicle kilometres which is well below the rates for urban or rural “other” roads (0.33 and 0.19).</p> <p>With only an additional HGV required every 10 minutes in the construction phase peak as a result of the Project the magnitude of change is therefore</p>	Negligible	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.		

12.9.28 Based on **Table 12.33** the overall significance of residual effects at Highways Link 12 and associated receptors is considered to be **Negligible** and **Not Significant.**

Highways Link 17 – Church Lane - Wighill

12.9.29 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 21.2% over the 24-hour period (an increase of 7 HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Medium.**

12.9.30 **Table 12.34** sets out the assessment of the traffic and transport environmental effects at the highways link and the significance of effect.

Table 12.34 – Highway Link 17 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	Church Lane is a two lane single carriageway road which routes through the village of Wighill. The road is a village setting road with footways on both sides of the road and bound by residential and commercial properties. With an increase of seven HGVs per day across the 12 hour period, this would result in approximately one additional HGV every two hours. The change in HGVs on the link is less than 30% and based on Table 12.19 the magnitude of change is Negligible. The significance of effect on severance is therefore Minor (Not Significant).	Negligible	Negligible (Not significant)
Driver Delay	The predicted increase in traffic movements at the peak of the construction phase of one additional HGVs every two hours is unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is therefore Negligible. The significance of effect on driver delay is therefore Negligible and Not Significant.	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Church Lane in Wigginton does have footways on both sides of the carriageway, but no formal crossing locations. In the peak of the construction phase, it is anticipated that an additional HGV would be generated two hours on the link. Based on professional judgement it is	Negligible	Negligible (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	<p>considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.17 is therefore Negligible and Not Significant.</p>		
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that Church Lane has an accident rate of 1.02 per million vehicle kilometres which is well above the rates for urban or rural “other” roads (0.33 and 0.19). However detailed analysis of the link indicates that this high accident rate is generated by a very low baseline of traffic against just three total accidents in the five years of assessment.</p> <p>With only an additional HGV required every two hours in the construction phase peak as a result of the Project the magnitude of change is therefore Negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)

12.9.31 Based on **Table 12.34** the overall significance of residual effects at Highways Link 17 and associated receptors is considered to be **Negligible and Not Significant**.

Highways Link 25 – Church Lane – North of the A59

12.9.32 As set out in **Table 12.28**, the total HGV flows are predicted to increase on this link by 47.8% over the 24-hour period (an increase of 2 HGVs). Based on **Table 12.27**, the sensitivity of the highways link has been identified as **Medium**.

12.9.33 **Table 12.35** sets out the assessment of the traffic and transport environmental effects at the highways link and the significance of effect.

Table 12.35 – Highway Link 25 – assessment of transport environmental effects

Effect	Comments	Magnitude of Change	Significance of Residual Effect
Severance	Church Lane is a two lane single carriageway road which routes through the southern part of Moor Monkton north of the A59. The road is a village setting road with footways intermittent on the east side of the road and bound by residential properties.	Low	Minor (Not significant)

Effect	Comments	Magnitude of Change	Significance of Residual Effect
	<p>With an increase of 2 HGVs per day across the 12 hour period, this would result in one additional HGV every six hours.</p> <p>The change in HGVs on the link is between 30-60% and based on Table 12.19 the magnitude of change is Low. The significance of effect on severance is therefore Minor and Not Significant.</p>		
Driver Delay	<p>The predicted increase in traffic movements at the peak of the construction phase of one additional HGVs every six hours is unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is therefore Negligible. The significance of effect on driver delay is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	<p>Church Lane does have an intermittent footway from the junction with A59 on the east side of the carriageway, but no formal crossing locations.</p> <p>In the peak of the construction phase, it is anticipated that an additional HGV would be generated every six hours on the link. Based on professional judgement it is considered that this would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible for pedestrian amenity, pedestrian delay and fear and intimidation effects.</p> <p>The significance of effect on Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation based on Table 12.17 is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)
Accidents and Safety	<p>The assessment undertaken in Section 12.5 indicates that the Church Lane did not record any accidents during the assessment period.</p> <p>With only an additional HGV required every 6 minutes in the construction phase peak as a result of the Project the magnitude of change is therefore Negligible. The significance of effect on accidents and safety is therefore Negligible and Not Significant.</p>	Negligible	Negligible (Not significant)

12.9.34 Based on **Table 12.35** the overall significance of residual effects at Highways Link 17 and associated receptors is considered to be **Negligible and Not Significant**.

12.10 Assessment of cumulative effects

- 12.10.1 A cumulative effects assessment (CEA) has been undertaken for the ES which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects is set out in **Chapter 18: Cumulative Effects Assessment (Volume 5, Document 5.2.18)**.
- 12.10.2 In terms of road traffic, the preferred option for projecting existing or historical traffic data for future year assessments is the use of appropriate local traffic forecasts such as TEMPro as has been undertaken in this chapter, the methodology of which is set out in **Section 12.7**. TEMPro is a program developed by the DfT providing traffic growth projections used to project long-term forecasts in traffic growth. The forecasts take into account national projections of population, employment, housing, car ownership, and trip rates. This is an accepted approach to assess future baseline traffic. This approach to forecasting traffic growth takes into account the traffic associated with all cumulative and anticipated development with the relevant local plans.
- 12.10.3 At this time, as discussed with NYCC and CYC, the potential developments identified in **Chapter 18: Cumulative Effects Assessment (Volume 5, Document 5.2.18)**, have already been taken into consideration within the TEMPro forecasts used in the assessment. No other committed developments have been identified at this stage that are anticipated to overlap with the Project, and therefore no cumulative transport effects are anticipated.

12.11 Significance conclusions

- 12.11.1 A summary of the results of the traffic and transport assessment is provided in **Table 12.36**.

Table 12.36 –Summary of significance of effects

Receptor and Summary of Predicted Effects	Sensitivity of Receptor ¹	Magnitude of Change ²	Significance ³	Summary Rationale
Severance - 6 Links where GEART Thresholds are triggered	4 - Medium	4 – Negligible	4 - Negligible (Not significant)	There would be a temporary increase in traffic during the peak week of the construction programme, but the assessment has indicated that the impacts on Severance would be Not Significant .
	7 - Negligible	7 – High	7 - Negligible (Not significant)	
	10 – Medium	10 – Negligible	10 - Negligible (Not significant)	
	11 - Negligible	11 - High	11- Negligible (Not significant)	
	12 - Low	12 – Negligible	12 - Minor (Not significant)	
	17 – Negligible	17 – Medium	17 – Negligible (not significant)	
	25 - Medium	25 - Low	25 – Minor (not significant)	

Receptor and Summary of Predicted Effects	Sensitivity of Receptor ¹	Magnitude of Change ²	Significance ³	Summary Rationale
Driver Delay - 5 Links where GEART Thresholds are triggered	4 - Medium 7 - Negligible 10 Medium 11 - Negligible 12 - Medium 17 – Medium 25 - Medium	4 – Negligible 7 – Negligible 10 – Negligible 11 - Negligible 12 – Negligible 17 – Negligible 25 - Negligible	4 - Negligible (Not significant) 7 - Negligible (Not significant) 10 - Negligible (Not significant) 11 - Negligible (Not significant) 12 - Negligible (Not significant) 17 - Negligible (Not significant) 25 - Negligible (Not significant)	There would be a temporary increase in traffic during the week month of the construction programme but the assessment has indicated that the impacts on driver delay would be Not Significant .
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation - 5 Links where GEART Thresholds are triggered	4 - Medium 7 - Negligible 10 Medium 11 - Negligible 12 - Medium 17 – Medium 25 - Medium	4 – Negligible 7 – Negligible 10 – Negligible 11 - Negligible 12 – Negligible 17 – Negligible 25 - Negligible	4 - Negligible (Not significant) 7 - Negligible (Not significant) 10 - Negligible (Not significant) 11 - Negligible (Not significant) 12 - Negligible (Not significant) 17 - Negligible (Not significant) 25 - Negligible (Not significant)	There would be a temporary increase in traffic during the peak week of the construction programme but the assessment has indicated that the impacts on Pedestrian Amenity, delay and fear and intimidation would be Not Significant .
Accidents and Safety - 5 Links where GEART Thresholds are triggered	4 - Medium 7 - Negligible 10 Medium 11 - Negligible 12 - Medium 17 – Medium 25 - Medium	4 – Negligible 7 – Negligible 10 – Negligible 11 - Negligible 12 – Negligible 17 – Negligible 25 - Negligible	4 - Negligible (Not significant) 7 - Negligible (Not significant) 10 - Negligible (Not significant) 11 - Negligible (Not significant) 12 - Negligible (Not significant) 17 - Negligible (Not significant) 25 - Negligible (Not significant)	There would be a temporary increase in traffic during the peak week of the construction programme but the assessment has indicated that the impacts on accidents and safety would be Not Significant .

1. The sensitivity/importance/value of a receptor is defined using the criteria set out in **Section 12.8** and is defined as Negligible, Low, Medium and High.
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 12.8** and is defined as Negligible, Low, Medium and High.
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 12.8**.

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