

11. Traffic and Transport

11.1 Introduction

11.1.1

This chapter presents the preliminary assessment of the likely significant effects of the HyNet North West Hydrogen Pipeline Project (The Project) with respect to traffic and transport. The preliminary assessment is based on information obtained to date. It should be read in conjunction with the project description provided in **Chapter 2: The Project** and with respect to relevant parts of the following chapters:

- **Chapter 9: Air Quality;**
- **Chapter 10: Noise and Vibration;**
- **Chapter 15: People and Communities;** and
- **Chapter 17: Climate Change.**

11.1.2

This chapter describes:

- the legislation, policy and technical guidance that has informed the assessment (**Section 11.2**);
- consultation and engagement that has been undertaken to date and how comments from consultees relating to traffic and transport have been addressed (**Section 11.3**);
- a description of the Study Area (**Section 11.4**);
- the methods used for baseline data gathering (**Section 11.5**);
- the overall baseline including the future baseline (**Section 11.6**);
- embedded environmental measures relevant to traffic and transport (**Section 11.7**);
- the scope of the assessment for traffic and transport (**Section 11.8**);
- the methodology applied for the assessment (**Section 11.9**);
- the preliminary assessment of the traffic and transport effects (**Section 11.10**);
- The preliminary assessment of cumulative (inter project) effects (**Section 11.11**);
- a summary of the preliminary significance conclusions (**Section 11.12**);
- details additional measures that are required (**Section 11.13**);
- the residual effects assessment (**Section 11.14**); and
- an outline of further work to be undertaken for the Environmental Statement (ES) (**Section 11.15**).

Limitations and assumptions

- 11.1.3 The information provided in this Preliminary Environmental Information Report (PEIR) is preliminary, the final assessment of likely significant effects will be reported in the ES. The PEIR has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Project.
- 11.1.4 The limitation of this PEIR is that at this stage the detail of the construction works is still in development and therefore a high-level approach to traffic generation has been undertaken. The traffic generation assessment within this chapter, whilst high level, is considered to be robust. Elements of the Project such as the traffic movements between construction compounds/material storage areas and site accesses will not be known until later in the development of the Project and have only been considered at a high level in this assessment using a series of worst-case assumptions. Further details on how the traffic generation scenario has been developed is set out in **Section 11.8**.
- 11.1.5 There are a number of committed/potential development and infrastructure schemes that have construction or completion time frames which could overlap with the Project. These are set out below along with why they have not or cannot be considered within this preliminary assessment:
- Schemes subject to planning:
 - ▶ HyNet North West Carbon Dioxide Pipeline – Paragraph 17.7.1 of this project's PEIR states "*At the time of writing, specific volumes of HGV traffic at working locations, by activity and time, are not yet known*". There is a commitment to revisit the localised impacts of this scheme at the western end of the Project post Section 42 consultation;
 - ▶ Cannington Relief Road – Trafford Borough Council (TBC) – Planning application proposed in Spring 2022 and anticipated Spring 2023 construction commencement and scheme opening in 2024. Agreement with TBC to review the progress of the application for the Cannington Relief Road after Section 42 consultation and the likely impacts on the local road network in 2025/56;
 - ▶ Warrington Western Link – Warrington Borough Council (WBC) – April 2019 funding granted by DfT. Currently going through a gateway review exercise (July 2022) prior to submission of planning application. Agreement with WBC to consider the scheme post Section 42 consultation and the likely impacts on the road network from construction traffic or a completed scheme by 2025/26;
 - ▶ HS2 Phase 2b – HS2 Phase 2b is a developing scheme. The documents for assessment of effects have been reviewed but these are broad estimates that are not suitable to include in a future baseline at PEIR. Most recent estimates for HS2 Phase 2b indicate construction starting in 2027 and completing in late 2033. There is also the possibility that the Project and HS2 Phase 2b would not overlap construction phases. The proposals for HGV access for HS2 Phase 2b have assisted the development of the Project HGV access strategy.

- Schemes that are anticipated by local highways authorities:
 - ▶ River Weaver Swing Bridge/New Bridge – This scheme was discussed in initial consultation with Cheshire West and Chester Council (CWAC) but there are no committed proposals for this scheme. Agreement reached to revisit this scheme post PEIR should proposals have moved forward to something more committed.

11.1.6 A commitment to revisit all the schemes above post Section 42 has been made with an aim to agree with the relevant highway authorities which schemes and what traffic flows should be added to the future baseline of the Project for the DCO submission.

11.2 Relevant legislation, planning policy and technical guidance

11.2.1 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 4: Legislation and policy overview**.

11.2.2 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 requirements which the Project should consider, aiding the process of defining the scope of assessment and informing the identification of local issues.

11.2.3 There is no legislation specifically relevant to this assessment.

Planning policy

11.2.4 A summary of the relevant national and local planning policy is given in **Table 11.1**.

Table 11.1 Planning policy relevant to the traffic and transport assessment

Policy	Policy context
National planning policy	
Overarching National Policy Statement for Energy (EN-1)¹	• Paragraph 5.13.2 - 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.

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 May 2022)

Policy	Policy context
	- Paragraph 5.13.3 - If significant transport effects are likely the ES should be accompanied by a Transport Assessment, developed in consultation with the Highways Agency and Highways Authorities - Paragraph 5.13.4 - Requirement, where appropriate, to prepare a Travel Plan and provide details of proposed measures to improve access by public transport, walking and cycling to mitigate transport impacts. - Paragraph 5.13.6 - The Secretary of State (SoS) should ensure the applicant has sought to mitigate substantial impacts on transport infrastructure. Where insufficient the SoS should consider the requirements to mitigate such effects. - Paragraph 5.13.11 - Where substantial HGV traffic is likely to occur the SoS may attach requirements to consent to control numbers and routeing of HGV movements, make sufficient provision for HGV parking and make arrangement for reasonably foreseeable abnormal disruption.
Draft Overarching NPS EN-1, September 2021²	In September 2021, the Department of Business, Energy and Industrial Strategy (BEIS) consulted upon a review 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 Energy white paper and ensure 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 within those draft Energy National Policy Statements which are considered to be relevant to the Project.
National Planning Policy Framework (NPPF)³	Paragraph 111 states that development should only be prevented or refused on highways grounds if there would be

² Department of Business, Energy and Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1) (online). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf (Accessed April 2022)

³ Ministry of Housing, Communities and Local Government (2021). The National Planning Policy Framework (NPPF). Available at:

Policy	Policy context
	an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. Paragraph 113 states that if significant transport effects are likely then a Travel Plan is required along with a Transport Statement or Transport Assessment.
Local planning policy	
Cheshire West and Chester Local Plan, 2015⁴	STRAT 10 Transport and Accessibility: Developments that generate significant amounts of traffic should be accompanied by a Transport Assessment and Travel Plan. New development will be required to demonstrate that: • Additional traffic can be accommodated safely and satisfactorily within the existing, or proposed, highway network • Satisfactory arrangements can be made to accommodate the additional traffic before the development is brought into use. Current and disused transport corridors and infrastructure, including roads, railway lines, sidings and stations, will be safeguarded from development which would preclude their future transport use.
Cheshire West and Chester (Integrated Transport Strategy) 2017-2030⁵	The Cheshire West and Chester Local Transport Plan (LTP) sets out the Council's long-term vision for Transport within an integrated transport strategy document which covers the plan period between 2011 and 2016. The document sets out six local transport goals and supporting objectives. The policy objectives of the LTP include the following, which are relevant to the Project.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004408/NPPF_JULY_2021.pdf (Accessed May 2022)

⁴ Chester West and Chester (2015) Chester West and Cheshire Adopted Local Plan. Available at:

https://inside.cheshirewestandchester.gov.uk/policies_plans_and_strategies/planning_policy/local_plan/local_plan__part_one (Accessed May 2022)

⁵ Cheshire West and Chester (2017). Local Transport Strategy 2017-2030 (online).

Available at: <https://www.cheshirewestandchester.gov.uk/residents/transport-and-roads/public-transport/documents/Local-Transport-Plan-update-2017.pdf> (Accessed May 2022)

Policy	Policy context
	• Reduce traffic congestion and enhance the capacity of local roads and strategic road networks; • Development transport scheme and measures that help support the economic viability of town, villages and leisure attractions in West Cheshire; • Support the delivery of new developments and housing while limiting the impact of additional traffic; • Support an overall reduction in levels of greenhouse gas emissions by supporting and encouraging the use of sustainable (low carbon) forms of transport and technology; • Maintain the highway network in a safe and serviceable condition for the use of vehicles, cyclists, pedestrian and all other users; • Ensure that the highway is kept in an acceptable condition environmentally; • Reduce the number of people killed or seriously injured on our roads; • Work to reduce transport related air quality problems in the borough; • Ensure that new developments and local services are built in accessible locations. Within the climate change section of the document one of the Council's short-term objectives related to new technologies and fuels is to promote and support the adoption of new transport technologies and fuels that help support carbon reduction projects.
Draft Transport for the North Freight Strategy (Consultation Version) December 2021⁶	In December 2021 Transport for the North put out a consultation draft of a new Freight Strategy for the North of England. The document sets out that there are issues across the motorway and major road network in the North and these are forecast to worsen, which could impact road freight. In the

⁶ Transport for the North (2021) Draft TfN Freight Strategy (online). Available at: <https://transportforthenorth.com/wp-content/uploads/Freight-Strategy-Master-Consultation-version-v0.1.pdf> (Accessed May 2022)

Policy	Policy context
	HyNet area the M62 is noted as being particularly vulnerable to weather conditions. The M6 in Cheshire is also noted as a location with existing congestion issues. The Strategy also proposes to “Support a pan-northern hydrogen transport refuelling study, providing a ‘look-ahead’ as to what an effective refuelling network would look like, to be used as evidence by policy makers and freight operators in their investment decisions” and “Engaging with emerging hydrogen partnerships in the North to support the development of a viable business case for hydrogen for first mile freight applications and provide confidence to the supply chain.”
Cheshire East Local Plan Strategy (2010-2030) ⁷	Policy C01 Sustainable Travel and Transport: The Council expects development to achieve the following: • Reduce the need to travel. This includes provision to guide development to sustainable and accessible locations or locations that can be made sustainable or accessible. • Improve pedestrian facilities so that walking is attractive for shorter journeys. • Improve cyclist facilities so that cycling is attractive for shorter journeys. • Improve public transport integration, facilities, capacity, service levels, access for all users and reliability. Improve and develop appropriate road, rail and water freight transport routes and associated intermodal freight transport facilities to assist in the sustainable and efficient movement of goods. Policy CO2 Enabling Business Growth through Transport Infrastructure: The Council will support new developments that are, or can be made, well connected and accessible. Policy CO4 Travel Plans and Transport Assessments: All major development proposals that are likely to generate significant additional journeys will be accompanied by a Transport Assessment and, where appropriate, a Travel Plan. The Transport Assessment will be required to demonstrate that the capacity and efficiency of the highway network will

⁷ Cheshire East Council (2010) Local Plan Strategy (2010-2030) (Online). Available at: <https://www.cheshireeast.gov.uk/pdf/planning/local-plan/local-plan-strategy-web-version-1.pdf> (Accessed May 2022)

Policy	Policy context
	not be severely affected by the development. Transport Assessments should be prepared following Cheshire East guidance.
Cheshire East Local Transport Plan 2019-2024⁸	The Cheshire East LTP sets out the Council's vision for transport development within Cheshire East over the plan period. The plan sets out the challenges which need to be overcome to achieve the council's vision. The plan provides actions which will need to be undertaken to overcome the challenges and reach the vision set out in the plan. Actions which are relevant to this Project include the following: • Action 4.3 – The Council will support implementation of the Industrial Strategy locally including contributing towards meeting the challenges for clean growth, mobility, and a data driven economy. • Action 4.5 – The Council will support activities which reduce the carbon intensity and resilience of our transport system. • Action 4.6 – The Council will support the delivery of green and blue infrastructure improvements.
Trafford Local Plan: Core Strategy⁹	Policy L4.7 Sustainable Transport and Accessibility: Planning permission will not be granted for development that is likely to have a significant adverse impact on the highway network unless or until appropriate mitigation or improvements are secured. Policy L4.10 Safeguarded Highway and Public Transport Routes and Infrastructure: Existing or proposed public transport or infrastructure will be safeguarded from development that would prejudice their development or continued use. Policy L4.11 Freight Transport Network: Road, rail and water freight networks will be safeguarded and improvement and developments to these networks will be promoted. In particular, the following will be safeguarded and promoted:

⁸ Cheshire East (2019) Cheshire East Local Transport Plan 2019-2024. (Online) Accessible at:
<https://moderngov.cheshireeast.gov.uk/ecminutes/documents/s72327/Local%20Transport%20Plan%20-%20app%201.pdf> (Accesses May 2022)

⁹ Trafford Council (2012) Trafford Local Plan: Core Strategy (Online). Accessible at:
<https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf> (Accessed May 2022)

Policy	Policy context
	• Trafford Park rail network; • Intermodal freight facilities within Trafford Park; • Manchester Ship Canal as a sustainable transport route. Policy L4.13 Transport Assessments and Travel Plans: Where development is likely to have significant transport implications the Council require a Transport Assessment, which includes measures to mitigate impacts by proposing appropriate improvements, reducing car use and makes contributions to sustainable transport measures.
Trafford Transport Strategy, 2009¹⁰	The Trafford Transport Strategy sets out the Council's vision for transport development over a 15-year period since adoption in 2009. The Strategy is composed of 15 overarching objectives which set out the vision of the strategy. The Strategy sets out challenges and issues which form barriers to the vision of the Strategy. An action plan is provided within the Strategy which sets out actions which can be taken to overcome the issues and challenges identified. Included within the action plan are highways schemes, public transport schemes, cycling and walking schemes, freight schemes, travel planning schemes, parking schemes and maintenance schemes.
Warrington Local Plan Core Strategy¹¹	Policy CS 4 Overall Spatial Strategy Transport: The Council will support improvements to Warrington's transport network that reduce the impact of traffic on air quality and reduce carbon emissions to help tackle climate change. Policy MP 5 Freight Transport: The Council will support freight related development where this reduces road traffic kilometres across the local highway network. It should be demonstrated that proposals will not create an adverse impact on local roads, residential roads, and congested areas.

¹⁰ Trafford Council (2009) Trafford Transport Strategy, 2009. (Online) Accessible at: <https://www.trafford.gov.uk/planning/strategic-planning/docs/trafford-transport-strategy-2009.pdf> (Accessed May 2022).

¹¹ Warrington Borough Council (2014) Warrington Local Plan Core Strategy. Accessible at: https://www.warrington.gov.uk/sites/default/files/2019-08/local_plan_core_strategy_adopted_2014.pdf (Accessed May 2022)

Policy	Policy context
	Policy MP 6 Transport Infrastructure: The Council will prioritise and safeguard land for development which is proposed to form schemes included within the LTP. Policy MP 7 Assessments and Travel Plans: Developments will be required to demonstrate that they will not harm highway safety and any trips generated can adequately be served by the local transport network. Where there are significant effects, appropriate mitigation should be provided.
Warrington Fourth Local Transport Plan¹²	The Fourth LTP sets out Warrington Council's vision for transport over the plan period to 2040. The Plan sets out challenges to overcome to achieve the plans vision and promotes policies to ensure development is guided to achieve the Council's vision. Policies are promoted to encourage the following: • active travel; • smarter travel choices; • improve public transport; • make travel safer; • use of cleaner fuels; • asset management; • network management; • freight management. Policy CF2 and CF3 are promoted within the LTP to support the use of cleaner fuels.
St Helens Local Plan Core Strategy¹³	Policy CP2 Creating an accessible St Helens: This policy sets out six principles to guide development to ensure access to transport is provided to all people within St Helens: • Ensuring a choice in mode of travel; • Ensuring access to local facilities;

¹² Warrington Borough Council (2019) Warrington Fourth Local Transport Plan (Online). Accessible at: https://www.warrington.gov.uk/sites/default/files/2019-12/final_ltp4_parts_a_and_b.pdf (Accessed May 2022)

¹³ St Helens Borough Council (2012) St Helens Local Plan Core Strategy (October 2021) (Online). Accessible at: [http://www.knowsley.gov.uk/pdf/LC21_StHelensLocalPlanCoreStrategy\(1\).pdf](http://www.knowsley.gov.uk/pdf/LC21_StHelensLocalPlanCoreStrategy(1).pdf) (Accessed May 2022)

Policy	Policy context
	• Safe and adequate access to and from the public highway; • Sustainable location of significant generators of journeys; • Reduce the adverse impacts of traffic on the community; • Support Local Plan priorities. The policy includes provision to support initiatives to reduce congestion, air pollution and noise on key routes. The support for local plan priorities includes provision that the Council will ensure that development does not prejudice improvements to rail links between Manchester and Wigan, improvements to rail capacity to Liverpool, or improved station accessibility and facilities.
Merseyside Local Transport Plan (LTP3) 14	The Liverpool City Region Combined Authority Transport Plan sets out the vision of the Combined Authority regarding transport development. LTP3 was adopted in 2015 and identifies issues, challenges and objectives which are proposed to be met to achieve the vision of the LTP. St Helens Borough Council does not have its own LTP and the policy objectives for the area are contained within the wider Merseyside LTP3. The document sets out a number of goals and actions to support these goals as follows: • GOAL 2 - Provide and promote a clean, low emission transport system which is resilient to changes to climate and oil availability; ▶ Develop an Alternative Fuel Infrastructure Strategy to identify future fuel needs, infrastructure requirements and delivery models.

¹⁴ Merseyside Transport Integrated Transport Authority (2011) The third Local Transport Plan for Merseyside (Online). Accessible at: https://sthelens.gov.uk/media/3136/Merseyside-Local-Transport-Plan-3-2011/pdf/31279408_Merseyside_LTP3_Full_Web_Hi_Res.pdf?m=637834588989870000 (Accessed May 2022)

Policy	Policy context
	▶ Provide support to operators in using alternative fuel and new technologies in their fleets. ▶ Investigate the use of alternative fuels for the freight sector and link into the Alternative Fuels Infrastructure Strategy.
Halton Borough Deliver and Allocations Local Plan (2014-2037)	Policy C1 Transport Network and Accessibility: Development will only be permitted where: • It does not prejudice the access onto or through the walking and cycling network or it provides a sustainable alternative link of equal quality and convenience; and • It does not affect the enjoyment of the walking and cycling network. The walking and cycling network is understood to include but not be limited to the Greenway Network, The Bridgewater Way, Mersey Way, Timberland Trail, The Trans-Pennine Trail, the cycle network and Public Rights of Way. The Council will support development where it does not have an unacceptable impact on highways safety or residual cumulative impacts on the road network would be severe, appropriate provision for car and cycle parking is made. <i>Transport Assessments and Travel Plans</i> 16. The Council will require the submission of a Transport Assessment or Transport Statement for development proposals that are likely to generate significant numbers of trips, HGV movements and/or have location specific issues or traffic sensitivities. The level and content of supporting Transport Assessments/ Statements should be scoped with the Highway Authority prior to application. 17. A Travel Plan will be required as part of a new development in all of the following circumstances: a. Major development proposals comprising jobs, shopping, leisure and services; b. Smaller development proposals comprising jobs, shopping, leisure and services which would generate significant amounts of travel in or near to air quality management areas;

Policy	Policy context
	c. Where the green travel plan will help to address a particular traffic problem associated with the proposal, which might otherwise have to be refused on local traffic grounds; d. Proposals for new and expanded school facilities (school travel plan). Policy CS15 Sustainable Transport: This policy encourages sustainable transport and supports the existing sustainable transport network within Halton. The policy sets out the requirement for a Transport Assessment and a Travel Plan, where appropriate, for development which generates a significant number of trips. The Policy also encourages the provision of improvements to the sustainable transport network including capacity for innovative transport technology such as the use of alternative fuels and sources of power.
Halton Local Transport Plan¹⁵	The third Halton LTP sets out the Council's vision for development of transport infrastructure and services over the plan period, 2011-2026. The Plan identifies challenges and opportunities in reaching the vision. It sets out 22 primary strategies to guide development, these include: • Strategy 6 - Freight distribution; • Strategy 12 - Peak oil production and emerging vehicle technology; • Strategy 14 - Public Rights of Way and Greenways. Strategy 6 recognises the importance of freight terminals and associated infrastructure, which lies in the Halton Borough. The Strategy highlights initiatives including the Mersey Multimodal Gateway and identifies potential improvements to physical infrastructure. Strategy 12 recognises the transport sectors reliance on oil and states that the case for supporting emerging vehicle technologies including vehicles using hybrid power, electricity and hydrogen, amongst others, is strong. Strategy 14 references a Rights of Way Improvement Plan in which Halton propose to develop, promotes and protect public rights of way.

¹⁵ Halton Borough Council (2011) Halton Third Local Transport Plan (Online) Accessible at:
https://www3.halton.gov.uk/Documents/council%20and%20democracy/transport/Final_LT_P3_Web_Version.pdf (Accessed May 2022).

Technical guidance

11.2.5 A summary of the technical guidance for traffic and transport is given in **Table 11.2**.

Table 11.2 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”¹⁶	Sets out the ways in which National Highways (formerly Highways England) 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 (SRN). The document also sets out 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)¹⁷ publication Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic (GEART)¹⁸	Relevant guidance for assessing potentially significant environmental effects in relation to traffic and transport. The assessment approaches set out within this document have been utilised within this assessment.
“The strategic road network - Planning for	A guide to working with National Highways on planning matters makes reference to the need for EIAs and states that

¹⁶ Department for Transport (2013). The Strategic Road Network and the Delivery of Sustainable Development. (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/237412/dft-circular-strategic-road.pdf (Accessed December 2021).

¹⁷ Now the Institute of Environmental Management and Assessment, IEMA

¹⁸ Institute of Environmental Assessment (1994). Guidelines on the Environmental Assessment of Road Traffic. Institute of Environmental Assessment; Lincolnshire, UK

Technical guidance document	Context
the future – A guide to working with National Highways on planning matters” ¹⁹	“Assessment undertaken by the promoter of the development should be sufficiently comprehensive to establish the likely transport related environmental impacts, including air quality, light pollution and noise, and to identify the measures to mitigate these impacts. To avoid potential delay or challenge, transport assessments/statements and environmental statements/impact assessments should be mutually consistent and pay due potential delay or challenge, transport assessments/statements and environmental statements/impact assessments should be mutually consistent and pay due regard to each other. As such we would expect the transport chapter of the EIA to reflect the information in any Transport Assessment”.
Design Manual for Roads and Bridges ²⁰	The DMRB, produced by National Highways, 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 within the DMRB will be relevant to the design of access proposals. 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).

11.3 Consultation and engagement

Overview

- 11.3.1 The assessment has been informed by consultation responses and ongoing statutory and technical engagement with highway authorities and other relevant stakeholders. An overview of the approach to consultation is provided in **Section 3.4 of Chapter 3: Approach to Preparing the PEIR**.

Scoping Opinion

- 11.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 08 March 2022. A summary of the relevant responses

¹⁹ Highways England (2015). The strategic road network - Planning for the future – A guide to working with National Highways on planning matters. (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/461023/N150227_-_Highways_England_Planning_Document_FINAL-lo.pdf (Accessed August 2022).

²⁰ National Highways (formerly Highways England) - multiple documents available online

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 11.3**.

11.3.3

The information provided in the PEIR is preliminary and not all of the Scoping Opinion comments have been addressed at this stage, however all comments will be addressed within the ES together with evidence of how they have been addressed.

Table 11.3 Summary of EIA Scoping Opinion responses for traffic and transport

Consultee	Consideration	How addressed in this PEIR
Planning Inspectorate (PINS) – ID – 2.6.13	Access – The ES should identify the locations of access routes to site for construction and maintenance. Any likely significant effects resulting from their use should be assessed.	Section 11.12 sets out the results of the preliminary assessment of the traffic and transport effects on the local highways network in the Study Area.
PINS – ID – 3.1.7	Operational Phase Effects – The Applicant proposes to scope out effects on roads and users of these routes from traffic associated with the operational phase and maintenance activities, on the basis that the volume of vehicle movements during operation would be low, taking into account the expected maintenance operations associated with the project. The Inspectorate agrees that the magnitude of change and significance of effect would be negligible on that basis and agrees that this matter can be scoped out of further assessment on the basis of the evidence provided.	As agreed with the Planning Inspectorate this has been a scoped out of assessment as set out in Section 11.8 .
PINS – ID – 3.7.2	Decommissioning Phase – Effects on Roads, Public Rights of Way (PRoW) and users of these routes - The Applicant proposes to scope out effects on roads, PRoWs and users of these routes from traffic associated with the decommissioning phase on the basis that decommissioning would involve leaving the pipeline in-situ and making it safe, which would typically involve rail, road and watercourse crossings being filled with grout and	A Preliminary Public Rights of Way Management Plan (PRoWMP) has been prepared (Appendix 11B) which sets out that all PRoW impacts from the Project are temporary in nature and none of the HAGI sites are proposed across PRoW. Therefore, there are no decommissioning impacts on PRoW.

Consultee	Consideration	How addressed in this PEIR
	the removal of all HAGIs, followed by restoration of the land to its former use. The Inspectorate considers that the effects associated with pipeline decommissioning are unlikely to be significant, however insufficient information has been provided regarding the location of HAGIs to understand the scale and nature of effects on PRow and users during the decommissioning phase and these effects should be assessed in the ES.	
PINS – ID – 3.7.3	Effects on roads, PRow and users of these of hazardous loads at all phases of the Project- The Applicant proposes that effects on roads, PRow and users of these routes from hazardous loads at all phases of the Project can be scoped out, on the basis that no hazardous loads are anticipated. The Inspectorate is content with this approach.	As agreed with the Planning Inspectorate this has been a scoped out of assessment as set out in Section 11.8 .
PINS – ID – 3.7.4	Scope of Assessment – Canal Bridges - The potential impact of Heavy Goods Vehicle (HGV) traffic on canal bridges should be assessed as part of the ES, with particular regard to load bearing capacity and the use of bridges by heavy vehicles and the risk of harm to both users and the underlying structure of the highway and waterways. The Applicant's attention is drawn to consultation responses from the Canal and River Trust in this regard	Appendix 11A Preliminary Construction Traffic Management Plan (CTMP) sets out the proposed construction routes required for HGVs on the project.
PINS – ID – 3.7.5	Scope of Assessment – Construction Traffic - The Inspectorate notes that construction traffic is likely to pass through or be in close proximity to multiple residential areas, including small towns and villages. The Applicant should demonstrate that the route for construction traffic has considered the	Section 11.12 set out a preliminary assessment of the traffic and transport effects on the local highway network. This assessment focuses upon a number of key receptor locations and is informed by the preliminary HGV access strategy set out in Appendix

Consultee	Consideration	How addressed in this PEIR
	suitability of roads for HGVs, particularly those transporting Abnormal Indivisible Loads (AIL) and that construction routes have been developed to avoid impacts on the local community where possible. The Applicant's attention is drawn to consultation responses from Helsby Parish Council, Pickmere Parish Council, Lostock Gralam Parish Council, Acton Bridge Parish Council and Thornton le Moors Parish Council in this regard.	11A (CTMP). The HGV access strategy has been developed to avoid settlements as much as possible utilising key A roads and seeks to adopt the shortest distance from Strategic Road Network (SRN).
PINS – ID – 3.7.6	Scope of Assessment – PRow - Scoping consultation responses have identified a number of pending PRow and footpaths that appear not to have been addressed in the Scoping Report, the Inspectorate considers that these should be incorporated into the PRow assessment. The Applicant's attention is drawn to the consultation response from Cheshire West and Chester Council in this regard.	Appendix 11B - Preliminary PRow Management Plan (PRowWMP) sets out the impacts at all the PRow which are affected by proposed Preliminary Order Limits.
Acton Bridge Parish Council	1 - What measures will be put in place to limit disruption to local residents during the installation? The A49 that runs south of Warrington from the M56 and through Acton Bridge is a major road with a large volume of traffic. The plans look like there will be major disruption to this road and are no suitable diversions with the only alternative being diversions through small local villages which would have a significant impact on residents who live both in and around the vicinity. The A49 at Acton Bridge is also the only major crossing point of the waterway in this area. This would mean long detours would be required to Frodsham or Northwich, which also needs to be taken into account. The works will need to be planned very carefully with a full	The HGV Access Strategy has been provided to support this chapter in the Preliminary CTMP Appendix 11A . Within this appendix it sets out that it is proposed that only a limited number of HGVs will route along the A49 between Sandiway and the junction with the A533. It is not proposed to use the A49 as a route for HGVs for all the sections to be constructed south of Northwich. As such only the sections of pipeline between the Central HAGI and the crossing of the Northwich to Chester rail line would route through Action Bridge.

Consultee	Consideration	How addressed in this PEIR
	understanding of the traffic and routes that will be impacted, otherwise there will be gridlock. Consideration will need to be given to routes, facilities, storage etc for the Contractors completing the work, such that it minimises impact on the local residents.	
Canal and River Trust	The proposed works, in particular the construction routes would potentially cross our waterways. The potential impact on the canal bridges should be assessed as part of the Environmental Statement. Of particular concern would be the use of accommodation bridges owned by the Trust. Accordingly, the Trust has different obligations maintaining such bridges in comparison with public road bridges. When the canals were built, the accommodation bridges were built to restore existing routes which were severed by the new canal. Therefore, the load obligation would ordinarily be the previous use, for example by horse-drawn carts. If nothing has changed and bridges have not subsequently been strengthened, then the previous use still defines the required load bearing capacity of the bridge, with the modern equivalent deemed as being a 3-tonne maximum gross vehicle weight. This does not mean that the bridges do not necessarily have the capacity to carry an increased vehicle weight, but that the Trust has no obligation to maintain it at any greater capacity. As a consequence, the use of accommodation bridges by vehicles heavier than 3 tonnes may increase the risk of harm to both users and the underlying structure of the highway and waterways.	The proposed HGV Access strategy along the local highways network is set out in the Preliminary CTMP Appendix 11A. The following crossings of the Canal and River Trust network are identified: • Weaver Navigation – M56 (Bridge); • Weaver Navigation – A56 (Swing Bridge); • Weaver Navigation – A49 (Swing Bridge); • Trent and Mersey Canal – A49 (Bridge); • Trent and Mersey Canal – A533 (Bridge); • Trent and Mersey Canal – Soot Hill (Bridge); • River Weaver – A533 (Swing Bridge); • River Weaver – A556 (Bridge); • Trent and Mersey Canal – A556 (Bridge). The HGV Access Strategy has been designed to avoid inappropriate crossings of the canal network. There are no proposals to use weight

Consultee	Consideration	How addressed in this PEIR
		restricted or hight restricted crossings of the Canal and River Trust network. In addition to bridges on the local highways network it is proposed to use two bridges across the Canal and River Trust network for onsite haul routes. Details of these are provided below. • Dutton Hall Bridge 211 – Trent and Mersey Canal – Proposed as light vehicle access only • Richardson's Bridge 178 – Trent and Mersey Canal – Proposed light vehicle access only
Cheshire East Council	Cumulative Impacts with HS2 - The route of the pipeline corridor within Cheshire East crosses the proposed route of the HS2 Phase 2b at A533 south of Northwich and to the north at the A559. It also impacts on the land identified as required for associated construction, infrastructure and mitigation measures.	The cumulative impacts of the proposed HS2 project and the Project have not been assessed at PEIR. The documentation submitted at the consultation stage for the HS2 project does not provide traffic data at a detailed enough level to allow for consideration in this ES Chapter. The Applicant has made a commitment to review committed highways and rail schemes in the post Section 42 phase as other congruent projects evolve. Not including HS2 construction traffic in the future year baseline means that the assessment reported in this PEIR is a worst-case approach as the traffic flows will be lower and therefore the proportional impact will be higher.

Consultee	Consideration	How addressed in this PEIR
Cheshire East Council	Highways - The proposed scope and methodology of assessment in relation to the traffic and transport impact of the pipeline is considered acceptable; the assessment will need to be mindful of the latest iteration of the planned HS2 phase2B railway	The scope of assessment agreed in the CEC Scoping Opinion was discussed in a further technical meeting set out in Section 11.8
Cheshire West and Chester Council	Highways - The Council's Highways Officer is supportive of the general proposed scope of the traffic and transport assessment section of the ES. They however note that the ES Transport Chapter would appear to only include a CTMP and not a specific Transport Assessment (TA). The Highways Officer advises that, as much of the impacts are related to the Construction Period, as the ongoing traffic for maintenance of the pipeline etc. will be small and that this approach could be acceptable, but provided that the CTMP does undertake a TA type assessment for the construction period.	The scope of assessment agreed in the CWAC Scoping Opinion was discussed in a further technical meeting set out in Section 11.8. In technical discussions, the requirement for a TA was discussed and it was agreed to revisit this potential requirement in the CWAC area following the submission of the PEIR.
Cheshire West and Chester Council	PRoW - The Council's PRoW Officer advise that a detailed methodology for the assessment or consideration of impacts to PRoW should be scoped into the ES, including direct and indirect impacts for both construction and operation phases. The assessment should include consideration to construction methods including any vibration impacts on any right of way as well as impacts upon users of the PRoW network from construction traffic and accidents. The assessments also need to address the impact on different classes of users where the status of the way is more than a footpath (e.g. bridleway, restricted byway). For example, at Frodsham, there is a restricted byway on the line north of the M56 and the class of user includes non-mechanical vehicles; Restricted Byway 23 Helsby	Appendix 11B is a Preliminary PRoWMP which sets out the impacts at all the PRoW, which are affected by proposed Preliminary Order Limits. The PRoWMP includes details of the proposed impacts on footpaths, bridleways, byways open to all traffic and restricted byways. In addition to PRoW, the document sets out impacts on Areas of Open Land (AOL), Other Routes with Public Access (ORPA) and permissive footpaths and bridleways. A detailed discussion with the CWAC PRoW Officer was undertaken as a separate

Consultee	Consideration	How addressed in this PEIR
	is used for emergency access to M56 and; the routes on the north side of the M56 are prone to anti-social behaviour (fly tipping) so sensitivity will be needed approaching any closures and direction of traffic flow.	technical meeting and the details of this are set out in Section 11.3 . Vibration impacts are considered in Chapter 10: Noise and Vibration .
Cheshire West and Chester Council	PRoW – Specific Comments - The proposed route over land to the east of Northwich is affected by advance proposals for the HS2 project. The PRoW is currently under notice of modifications under the HS2 Bill. - North of Northwich; A multi-user promoted route has been missed – at Aston/Dutton the Aston ring is a horse riding recreational route (attached) at Aston Heath. The routes are currently closed due to no through route from badger disturbance near the river but are expected to be repaired this summer 2022, with an expected increase in traffic thereafter. - East- Antrobus area has a few pending applications for an upgrade of status, there may be higher status traffic than the PRoW suggests (eg footpath being used by horse riders); - Weaverham south of Winnington Lane - there is a pending Order for a footpath from Winnington	The PRoWs affected by the HS2 project which also cross the Preliminary Order Limits are Agden FP3 and Agden FP1. Details of this are set out in Appendix 11B (PRoWMP). The impacts on the Aston Ring recreational riding route are included in Appendix 11B (PRoWMP) as the impacts on Aston BR6, Dutton BR22, Dutton BR15, Dutton BR11, Dutton BR13 and Little Leigh BR15. In the Antrobus area only one PRoW is identified as being directly impacted by the Project (Anthrobus BR1) and this is included in the assessments in Appendix 11B (PRoWMP) A review of this route indicates this is no longer affected by the Preliminary Order Limits.

Consultee	Consideration	How addressed in this PEIR
	Lane through Beech Woods; - On the route south of Gorstage at the Forest Hill sand quarry, there are some permissive pedestrians routes; - At Whatcroft, the footpath along the canal walk includes access routes at the canal bridges, which do not show up on maps but is thought to form part of a circular walks; - East of Lostock CWAC has had counters in place and the footpath linking the north and south side of the A556 by-pass shows heavy usage; - Woodland adjacent to A556 on north side and then east of Lostock, reportedly has walkers –CWAC has received queries about claiming ProW in this area, although there are no pending applications; and - A558 Higher Marston pedestrian route to Northwich – this area; Northwich – Comberbach, Marston, Wincham, have connecting footpaths with road walking if possible, mitigate with pedestrian walkways.	A review of this route indicates this is no longer affected by the Preliminary Order Limits. A review of this route indicates this is no longer affected by the Preliminary Order Limits as the route lies more southerly than that proposed at scoping. The Preliminary Order Limits do not include a route north and east of Northwich. As such no impacts are identified on the PRoW north and south of A556 in this location. The Preliminary Order Limits do not include a route north and east of Northwich. As such no impacts are identified on the PRoW north and south of A556 in these locations. The Preliminary Order Limits do not include a route north and east of Northwich. As such no impacts are identified on the PRoW in this area.
Helsby Parish Council	Traffic and Transport Comments The Council wishes to support the assessments proposed, particularly in terms of the impact of traffic and transport on the West corridor	This Chapter includes details of the traffic and transport impacts on the agreed scope (and receptors). Ongoing

Consultee	Consideration	How addressed in this PEIR
	described in Sections 11.5.7 and 11.5.8 (of scoping chapter). The Parish Council notes that consultations will be held with highways authorities and CWAC in this respect and would also like to request that town and parish councils are involved too. As a local council, there is detailed knowledge and experience of the likely impact of construction traffic in the Parish Council areas. In particular, the following observations are highlighted at this stage: • If the M56 is closed for any reason, the A56 becomes gridlocked; • There is a new cycle lane being constructed along the A56 between Helsby and Frodsham which is likely to be busy with pupils attending Helsby High School; • The access route off the A56 down Lower Rake Lane includes a bridge over the railway line which has width and weight restrictions. This will limit the type of construction vehicles able to use the route;	consultation will be undertaken with key stakeholders and traffic numbers will be published in the ES supporting the DCO application. Noted. The operation of the M56 is not in the control of the Applicant, but the CTMP sets out how deliveries to the sites will be subject to delivery time frames per day and that there will be an approach for “exceptional circumstances” where later deliveries would be accepted for matters such as severe delay arising from motorway closures. Noted. The element of Lower Rake Lane required for access is not adopted so there are no posted height and weight restrictions. Consultation with Network Rail regarding these restrictions will be undertaken. Alternative access routes into this area are also proposed. It is not proposed to use this route for HGV traffic.

Consultee	Consideration	How addressed in this PEIR
	The access route off the A56 down Hatley Lane and Straight Length passes under a railway bridge which has a height restriction. Again, this will limit the suitability for construction vehicles. The alternative route down Godscroft Lane has the same problem. In addition, the Godscroft Lane/A56 junction adjoins the high school and is a very busy area of the A56.	It is noted that the route from Hatley Lane would require vehicles to route under a 12'0" height limit rail bridge or use Godscroft Lane and use a 11'3" high limit bridge. Some HGVs could use the Hatley Lane route based on the height restrictions. Due the presence of sensitive receptors, this route has been removed from the HGV Access Strategy set out in Appendix 11A (CTMP).
Knowsley Council	Highways - The proposed pipeline 'Scoping Boundary' (based on Figure 14.1 – EIA Scoping Report) does not encroach into the Knowsley Borough Boundary (although a small section of the Land Use Study Area does). The adopted highway should not be directly affected as a result; however, a couple of roads mentioned within Chapter 11 (traffic and transport) do run through Knowsley. Although the specific sections of the roads discussed are outside the borough, it is within Knowsley Council's interests to remain aware of any construction traffic that may be routed through our network. The EIA document is subject to change and the road networks discussed as part of the Study Area are an estimation of those routes which could be utilised by construction traffic. Knowsley Council is not included within the EIA document as being a key stakeholder for consultation, given that the pipeline is not proposed to run through the Borough (or construction traffic). However, it is Knowsley Council's request that we remain up to date on any amendments to the scheme and	The Preliminary Order Limits do not encroach into the Knowsley Borough Boundary. Appendix 11A (CTMP) sets out the proposed HGV access routes for the Project and the routes from the SRN to the proposed accesses and none of these routes are proposed on the KBC network. KBC will have an opportunity to comment on the PEIR documentation, and should it be wished consultation directly with KBC can be undertake post Section 42 consultation.

Consultee	Consideration	How addressed in this PEIR
	any proposed routes for construction traffic that could utilise our highway network.	
Lostock Gralam Parish Council	Highways - This timeline clashes with the HS2 build project in the Lostock Gralam area and looking at the possible route of the pipeline it encroaches on the HS2 Smoker Viaduct South Satellite Compound and the construction of the Smoker Viaduct. The Parish Council is concerned that this has not been considered and may cause further disruption and blight on the local area with PRoWs already being closed leading to less outdoor spaces and more traffic movements.	The change of boundary of the Project from scoping to the Preliminary Order Limits now means that the routes of the Project that were to the east and north of Northwich through the Parish of Lostock Gralam have been removed from the assessment. Impacts on PRoW and local highways in this Parish have therefore been mitigated through avoidance. Some traffic is however still proposed to be required to use the key local A Road (A556) and an assessment of the impacts on this road are set out in Section 11.10
National Highways	National Highways are content with the proposed traffic and transport Study Area . However, as the siting of compounds and haul routes has not fully been identified yet, the Study Area may need to change to encompass these factors should their locations potentially impact beyond the Study Area. The EIA Scoping Document makes reference to numerous crossings of the Strategic Road Network, identifying that this would be achieved through trenchless technology. However, further detail is needed to understand exactly where these crossings are to be located. Any third party works involving trenchless installations under the National Highways road network will require geotechnical certification and would require a Section 50 Agreement.	The Study Area in this chapter has been discussed with National Highways pre-Section 42 consultation and the scope presented in this chapter was confirmed. It was agreed this would be reviewed after the submission of the PEIR. Ongoing discussions will continue through the development of the Project between the Applicant and NH to establish site specific requirements for the final crossings of the highway and these will be presented for the DCO submission.

Consultee	Consideration	How addressed in this PEIR
	The EIA Scoping Note makes reference to construction compounds, Hydrogen Above Ground Installations (HAGIs) and other infrastructure. National Highways are keen to understand where these compounds are likely to be located, along with the potential access/haul routes. Paragraph 2.6.13 makes reference to temporary access points from the local Highway Network. National Highways would be keen to understand where these may be located within the vicinity of the Strategic Road Network National Highways' guidance document Circular 02/2013 "The Strategic Road Network and the Delivery of Sustainable Development" states that "new accesses to busy high speed strategic roads lead to more weaving and turning manoeuvres, which in turn create additional risk to safety and reduce the reliability of journeys, resulting in a negative impact on overall national economic activity and performance". As such we would be unlikely to approve any temporary access for construction traffic from the Strategic Road Network. National Highways are keen to work with the developer to understand potential transport impacts associated with the location of the compounds and haul routes. National Highways are also keen to understand the anticipated timescales involved around this project, particularly in relation to potential traffic impacts on the Strategic Road Network as well as for any sub surface tunnelling at locations around the SRN	In post scoping discussions with National Highways it has been agreed that no direct accesses will be proposed to the SRN for the construction or operational phases and as such the Project is considered compliant with "The Strategic Road Network and the Delivery of Sustainable Development" requirements. The proposed temporal time frames of the Project to inform the assessments in this chapter are set out in Section 11.8
Network Rail	The proposal appears to include railway land or access under railway land within the proposed red line area. The applicant will therefore need agreement to any access from	The Preliminary CTMP (Appendix 11A) sets out all locations where crossings of the local rail network and proposed HS2 line are

Consultee	Consideration	How addressed in this PEIR
	Network Rail. The following should be emailed as below with the details. No works are to commence until agreed with Network Rail.	proposed. Discussions will be ongoing with NR through leading up to the application to agree the process for crossing the national rail network.
Pickmere Parish Council	Consideration of the impacts of the project prior to and during the construction process, including visual impacts, noise, traffic and pollution, including consideration of the impacts of engineering operations, and the movement of materials to and from the project site. Consideration of the impacts of the project on the Parish's road and public footpath networks, both prior to and during the construction phase and when the scheme is complete.	This chapter and Preliminary CTMP (Appendix 11A) set out the proposed impact on the local highways network. It is noted that since the scoping data was provided for comment the routes around the north east of Northwich have been removed from the scope of assessment. As such direct impacts on Pickmere have been removed. No HGV construction traffic is proposed through the Parish and the nearest HGV construction route is the A556.
St Helens Borough Council	The Council's Highways Officers have commented that an EIA Scoping Report has been provided which sets out the methodology that will be used for the transport input into the EIA and the areas to be considered: • Proposed traffic growth to future year. • Committed highways schemes that may affect the future baseline. • Committed development that may affect the future baseline. • Scope of the assessment. • Existing traffic data and data collection techniques considering potential lingering effects of the COVID-19 pandemic and	This Preliminary traffic and transport Chapter has addressed the requirements of St Helens Borough Council in the following sections: • Traffic Growth – Section 11.6; • Committed highways schemes – Section 11.6; • Scope of assessment – Section 11.8; • Existing traffic data and collection – Section 11.6; • PRow Impacts – Preliminary PRowMP (Appendix 11B);

Consultee	Consideration	How addressed in this PEIR
	lockdowns on road traffic in the area. - Public Rights of Way (PRoW) management. - Potential traffic generation. - HGV management. - Identification of additional transport evidence base documents to support the Development Consent Order application, such as a Construction Traffic Management Plan (CTMP) and PRoW Management Plan; and - Permanent access design to the Hydrogen Above Ground Installations (HAGIs). The PRoW management should consider all forms of Active Travel routes and be compliant with the latest policies. Further details of St Helens Council requirements for Transport Assessments are provided in Supplementary Planning Document “Ensuring a Choice of Travel”. It is expected that the major impacts of the pipeline would occur during the construction stages and therefore a comprehensive Construction Environmental Management Plan (CEMP) would be required to consider the impacts on the highway network at this time. The CEMP should include, but not be limited to: - Construction traffic routes, including provision for access to the site. - Entrance/exit from the site for visitors/contractors.	- Traffic Generation – Section 11.10 - HGV Management – Preliminary CTMP (Appendix 11A); - Access designs – (Section 11.10) The Preliminary PRoWMP sets out impacts on all local PRoWs and open access land. Impacts on local cycle routes and other active travel routes are set out in this chapter within Section 11.6.

Consultee	Consideration	How addressed in this PEIR
	• Siting of temporary containers. • Parking for contractors. • Identification of working space and extent of areas to be temporarily enclosed and secured during each phase of construction. • Temporary road/areas of hard standing. • Schedule for large vehicles delivering/exporting materials to and from site; the movement of large vehicles would usually be restricted to avoid impact during the peak highway hours and would also consider proximity to schools. • Details of street sweeping/street cleansing/wheel wash. • Hours of working. • Phasing of works. • Details of turning facilities for use by construction vehicles. • Traffic management proposals. • Severance/Impacts on active travel routes Following construction of the pipeline, the route will be buried with the exception of a number of locations where permanent Hydrogen Above Ground Installations (HAGIs) or Block Valves (BVs) will be installed. These facilities will require permanent access from the highways network and will	Details on the permanent access proposals are set out within this traffic and transport Chapter in Section 11.10. This will be updated and formalised post Section 42 consultation with the various local highways authority with a proposal to agree the design of any permanent accesses that are required.

Consultee	Consideration	How addressed in this PEIR
	include some parking for operatives. To enable full consideration of the highways impacts and any impacts on active travel routes, plans of the accesses would be required together with details of the day-to-day operational requirements	
Thornton Le Moors Parish Council	The Parish Council has major concerns about traffic flows, both during the construction phase and once the facility is operating. Our village is very cut off, and our only practical access is via the A5117 (unless you take a 7 mile detour via the lanes). The A5117 is already a very busy arterial road with many HGV travelling at 60 mph. Our particular concern is safe crossing for pedestrians to the bus stop and cycleway. An additional concern is village residents being able to safely turn into and out of the village in cars. The A5117 is a very long straight road, and road users are not expecting any obstacles. The only crossing point is a traffic island. This is not visible to cars or commercial vehicles approaching at speed from the Elton/HyNet traffic lights. We have 7 or 8 children as young as 11 years old crossing this road on a daily basis at dusk morning and evening to use the bus service. I understand that a development of this kind will involve Section 106 Funding. We, the parish council, would like to see, as part of the works Traffic Management Plan, mitigating actions to support safe travel and safe crossing for Thornton le Moors residents. We would like to see Section 106 Funding allocated to create a permanent safe crossing point for Thornton le Moors residents. In our view this needs to be in the form of a traffic light pedestrian crossing, with	Thornton Le Moors is located to the east of the proposed pipeline corridor. The Preliminary CTMP (Appendix 11A) sets out the proposed HGV access routes to the proposed accesses on the Project. It is proposed that to build the Project east of Thornton Le Moors traffic would leave the M56 and route along the A5117. However, all HGV traffic would leave the A5117 before the village/parish. No HGV traffic would route along the A5117 within the village setting. No HGV traffic would be required to use Thornton Green Lane. Therefore, with no additional HGV traffic along the A5117 it is not proposed that any additional infrastructure for pedestrians would be required to be supported by the project in Thornton-le-Moors.

Consultee	Consideration	How addressed in this PEIR
	visibility for those approaching up the rise from Elton.	
Trafford Council	Construction routes will need to consider capacity on the existing road network, particularly in relation to the A6144 and M60 J8. Construction of the project will need to consider cumulative impacts on the road network with other major projects in the area that may occur simultaneously, including approved development, the PfE New Carrington allocation, Carrington Relief Road and HS2 Golborne Link, as discussed below.	As set out in the Preliminary CTMP (Appendix 11A) construction traffic is proposed to use the A6114 from the M60 junction 7 to where the Preliminary Order Limits end in Partington. Two receptor locations have been identified on this link and the impact of the traffic on the receptors is set out in Section 11.8. The M60 has also has two receptors identified on between junction 10 and 9 and between junction 5 and 6. The Carrington Bypass scheme has been noted at PEIR, and detailed technical discussions (set out in Section 11.3) with Trafford Council have set out that this would not need to form part of the future baseline and that further discussions post Section 42 consultation will be undertaken to define if and how this could affect the assessment report at DCO submission. An initial review of the scheme indicates that the project's boundary would not affect the Project. The presence of a completed road in the future years of assessment for the Project would be considered to be a benefit to the conveyance of HGV loads to the construction corridor.
Warrington Borough Council	Overall the content and methodologies detailed in the Scoping Report are considered appropriate in respect of the traffic and transport issues arising from the construction of the pipeline;	The issues raised by Warrington Borough Council (WBC) at the scoping stage are addressed in the following

Consultee	Consideration	How addressed in this PEIR
	although much of the detail is still to be defined. All works affecting the highway will be required to meet the Council's requirements and any future Development Consent Order will require close liaison and approval of the Council as Highway Authority in line with the New Roads and Streetworks Act 1991 and the Traffic Management Act 2004. Further detail will be required of the construction process at crossing points of the Council's highway network as well as the extent of working areas and details of temporary compounds. Similarly, details will be required of proposed temporary and permanent access points to the Council's highway network. Detailed discussions will be required to determine potential impact on the existing highway and PRow network, proposed highway improvement schemes (particularly the Western Link), proposed highway and bridge maintenance schemes and future development proposals. Any assumptions in relation to traffic surveys or growth factors (particularly in respect of the impact of COVID-19) should be agreed with the Council as Highway Authority. WBC has undertaken detailed monitoring throughout the period affected by COVID-19 and can provide feedback on baseline traffic levels The accident assessment of key routes should be based on the latest STATS19 data available from roadsafety@warrington.gov.uk (not Crashmap)	locations within the PEIR submission: • All highways works required on the project would be in line with the New Roads and Streetworks Act 1991 and the Traffic Management Act 2004 as set out in the Preliminary CTMP (Appendix 11A). • The Preliminary CTMP (Appendix 11A) sets out a detailed crossing schedule of all roads, rail and navigable waterways including those within WBC. • A Preliminary PRowMP (Appendix 11B) has been prepared to set out impacts on all local PRow and open access land would be addressed including those within WBC. • The Western Link scheme has been noted at PEIR, and technical discussions were undertaken (set out in Section 11.8) with WBC to discuss any impacts which may occur as a result of changes to the future baseline. It was agreed that this scheme would not be included in this PEIR assessment. It would appear that the projects would directly impact upon each other although this would be dependent upon the final

Consultee	Consideration	How addressed in this PEIR
	It is accepted that the impacts of traffic associated from operational and maintenance activities be scoped out and that the EIA assessment will be undertaken for the construction phase only. The use of the two rules-of-thumb provided within Institute of Environmental Assessment: Guidelines for the Environmental Assessment of Road Traffic (1993) (GEART) are considered generally appropriate, however, there may be areas where the cumulative impact of other construction-related schemes e.g. Western Link require more considered assessment. It is accepted that a full Transport Assessment will not be required, however, it is considered that details will be required of the specific transport/highway issues (including detail of vehicle movements) at key locations i.e. construction compounds, main access points etc. This may be addressed via a Construction Management Plan although a series of Transport Statements is likely more appropriate.	route choice for the pipeline. - The traffic growth methodology set out in this PEIR chapter includes the methodology which has been agreed with WBC. - Detailed discussions with WBC accepted that Crashmap data could be used to inform this PEIR assessment and WBC data would be sought to inform the DCO submission. - Comments on the EIA assessment being based on GEART are noted and there is a commitment that following the Section 42 discussion detailed consultations with WBC will be undertaken related to any requirements for any additional site specific studies that may require Transport Statements.

Technical engagement

11.3.4 Technical engagement with consultees in relation to traffic and transport is ongoing. A summary of the technical engagement undertaken to date is outlined in **Table 11.4**.

Table 11.4 Technical engagement on the traffic and transport environmental assessment

Consultee	Consideration	How addressed in this PEIR
National Highways – High Level -	Agreement that the future year time frames would indicate that the HS2 Phase 2b and North West	This is not considered at PEIR but there is a commitment to include the HS2 proposals as part of the DCO submission.

Consultee	Consideration	How addressed in this PEIR
7 March 2022	HyNet Hydrogen Pipeline are likely to overlap; Suggestion that Cadent construction during 2025 would overlap with RSI3 and that there could be the possibility of efficiencies through the advanced/join ordering of materials; and Cadent would need to speak to the Land and Property team at National Highways.	Further discussions will be undertaken post Section 42 consultation regards this potential opportunity. Ongoing, discussions also required post Section 42 consultation.
National Highways – Traffic and Transport ES Assessment- 5 May 2022	All crossings of the SRN would be non-invasive and that no surface carriageway works would be required at these locations; Ongoing consultation will be required between Cadent engineers and the National Highways geotechnical and structural staff regards the non-invasive crossing locations; Agreement that issues related to any capacity assessments of National Highways junctions could be addressed post Section 42 consultation. National Highways may accept some junction specific assessments in appended technical notes and that a full TA was considered to be unnecessary; National Highways agreed with the scope of the Study Area set out at scoping and the range of reports proposed and set out in the meeting. Post meeting additional receptors on the SRN were added to this assessment;	Appendix 11A (Preliminary CTMP) sets out the locations of all crossings of the SRN and the how these are proposed to be trenchless crossings. Ongoing, discussions also required post Section 42 consultation. No TA or capacity assessments have been presented in the PEIR assessments but there is a commitment to revisit the need for these with all strategic and local highways authorities post Section 42 consultation. The receptors on the SRN agreed with NH are detailed in Section 11.8. Accesses proposed for the Project are set out in Appendix 11A

Consultee	Consideration	How addressed in this PEIR
	Agreement that no direct accesses to the SRN would be proposed as part of the Project; National Highways agreed with the proposed methodology for traffic growth, traffic distribution, accident assessment (based on Crashmap²¹), use of 2019 traffic data from the online DfT road traffic statistics²² to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment. There were no committed highways schemes from National Highways in the scope of assessment that should be considered in the future baseline;	(Preliminary CTMP) showing no direct accesses to the SRN. The traffic growth methodology (Section 11.6), traffic distribution (Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with National Highways as a basis for this preliminary assessment. Section 11.1 sets out why no committed schemes are considered as part of the future baseline for this PEIR assessment.
Cheshire East Council (CEC) - Traffic and Transport ES Assessment- 30 May 2022	CEC agreed with the proposed methodology for traffic growth, traffic distribution, accident assessment (Crashmap), use of 2019 DfT traffic data to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment. CEC agreed at the scope of assessment, the HGV access strategy and proposed receptors. It is proposed that all crossings of the CEC major A road network	The traffic growth methodology (Section 11.6), traffic distribution (Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with CEC as a basis for this preliminary assessment. The scope of assessment (Section 11.8), HGV access strategy (Appendix 11A Preliminary CTMP) and proposed receptors (Section 11.10) were all agreed with CEC as a basis for this preliminary assessment. Appendix 11A (Preliminary CTMP) sets out the locations of all

²¹Crashmap (2022). Crash Mapping. (online) Available at: <https://www.crashmap.co.uk/Search> (Accessed August 2022).

²²Department for Transport (2022). Road Traffic Statistics (online) Available at: <https://roadtraffic.dft.gov.uk/#/6/55.254/-6.053/basemap-regions-countpoints> (Accessed August 2022).

Consultee	Consideration	How addressed in this PEIR
	would be undertaken using trenchless crossings. Impact of the Project and the proposals for HS2 in the CEC area. No requirement to consider any committed development or highways schemes in the future baseline	crossings of the SRN and the how these are proposed to be trenchless crossings. Section 11.1 sets out that HS2 has not been considered in this PEIR assessment but will be considered for the DCO submission. No committed schemes are considered in this PEIR assessment and Section 11.1 sets out those schemes that will be considered as part of the DCO submission.
Chester West and Chester Council (CWCC) – Traffic and Transport ES Assessment – 7 June 2022	Consideration of the adjacent HyNet Carbon Dioxide Pipeline Scheme. Scope of assessment in the CWAC area was agreed and it was welcomed that no HGVs were proposed through Frodsham and Helsby. It is proposed that all crossings of the CWAC major A road network would be undertaken using trenchless crossings. Agreement that issues related to any capacity assessments of CWAC junctions could be addressed post Section 42 consultation. CWAC may accept some junction specific assessments in appended technical notes and that a full TA	Section 11.1 sets out that this will be considered for the DCO submission as no data from the CO₂ scheme is available at the time of the preparation of this PEIR Chapter. The scope of assessment (Section 11.8), HGV access strategy (Appendix 11A Preliminary CTMP) and proposed receptors (Section 11.10) were all agreed with CWAC as a basis for this preliminary assessment. Appendix 11A (Preliminary CTMP) sets out the locations of all crossings of the CWAC network and the how these are proposed to be trenchless crossings. No TA or capacity assessments have been presented in the PEIR assessments but there is a commitment to revisit the need for these with all strategic and local highways authorities post Section 42 consultation.

Consultee	Consideration	How addressed in this PEIR
	was considered to be unnecessary. No requirement to consider any committed development or highways schemes in the future baseline CWAC agreed with the proposed methodology for traffic growth, traffic distribution, accident assessment (Crashmap), use of 2019 DfT traffic data to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment.	No committed schemes are considered in this PEIR assessment and Section 11.1 sets out those schemes that will be considered as part of the DCO submission. The traffic growth methodology (Section 11.6), traffic distribution (Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with CEC as a basis for this preliminary assessment.
Chester West and Chester Council – PRow (CWCC) – 25 May 2022	Details of changes to the scheme design since scoping and how this has reduced the number of impacts on PRow in CWAC. Discussions on the comments made at the scoping stage on PRow by CWAC. CWAC set out that there were very few permissive paths in the CWAC area. CWAC stated that the “shared routes” approach for PRow running along construction traffic haul roads was something that CWAC have experience in from solar farm construction. Managed routes of this nature can be discussed post Section 42. Impacts on local and national cycle routes in the area.	The Preliminary PRowMP (Appendix 11B) sets out details on the issues discussed at the meeting. This document sets out the PRow impacted by the Project based on the current design stage. The document also sets out permissive paths affected by the Project and locations where shared route strategies may be appropriate. The comments made by CWAC on PRow at the scoping stage are addressed in Table 11.3. The traffic and transport Chapter also sets out impacts on the national and local cycle network and how this may be managed.

Consultee	Consideration	How addressed in this PEIR
Warrington Borough Council (WBC) - Traffic and Transport ES Assessment – 31 May 2022	Scope of assessment in the WBC area was agreed.	The scope of assessment (Section 11.8), HGV access strategy (Appendix 11A Preliminary CTMP) and proposed receptors (Section 11.10) were all agreed with WBC as a basis for this preliminary assessment.
	It is proposed that all crossings of the WBC major 'A' road network would be undertaken using trenchless crossings.	Appendix 11A (Preliminary CTMP) sets out the locations of all crossings of the WBC network and the how these are proposed to be trenchless crossings.
	Agreement that issues related to any capacity assessments of WBC junctions could be addressed post Section 42 consultation. WBC may accept some junction specific assessments in appended technical notes and that a full TA was considered to be unnecessary.	No TA or capacity assessments have been presented in the PEIR assessments but there is a commitment to revisit the need for these with all strategic and local highways authorities post Section 42 consultation.
Trafford Council (TC) - Traffic and Transport ES - Assessment – 24 June 2022	WBC agreed with the proposed methodology for traffic growth, traffic distribution, accident assessment (Crashmap), use of 2019 DfT traffic data to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment.	The traffic growth methodology (Section 11.6), traffic distribution (Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with WBC as a basis for this preliminary assessment.
	Scope of assessment was partially agreed. The issue of HGVs on the B5160 being inappropriate due to a low high bridge was discussed. Agreed to use a new route into this area following the proposals of HS2.	The scope of assessment (Section 11.8), HGV access strategy (Appendix 11A Preliminary CTMP) and proposed receptors (Section 11.10) were all agreed with TBC as a basis for this preliminary assessment. This included a new route into the area through Partington as proposed by HS2 and two new receptors in the village.
	It is proposed that all crossings of the TBC major A road network	Appendix 11A (Preliminary CTMP) sets out the locations of all crossings of the TBC network and

Consultee	Consideration	How addressed in this PEIR
	would be undertaken using trenchless crossings. Agreement that issues related to any capacity assessments of TBC junctions could be addressed post Section 42 consultation. TBC may accept some junction specific assessments in appended technical notes and that a full TA was considered to be unnecessary. TBC agreed with the proposed methodology for traffic growth, traffic distribution, accident assessment (Crashmap), use of 2019 DfT traffic data to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment.	the how these are proposed to be trenchless crossings. No TA or capacity assessments have been presented in the PEIR assessments but there is a commitment to revisit the need for these with all strategic and local highways authorities post Section 42 consultation. The traffic growth methodology (Section 11.6), traffic distribution (Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with TBC as a basis for this preliminary assessment.
Halton Borough Council (HBC) - Traffic and Transport ES - Assessment – 17 June 2022	Scope of assessment was agreed. It is proposed that all crossings of the HBC major A road network would be undertaken using trenchless crossings. Agreement that issues related to any capacity assessments of HBC junctions could be addressed post Section 42 consultation. HBC may accept some junction specific assessments in appended technical notes and that a full TA was considered to be unnecessary. HBC agreed with the proposed methodology for traffic growth,	The scope of assessment (Section 11.8), HGV access strategy (Appendix 11A Preliminary CTMP) and proposed receptors (Section 11.10) were all agreed with HBC as a basis for this preliminary assessment. Appendix 11A (Preliminary CTMP) sets out the locations of all crossings of the HBC network and the how these are proposed to be trenchless crossings. No TA or capacity assessments have been presented in the PEIR assessments but there is a commitment to revisit the need for these with all strategic and local highways authorities post Section 42 consultation. The traffic growth methodology (Section 11.6), traffic distribution

Consultee	Consideration	How addressed in this PEIR
	traffic distribution, accident assessment (Crashmap), use of 2019 DfT traffic data to inform the baseline and the use of GEART to inform the traffic and transport environmental assessment.	(Section 11.10), accident assessment (Section 11.6) and baseline data from the DfT (Section 11.6) have been agreed with HBC as a basis for this preliminary assessment

Planned future engagement

- 11.3.5 It was agreed at the various technical meetings that were undertaken and set out in **Table 11.4** that further rounds of technical discussions for the assessment of the traffic and transport would be undertaken post Section 42 consultation to inform the ES and DCO submission.
- 11.3.6 Detailed discussions were proposed with St Helens Borough Council before the PEIR submission but a meeting was not arranged in time. It is acknowledged that detailed discussion with St Helens Borough Council will commence post Section 42 consultation.

11.4 Study Area

- 11.4.1 The Study Area for the traffic and transport assessment has been defined based on:
- Roads providing access for construction traffic generated by the Project;
 - Road, rail lines and navigable waterways crossed by the proposed pipeline corridor of the Project.
- 11.4.2 The Transport Study Area will be reviewed and amended, if required, as the Project is developing in response to the identification of any additional impact pathways, estimates of construction traffic levels, identification of working and laydown areas and in response to feedback from Section 42 and technical consultation.
- 11.4.3 The Study Area for the Project has taken into account the key roads that would be affected by predicted traffic associated with the construction of the Project, which is set out in further detail in **Section 11.10**.
- 11.4.4 The Study Area includes the following local highway authority areas:
- Cheshire West and Chester Council;
 - Cheshire East Council;
 - Trafford Council;
 - Halton Borough Council;
 - Warrington Borough Council; and

- St Helens Borough Council (SHBC).

11.4.5 The Study Area also includes access routes along the SRN.

11.4.6 The four corridors of the Preliminary Order Limits inform the Study Area. The various spurs from these corridors have also been included in the Study Area as follows:

- West Corridor (including Runcorn/Rocksavage Spur);
- North Corridor (including Warrington Spurs + Clock Face Spurs + St Helens Spurs);
- East Corridor (including Warburton Spur + Partington Spur); and
- South Corridor (including Northwich Spur).

11.4.7 It should be noted the Study Area is based on the PEIR maximum design scenario, which assumes the worst case for traffic generation considering the optionality included as part of the design, details of which are set out in **Section 11.8**.

West Corridor

11.4.8 The assessment area for the West Corridor has taken into account the key roads that would be affected by traffic associated with the Project on the West Corridor and the associated spurs. **Table 11.5** sets out the roads within the assessment area for the West Corridor.

Table 11.5 West Corridor Area of Assessment – traffic and transport

A5117 (A56 to Pool Lane)	A557 (A56 to Rocksavage Way)
M56	Hatley Lane/Matty's Lane
Pool Lane	Rocksavage Way
Ince Lane (A5117 to Ash Road)	Weaver View
A56 (A5117 to A533)	Cholmondeley Road
B5132 (Cryers Lane)	Aston Lane
A5117 (M56 to A56)	A553 (A56 to A49)
Marsh Lane	Lower Rake Lane
Ship Street	

11.4.9 A plan showing the area of assessment, identifying the links set out above, is provided as **Figure 11.1: Traffic and Transport Highways Links – West Corridor**. The assessment area has been agreed during discussions with National Highways, CWAC and HBC.

North Corridor

11.4.10 The assessment area for the North Corridor has taken into account the key roads that would be affected by traffic associated with the Project on the North Corridor and the associated spurs. **Table 11.6** sets out the roads within the assessment area for the North Corridor.

Table 11.6 North Corridor Area of Assessment – traffic and transport

Higher Lane/Grimsditch Lane	B5156 (Station Road)
Marsh Lane	A57 (M6 to A50)
M56	Barnard Street
A56 (M56 to Lower Walton)	Forrest Way
Newton Lane/Chester Road/Delph Lane	Mowcroft Lane
Summer Lane	A5080 (A557 to A562)
B5356 (A56 to Hatton)	A562 (Cuerdley Cross to Liverpool Road)
A49 (M56 to A533)	A557 (M62 to A5080)
Holly Hedge Lane	M62
Park Lane	Mill Lane
Warrington Road	Twyford Lane
Runcorn Road	A57 Warrington Road
Baronet Road	B5419
Eastford Road	A570 St Helens Linkway (M62 to St Helens Centre)
A5060 (A56 to Slutchers Lane)	School Lane
Gainsborough Road	Chapel Lane
Loushers Lane	Lea Green Road
Wash Lane	Eurolink
A5061 (Knutsford Road)	B5204 (Elton Head Road)
Liverpool Road/Old Liverpool Road	Sherdley Road
Thelwell Lane	Sutton Heath Road
A50 (B5156 to A57)	Burtonhead Road

11.4.11 A plan showing the area of assessment, identifying the links set out above, is provided as **Figure 11.2 Traffic and Transport Highways Links – North Corridor**. The assessment area has been agreed during discussions with National Highways, CWCC, HBC, WBC and SHBC.

East Corridor

11.4.12 The assessment area for the East Corridor has taken into account the key roads that would be affected by traffic associated with the Project on the East Corridor and the associated spurs. **Table 11.7** sets out the roads within the area of assessment for the East Corridor.

Table 11.7 East Corridor Scope of Assessment – traffic and transport

A49 (M56 to A533)	Mowpen Brow
Marsh Lane	M56
A559 (Northwich Road)	A56 (M56 to B5160)
Lake Lane	A556 (M6 to M56)
Old Mill Lane/Norman's Lane	A56 (M56 to Broomedge)
Knutsford Road	Agden Lane
B5356 (M6 to Appleton Thorn)	Agden Park Lane
M6	Froghall Lane
Arelly Road/New Road	B5159/B5169 (Broomedge to Stage Lane)
Barbers Lane	Bradshaw Lane
Pools Platt Lane	Spring Lane
Cadwells Gate Lane	B5160 Woodhouse Lane (A56 to A6114)
A50 (M6 to High Legh)	Carrgreen Lane
Swineyard Lane	Barns Lane
Moss Brow Lane	Sawpit Street
Moss Lane	A6114 (M60 to B5160)
B5159 West Lane	Moss Lane/Covershaw Lane/Sinderland Lane
	M60

11.4.13 A plan showing the area of assessment, identifying the links set out above, is provided as **Figure 11.3: Traffic and Transport Highways Links – East Corridor**. The assessment area has been agreed during discussions with National Highways, CEC and TBC.

South Corridor

- 11.4.14 The area of assessment for the South Corridor has taken into account the key roads that would be affected by traffic associated with the Project on the South Corridor and the associated Spurs. **Table 11.8** sets out the roads within the area of assessment for the South Corridor.

Table 11.8 South Corridor Scope of Assessment – traffic and transport

A49 (A533 to Millington Lane)	London Road
B5142 (Sandy Lane)	A530
Station Road	Whatcroft Hall Lane
Hefferston Rise	M6
Acton Lane	A533 (A49 to Winnington Avenue)
Millington Lane	Broomsfield Lane
Weaverham Road	Hough Lane
A666 (A49 to M6)	Marbury Road/Scoot Hill/New Road
A559 (A556 to Whitegate Lane)	Uplands Road
Whitegate Lane	Copgshall Lane
Hartford Road	Stone Hayes Lane
Eaton Lane	Shutley Lane
A533 (A556 to A5018)	Ash House Lane
A5018 (A533 to London Road)	A533 (Winnington Lane)
Jack Lane	

- 11.4.15 A plan showing the area of assessment, identifying the links set out above, is provided as **Figure 11.4: Traffic and Transport Highways Links – South Corridor**. The assessment area has been agreed during discussions with National Highways and CWAC.

Wider Strategic Highways Network

- 11.4.16 As set out in **Table 11.5** to **Table 11.8** above, there are a number of elements of the SRN operated and maintained by National Highways that form part of the scope of assessment. The SRN will form the location from which all vehicles to and from the construction sites will route from and as such form the assessment of the four corridors (and associated spurs). The SRN will be affected by construction

traffic. The following elements of the SRN have been agreed as scoped in for assessment with National Highways and are shown in **Figure 11.5: SRN Study Area**:

- M56 (Between Junction 15 and 1);
- M6 (Between Junction 18 and 22);
- M62 (Between Junction 7 and 12);
- M60 (Between Junction 12 and 2); and
- A556 (Between M6 and M56).

11.5 Data gathering methodology

- 11.5.1 Baseline data collection has been undertaken to obtain information over the Study Area described in **Section 11.4**. The description of the baseline conditions presented in **Section 11.6** is based on currently available data from within the Study Area.
- 11.5.2 The methodology for baseline data gathering including the desk study and site surveys is set out below.

Desk study

- 11.5.3 The desk study included a review of the highway network, public transport, and accident data within the scope of assessment for the Project for all the Study Areas.
- 11.5.4 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 11.9**.

Table 11.9 Data sources used to inform the traffic and transport assessment

Organisation	Data source	Data provided
Ordnance Survey (OS) Mapping	https://www.bing.com/maps - Bing maps allows access online to Ordnance Survey Mapping	1:50,000 and 1:25,000 Ordnance Survey Mapping of the entire Study Area.
Google Traffic	https://www.google.co.uk/maps	Data on congestion on local roads and junctions within the entire Study Area.
Crashmap	https://www.crashmap.co.uk	Accident data for the entire Study Area.
Google Street View	https://www.google.co.uk/maps	Street view imagery of the local highways network.
PRoW Information	CWCC	PRoW information from the definitive CWCC map.

Organisation	Data source	Data provided
	CEC	PRoW information from the definitive ECC map.
	TBC	PRoW information from the definitive TC map.
	HBC	PRoW information from the definitive HBC map.
	WBC	PRoW information from the definitive WBC map.
	SHBC	PRoW information from the definitive SHBC map.
Traffic Data	https://roadtraffic.dft.gov.uk	Historic data from at the DfT permanent count locations at identified Highway Links.
Bus Service information	https://www.warrington.gov.uk/buses	Details of bus routes and operators in Warrington.
	https://www.cheshirewestandchester.gov.uk/residents/transport-and-roads/public-transport/bus-timetables-route-maps/bus-service-timetables	Details of bus routes and operators in Cheshire West and Chester.
	https://www.cheshireeast.gov.uk/public_transport/bus_service_timetables.aspx	Details of bus routes and operators in Cheshire East.
	https://www.merseytravel.gov.uk/timetables/#bus	Details of bus routes and operators in the Merseytravel area.
	https://tfgm.com/public-transport/bus/routes	Details of bus routes and operators in the Transport for Greater Manchester area.
	https://data.bus-data.dft.gov.uk/timetable/	Bus Open Data Service – details of bus routes through the Study Area.
	https://www.arrivabus.co.uk/find-a-service	Details of Arriva bus service route information through the Study Area.
	https://www.stagecoachbus.com/timetables	Details of Stagecoach bus service route information through the Study Area.

Organisation	Data source	Data provided
	https://www.warringtonsownbuses.co.uk/services	Details of Warrington's Own Buses bus service route information through the Study Area.
National Cycle Network (NCN) Information	https://www.sustrans.org.uk/national-cycle-network	Details of NCN through the Study Area.
DfT (2021) – Table TRA2501c	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940319/tra2501.ods	Road traffic statistics to inform HGV traffic growth assumptions.
DfT – TEMPro	Traffic growth factors based on local planning data and the National Traffic Model.	Traffic growth rates for the Study Area.
Network Rail	https://www.nationalrail.co.uk/stations_destinations/rail-maps.aspx	Details of active rail lines in the Study Area.
HS2 Route and Plans	https://www.hs2.org.uk/what-is-hs2/phase-2b-crewe-to-manchester/	Details of proposals in the area from the HS2 Phase 2b proposed route.
Canal And River Trust	https://canalrivertrust.org.uk/	Details of Navigable Waterways in the Study Area.

Survey work

Site Assessment

- 11.5.5 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 10 and 11 March 2022. The site survey included detailed notes and photographs recorded on a Global Positioning System (GPS) linked on-site system (collector app). **Table 11.10** below sets out details of this site survey.

Table 11.10 Site survey undertaken for transport

Survey type	Scope of survey	Coverage of Study Area
Site Survey	The scope of the site survey undertaken for transport in the Study Area included: • All roads and junctions that are part of the Study Area; • All proposed site access locations (major); • The PRow affected by the project; • Observations of traffic conditions on the highways network; • Visit to the proposed Central Hub HAGI location; • Observations were made of key sensitive locations; and • Confirmation of suitability of roads for HGV traffic and confirmation of desk-based height and width restrictions.	Proposed Construction traffic routes into the Study Area

Baseline Traffic Data

11.5.6 Traffic data has been derived from the online DfT traffic statistics for most of the Study Area. Eight locations were identified as lacking traffic data and to address this, Automatic Traffic Counts (ATCs) were undertaken between 21 June 2022 and 28 of June 2022 by traffic survey company TSL. The ATCs recorded vehicle numbers by type and by direction as well as speed of vehicles. The counts were undertaken in the following locations:

- ATC (Site 1) – A56 (Bridge Lane) – Frodsham;
- ATC (Site 2) – Higher Lane - Between A533 and A49;
- ATC (Site 3) – A533 (Runcorn Road) - Barnton;
- ATC (Site 4) – B5160 (Station Road) – Dunham Massey;
- ATC (Site 5) – B5204 (Elton Head Road) - Between A570 and Rainhill Road;
- ATC (Site 6) – A5117 - Between M56 and B5132;
- ATC (Site 7) - Runcorn Road - Between A56 and Moore;
- ATC (Site 8) – Liverpool Road – Sankey Bridge.

11.5.7 **Figure 11.6: Baseline Traffic Surveys** sets out the locations of the above baseline traffic surveys.

Data limitations

11.5.8 The COVID-19 pandemic restrictions had a significant effect on traffic volumes on roads during 2020 and early 2021. Latest DfT (2020) road traffic statistics indicate

that in 2020 UK roads saw a reduction of 6% in HGVs and 12% for Light Vehicles (LVs). Since late 2021, highway authorities began accepting traffic counts.

11.5.9 The agreed approach for PEIR is to use the online DfT traffic data, supplemented with traffic counts where there are gaps in data availability. It has been agreed with the highway authorities that the 2019 DfT data sets should be used as representative of normal conditions pre-COVID-19.

11.5.10 It has been agreed with the highway authorities that where DfT data is older than 2018, traffic counts will be undertaken for the DCO submission assessment work.

11.5.11 The approaches above have been discussed with the various local highway authorities, and PINS (2020) Advice Note Seven has set out that:

“The Inspectorate considers that Applicants should make effort to agree their approach to the collection and presentation of information with relevant consultation bodies. In turn the Inspectorate expects that consultation bodies will work with Applicants to find suitable approaches and points of reference to aid the robust preparation of applications at this time.”²³

11.6 Overall Baseline

11.6.1 This section provides a description of the baseline conditions of the local and strategic roads which are proposed to be used for access to the Project as well cycle routes, sustainable travel routes and a preliminary accident assessment. **Figures 11.1 to 11.5** illustrate the roads that have been included in this section.

Highways Network Review

11.6.2 Due to the wide scope of assessment for the Project the descriptions of the highways network (both local and SRN) have been included as a separate appendix, **Appendix 11C**.

Bus Network

11.6.3 Bus services are in operation in the Study Area. This section summarises the public bus services that cross each of the four corridors of the Preliminary Order Limits.

11.6.4 The majority of bus service and corridor interactions roads, listed below, are A or B class roads. There are also some minor urban and rural roads.

²³ The Planning Inspectorate (2020). Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping (version 7). (online) Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/#2> (Accessed August 2022).

West Corridor Bus Network

- A56: X30.

North Corridor Bus Network

- A49: 5A, CAT5; 62, 12, 11, 9A, CAT 9, CAT 6, CAT 8, CAT 7, C51;
- B5204: 156, C39, 289, 33, 920;
- Lea Green Road: 920;
- Loushers Lane and/or Gainsborough Road and/or Wash Lane: 12, 11;
- B5419: C40, 17, 61;
- A5060: X30, 12, 11;
- Sherdley Road: 33;
- Sutton Heath Road: 33, 920;
- A56: X30;
- Runcorn Road: 62, X43, C51;
- A562: 110, 32;
- A50: 47;
- A57: C49, 39A; and
- Burtonhead Road: 12.

East Corridor Bus Network

- Sinderland Lane: 5A, 247;
- A6144: 247, 253, 255, 280;
- B5160: CAT5, 280;
- B5159: 47;
- A49: 9A; and
- Knutsford Road (near Antrobus): 9A.

South Corridor Bus Network

- A533: X31;
- A49: 48A, 9A;
- B5153: 9A;
- Marbury Road: 9A; and
- A556: 82.

- 11.6.5 It is proposed that for the Project all the routes used by local bus services would remain open for the duration of the work and traffic management would be put in place to allow for the continued use of the route for sustainable modes. Some short localised delays may be incurred by bus services on roads during the road crossings but major diversions can be avoided.
- 11.6.6 Many of the routes are also along the major A roads (A50, A57, A49, A533, A566, A56 and A6144), which are proposed to be crossed by trenchless technology and as such would not be subject to any effects from proposed traffic management.
- 11.6.7 Based on the likely low impacts on bus services, as a result of the Project, the impacts on local public transport routes are not considered further in this assessment.

Public Rights of Way

- 11.6.8 The proposed access points for the Project (temporary and permanent) would potentially affect a number of PRowWs in the area including a number of key walking trails as follows:
- The North Cheshire Way;
 - Delamere Way;
 - Cheshire Ring Canal Walk;
 - Mersey Valley Trail; and
 - Trans Pennine Trail.
- 11.6.9 **Figure 11.7: PRowWs Affected by the Project** sets out the locations of the PRowWs in relation to the Preliminary Order Limits. To understand the effects of the Project a Preliminary PRowWMP has been developed and is provided in **Appendix 11B**.
- 11.6.10 The Preliminary PRowWMP has set out in detail each PRowW and area of Open Access Land (OAL) that is currently affected within the Preliminary Order Limits. This includes details on the PRowW number, type of effect and whether the effect is likely to be temporary or permanent.

National and Local Cycle Routes

- 11.6.11 The Preliminary Order Limits currently cross the following elements of the Sustrans NCN:
- NCN 5 – Across several sections:
 - ▶ On carriageway section along A5117 at Elton Green crossed by the West corridor;
 - ▶ On-carriageway section on Station Road at Ince crossed by a proposed haul road;
 - ▶ Off road route crossed by haul road east of Ince;

- ▶ Section of off-carriageway route that follows a tracks known as Marsh Lane, Lordship Lane and Moorditch Lane, north of the M56 which are proposed to be used as construction haul roads and also crossed by West Corridor;
- ▶ Section of off-carriageway route north of Ship Street, Frodsham proposed to be used as an access route for the Project;
- ▶ On-carriageway section along A56 (Sutton Causeway/Weaver Bridge/Chester Road) east of Frodsham crossed by the West Corridor;
- ▶ On-carriageway section on Aston Lane crossed by the West Corridor;
- ▶ Off-carriageway section on an informal track south east of Aston crossed by the West Corridor;
- ▶ Off-carriageway section on an informal track along Longacre Brook crossed by the South Corridor;
- ▶ Off-carriageway section on an informal track alongside the River Weaver southwest of Bartington crossed by the South Corridor;
- ▶ Off-carriageway section on an informal track that leads from Eaton Lane west of Davenham proposed to be used as a construction access track;
- ▶ Off-carriageway section on an informal track that leads from Eaton Hall Farm to the south west of Moulton proposed to be used as a construction access track;
- ▶ Off-carriageway section on an informal track alongside the River Weaver east of Meadow Bank crossed by the South Corridor;
- NCN71 – On-carriageway section along Bradford Road north of Winsford crossed by the proposed South Corridor;
- NCN62 – Across several sections:
 - ▶ Section along former rail line at Dunham Massey proposed to be crossed by the East Corridor;
 - ▶ On-carriageway section along Thelwall Lane, Warrington proposed to be used as a location to install underground pipeline in the carriageway;
 - ▶ On-carriageway section along Clearwater Quays, Warrington proposed to be used as a location to install underground pipeline in the under the carriageway;
 - ▶ Section of informal track along the River Mersey under rail bridges (also known as Eastford Road) which is also proposed to be used as a route for the underground pipeline;
 - ▶ Short section of informal road west of Forrest Way, Warrington proposed to be used as a construction access route;
 - ▶ Section along former rail line west of Warrington and south of Cuerdley, Warrington to be crossed by the North Corridor; and

- NCN562 – A section of on carriageway cycle route along Aston Road proposed to be crossed by the West Corridor.

11.6.12 It is proposed that all the routes used by NCN routes would remain open for the duration of the Project construction and operation phases and traffic management would be put in place to allow for the continued use of the routes for sustainable modes. This will be managed with signage, active management or traffic signal control.

11.6.13 NCN5 also has routes along the major A roads (A5117, A56), which are proposed to be crossed by trenchless technology and as such would not be subject to any effects from proposed traffic management.

11.6.14 Based on the likely low impacts on national cycle routes as a result of the Project the impacts on local public transport routes are not taken forward into this chapter's assessments. A detailed narrative of the impacts on the NCN and potential mitigation is set out in the Preliminary CTMP.

National Rail Network

11.6.15 All rail crossings are proposed to be managed through trenchless crossings during the construction works, which should allow for the continued use of the rail lines during these periods.

11.6.16 The Preliminary Order Limits include crossings of the rail network at 16 locations, taking into account design optionality. The 16 locations are shown in **Figure 11.8: National Rail Network Crossing Points**. There are also interactions where the Project crosses the proposed route of the HS2 route Phase 2B (Crewe to Manchester), which has been included for completeness (two locations).

11.6.17 Engagement with Network Rail will take place to discuss the proposed crossings of the rail network.

11.6.18 **Table 11.11** sets out the details of the various crossings of the existing rail network and the proposed HS2 line.

Table 11.11 Proposed Rail Crossings and Management

Crossing Point	Corridor	Rail Line Between	Management
R1	West	Ellesmere Port and Frodsham	Trenchless Crossing
R2	West	Frodsham and Runcorn/Warrington	Trenchless Crossing
R3	West	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R4	South	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R5	South	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R6	South	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R7	South	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R8	South	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossing
R9	South	Northwich to Middlewich	Trenchless Crossing
R10	South	Northwich to Chester	Trenchless Crossings
R11	North	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossings
R12	North	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossings
R13	North	Warrington/Runcorn and Winsford – West Coast Mainline	Trenchless Crossings
R14	North	Warrington to Widnes	Trenchless Crossings
R15	North	Warrington to Liverpool	Trenchless Crossings
R16	North	Manchester to Liverpool	Trenchless Crossings
R17	East	HS2	Management to be discussed with relevant stakeholders

Crossing Point	Corridor	Rail Line Between	Management
R18	South	HS2	Management to be discussed with relevant stakeholders

11.6.19 As additional management measures other than the use of trenchless crossings are not considered necessary to avoid impacts on the rail network, effects on this receptor are not considered further in this assessment.

Navigable Waterways

11.6.20 All navigable watercourse crossings are all proposed to be managed through trenchless crossings, which should allow for the continued use of the navigable watercourse during these periods.

11.6.21 The Preliminary Order Limits include crossings of navigable waterways at 19 locations, taking into account design optionality. The 19 locations are shown in **Figure 11.9: Navigable Waterway Crossings**.

11.6.22 Consultation and engagement with the Canals and River Trust and Peel Holdings/Group will take place to discuss the requirements of the Project up to and beyond DCO application submission.

11.6.23 **Table 11.12** provides details on the crossings of Navigable Waterways.

Table 11.12 Management of Navigable Waterways

Crossing Point	Corridor	Name of Navigable Waterway	Management
NW1	West	Weaver Navigation – Canal and River Trust	Trenchless Crossing
NW2	West	Weaver Navigation – Canal and River Trust	Trenchless Crossing
NW3	West	Weaver Navigation – Canal and River Trust	Trenchless Crossing
NW4	West	Weaver Navigation – Canal and River Trust	Trenchless Crossing
NW5	West	Trent and Mersey Canal – Canal and River Trust	Trenchless Crossing
NW6	South	Trent and Mersey Canal – Canal and River Trust	Trenchless Crossing

Crossing Point	Corridor	Name of Navigable Waterway	Management
NW7	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW8	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW9	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW10	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW11	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW12	South	Trent and Mersey Canal – Canal and River Trust	Trenchless Crossing
NW13	North	Bridgewater Canal – Peel Group	Trenchless Crossing
NW14	North	Bridgewater Canal – Peel Group	Trenchless Crossing
NW15	North	Manchester Ship Canal – Peel Holdings	Trenchless Crossing
NW16	North	Manchester Ship Canal – Peel Holdings	Trenchless Crossing
NW17	East	Bridgewater Canal – Peel Group	Trenchless Crossing
NW18	South	River Weaver – Canal and River Trust	Trenchless Crossing
NW19	South	Trent and Mersey Canal – Canal and River Trust	Trenchless Crossing

11.6.24 As additional management measures other than the use of trenchless crossing are not considered necessary to avoid impacts on navigable waterways, effects on this receptor are not considered further in this assessment.

Baseline Traffic Data

11.6.25 The historic data from the online DfT traffic statistics has been growthed using factors derived from TEMPro – the DfT's Trip End Model Presentation Program which uses the National Trip End Model (NTEM). Growth rates for light vehicles have been derived from the latest version - TEMPro 7.2, and growth rates for

HGVs have been based on the DfT National Traffic Statistics. The current year of 2022 has been used as year to growth historic counts to establish a baseline.

12.1.1

Growth rates from TEMPro have been based on five areas due to the size of the Study Area. **Figure 11.10: TEMPro Geographic Areas** sets out the five locations used for TEMPro growth rates. The following growth rates have been derived from TEMPro.

- 2019 – 2022 – Total Vehicles:
 - ▶ Coastal Industrial 1.0307;
 - ▶ Rural Cheshire – 1.0307;
 - ▶ Manchester Fringe – 1.0342
 - ▶ Warrington – 1.0306; and
 - ▶ St Helens – 1.0364.

11.6.26

HGV growth has been based on the DfT (2021) publication 'TRA2501c - Road traffic (vehicle miles) by vehicle type in Great Britain' which provides national data of the annual change in vehicle traffic for total vehicles, car, light commercial vehicles and HGVs.

11.6.27

Based on Table TRA2501c, annual growth factors for HGVs have been derived as follows:

- the changes in HGV traffic flows between 2019 (last reliable year of data due to the COVID-19 pandemic) and the base year of 2022 have been calculated;
- the growth factor from 2018 to 2019 was 0.38%;
- estimated growth between 2019 and 2022 is assumed as 0.38% per annum, or 1.125% over the three years;
- the growth for 2019 – 2021 (1.125% has been added to the growth from the historic count year to 2019 to provide for a growth from historic count year to 2021); and
- The resultant growth rate is 1.0125 for all HGVs between 2019 and 2022.

11.6.28

Table 11.13 to **Table 11.17** set out the historic traffic data, resultant 2022 base year and also the result of the new traffic surveys for highways links from 2022.

Table 11.13 2022 Baseline Traffic Data (AADT) – West Corridor

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RW1 – A5117	13,448	313	2019	13,861	317	2.3%
RW2 - A557	12,058	325	2019	12,428	329	2.6%
RW3 - A56	19,119	224	2019	19,706	227	1.2%
RW4 - A533	7,810	333	2019	8,050	337	4.2%
RW5 - A533	7,844	421	2019	8,085	426	5.3%
RW6 - A56	11,399	161	2019	11,749	163	1.4%
RW7 - A557	45,517	457	2019	46,915	463	1.0%
RW8 - A557	32,539	3,799	2019	33,538	3846	11.5%
RW9 - A56	5,301	103	2019	5,464	104	1.9%
RW10 - A56	New Traffic Surveys			18,642	435	2.3%
RW11- A5117	New Traffic Surveys			10,869	1136	10.5%

Table 11.14 2022 Baseline Traffic Data (AADT) – North Corridor

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RN1 - A56	26,750	1,849	2019	27,572	1872	6.8%
RN2 - A56	26,998	474	2019	27,824	480	1.7%
RN3 - A57	15,401	498	2019	15,872	504	3.2%
RN4 - A50	22,746	2,624	2019	23,442	2657	11.3%
RN5 - A562	18,916	656	2019	19,495	664	3.4%
RN6 - A562	12,003	374	2019	12,370	379	3.1%
RN7 - A5080	5,194	552	2019	5,353	559	10.4%
RN8 - A557	22,512	2,347	2019	23,331	2376	10.2%

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RN9 - A57	13,152	441	2019	13,630	447	3.3%
RN10 - A570	25,236	1,174	2019	26,154	1189	4.5%
RN11 - A570	24,979	1,136	2019	25,888	1150	4.4%
RN12 - A570	30,146	908	2019	31,243	919	2.9%
RN13 – Higher Lane	New Traffic Surveys			566	30	5.3%
RN14 - B5204	New Traffic Surveys			11,583	252	2.2%
RN15 – Runcorn Road	New Traffic Surveys			2,748	212	7.7%
RN16 – Liverpool Road	New Traffic Surveys			8,231	421	5.1%

Table 11.15 2022 Baseline Traffic Data (AADT) – East Corridor

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RE1 - A49	13,710	1,138	2019	14,131	1152	8.2%
RE2 - A559	7,852	285	2019	8,093	289	3.6%
RE3 -A49	13,710	1,138	2019	14,131	1152	8.2%
RE4 – Arley Road	1,251	27	2019	1,289	27	2.1%
RE5 - A50	8,130	255	2019	8,380	258	3.1%
RE6 - A56	15,204	598	2019	15,724	605	3.8%
RE7 - A56	9,898	206	2019	10,237	209	2.0%
RE8 - A6144	14,350	1,050	2019	14,841	1063	7.2%
RE9 – Woodhouse Lane	New Traffic Surveys			3,329	112	3.4%
RE10 - A6114	12,765	154	2019	13,202	156	1.2%

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RE11 - A6144	7,062	125	2019	7,304	127	1.7%

Table 11.16 2022 Baseline Traffic Data (AADT) – South Corridor

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
RS1 - A49	17,677	1,055	2019	18220	1068	5.9%
RS2 - A49	12,780	1,043	2019	13,173	1,056	8.0%
RS3 - B5153	3,664	66	2019	3,777	67	1.8%
RS4 - A556	17,402	726	2019	17,937	735	4.1%
RS5 - A533	21,735	1,124	2019	22,403	1,138	5.1%
RS6 - A530	14,485	661	2019	14,930	669	4.5%
RS7 - A556	29,103	1,968	2019	29,997	1,993	6.6%
RS8 - A533	7,846	297	2019	8,087	301	3.7%
RS9 – Marbury Road	4,092	70	2019	4,218	71	1.7%
RS10 - A533	New Traffic Surveys			8,956	378	4.2%

Table 11.17 2022 Baseline Traffic Data (AADT) – Strategic Road Network

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
SRNR1 - M56	113,408	11,940	2019	116,992	12,089	10.3%
SRNR2 - M62	105,237	12,780	2019	108,562	12,940	11.9%
SRNR3 - M6	135,278	14,177	2019	139,553	14,354	10.3%
SRNR4 - M56	87,582	4,795	2019	90,350	4,855	5.4%

Highways Link	Historic Traffic Data			2022 Base		
	Total Vehicles	HGVs	Year of Data	Total Vehicles	HGVs	HGV%
SRNR5 - M60	105,623	7,100	2019	108,961	7,189	6.6%
SRNR6 - M60	137,785	6,565	2019	142,139	6,647	4.7%
SRNR7 - M62	129,948	14,860	2019	134,054	15,046	11.2%
SRNR8 - M56	138,257	9,197	2019	142,626	9,312	6.5%
SRNR9 - M6	100,557	19,241	2019	103,735	19,482	18.8%
SRNR10 - A556	48,801	3,868	2019	50,343	3916	7.8%
SRNR11 - M6	115,458	17,951	2019	119,106	18175	15.3%
SRNR12 -M56	117,996	13,431	2019	121,725	13599	11.2%

High Level Accident Review

- 11.6.29 Personal Injury Accident (PIA) data has been obtained from CrashMap Pro (2022)²¹ for the last five year period of validated data in the database, which runs from January 2016 to December 2020. The extent of the Accident Study Area is illustrated in **Figure 11.11: Accident Assessment Areas**.
- 11.6.30 The purpose of assessing recorded PIAs is to determine whether there is a history of accidents on construction traffic routes within Study Area and to investigate whether there are any patterns or contributing factors to the accidents recorded.
- 11.6.31 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).
- 11.6.32 The impact of the 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 having 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.
- 11.6.33 The assessment of accidents has been split between the four corridors. No assessment has been undertaken for the SRN due to the high traffic flows on these routes and established accident safety features, such as central reservations and hard shoulders.

- 11.6.34 It should be noted in the tables in the following sections that there are several highway links assessed for which no baseline traffic data is available. The results of the 5 year accident record have been still been presented as these, where relevant, feed into the detailed environmental link assessments in **Section 11.10**.

Recorded Accidents

West Corridor

- 11.6.35 A total of 102 accidents were recorded over the five year period on highways links associated with the West Corridor between January 2016 to December 2020. Three of these accidents were recorded as fatal, 17 as serious and 82 as slight. Links that did not record any accidents have not been included in the assessment below.
- 11.6.36 **Table 11.18** provides a summary of the accidents and details of the accident rate per million vehicle kilometre, which is a means of assessing the number of accidents against national statistics. Estimated annual flows have been calculated by using the base year for traffic for 24 hours multiplied by 365 days of the year.

Table 11.18 PIA Data Summary – West Corridor

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A5117 Between Pool Lane and M56 J14	2	0	1	3	0.6	1.33	4,075,950	0.11
A56 between A5117 and B5393	23	4	1	28	5.6	4.53	4,405,895	0.28
A56 between B5349 and A557	25	4	1	30	6	3.44	7,389,798	0.24
Ship Street between A56 and Waterside Drive	0	1	0	1	0.2	1.02	N/A	N/A
A56 between A557 and A533	9	4	0	13	2.6	2.21	2,048,921	0.57

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A557 between A56 and M56J12	2	0	0	2	0.4	0.66	4,521,750	0.13
A557 between M62 J12 and West Point Express Way	4	0	0	4	0.8	0.88	17,068,875	0.05
A557 between Weston Link and Rocksavage Way	6	1	0	7	1.4	1.355	12,202,125	0.08
Rocksavage Way between A557 and Clifton Road	2	0	0	2	0.4	1.227	N/A	N/A
A533 between A56 and A49	9	3	0	12	2.4	6.181	2,941,500	0.13

11.6.37 From the DfT (2019), reported road casualties for Great Britain 2019 presented in RAS10002 table, 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.

11.6.38 A comparison of the links above and the accident rate per million vehicle km for the links in **Table 11.18** and the national accident rate sets indicates that only two links have an annual accident rate higher than the national average as follows:

- A56 between the A557 and A533 – 0.57 compared to 0.11 for a rural A Road and 0.42 for an urban A Road; and
- A533 between the A56 and A49 – 0.13 compared to a 0.11 for a rural A Road.

11.6.39 It should be noted that for the A533 between the A56 and A49 the rate is only 0.02 higher than the national average, which would not be perceptively different and with daily variations would be around the national average.

- 11.6.40 The A56 between the A557 and A533 is a route that is partially a rural A road and partially an urban A road (though Sutton Weaver). The results on this link are distorted by a cluster of eight accidents at the junction of Chester Road and Halton Station Road. These are related to the junction and the turning movements there rather than as a function of the design of the link.

North Corridor

- 11.6.41 A total of 209 accidents were recorded over the five year period on highways links associated with the North Corridor between January 2016 to December 2020. Four of these accidents were recorded as fatal, 40 as serious and 165 as slight. Links that did not record any accidents have not been included in the assessment below.
- 11.6.42 **Table 11.19** provides a summary of the accidents and details of the accident rate per million vehicle kilometre which is a means of assessing the number of accidents against national statistics.

Table 11.19 PIA Data Summary – North Corridor

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A570 between B5204 and M62 J7	1	2	1	4	0.8	2.8	9,546,250	0.03
A570 between B5204 and Stadium Access Road	19	5	0	24	4.8	2.1	9,449,033	0.24
Burtonhead Road between A570 and Rail Bridge	2	2	0	4	0.8	0.82	N/A	N/A
Sherdley Road between Sutton Heath Road and B5204	3	0	0	3	0.6	1.16	N/A	N/A
B5204 between Stratton Drive and A570	1	0	0	1	0.2	1.22	4,227,941	0.04

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
Lea Green Road between Eurolink and Chapel Lane	1	0	0	1	0.2	0.21	N/A	N/A
A562 between Powerstation Access and A5080	3	0	0	3	0.6	1.27	4,515,195	0.10
A562 between A5080 and Liverpool Road	7	4	1	12	2.4	1.9	7,115,674	0.18
Liverpool Road between A562 and Barnard Street	4	1	0	5	1	1.18	3,004,315	0.28
Forrest Way between Barnard Street and entrance to Moore Nature Reserve	1	0	1	2	0.4	0.68	N/A	N/A
A57 between M62 J7 and Tibbs Cross Lane	7	1	0	8	1.6	1.25	4,975,,126	0.26
B5149 between A57 and Bell Lane	2	0	0	2	0.4	1.13	N/A	N/A
A557 between M62 J7 and A5080	6	0	0	6	1.2	2.99	8,515,818	0.05
A5080 between A557 and A562	4	2	0	6	1.2	3.2	1,953,839	0.19

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
B5356 between A56 and Hatton	1	0	0	1	0.2	1.6	N/A	N/A
A56 between M56 J11 and Slutchers Lane	20	8	1	29	5.8	5.65	10,063,750	0.10
Park Lane between A56 and Warrington Road	1	0	0	1	0.2	0.27	N/A	N/A
Warrington Road between A56 and Hatton	0	1	0	1	0.2	1.29	N/A	N/A
Gainsborough Road/Lousers Lane/ Wash Road between A5060 and Station Road	4	3	0	7	1.4	1.98	N/A	N/A
Wash Lane between B5156 and A5061	2	1	0	3	0.6	0.24	N/A	N/A
A5061 between Wash Lane and A50	9	1	0	10	2	0.649	N/A	N/A
Thelwall Lane Between A50 and End of Highway	1	0	0	1	0.2	1.08	N/A	N/A
B5156 between Wash Lane and A50	1	1	0	2	0.4	0.73	N/A	N/A

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A50 between B5156 and A57	32	3	0	35	7	2.03	8,556,413	0.40
A57 between A50 and M6	33	5	0	38	7.6	3.675	4,975,126	0.42

11.6.43 A comparison of the links above and the accident rate per million vehicle km for the links in **Table 11.19** and the national accident rate sets out that only two links have an annual accident rate higher than the national average as follows:

- A57 between the M62 J7 and Tibbs Cross Lane– 0.26 compared to 0.11 for a rural A Road; and
- A5080 between the A557 and A562– 0.19 compared to a 0.11 for a rural A Road.

11.6.44 It should be noted that for the A5080 between the A557 and A562 the rate is only 0.07 higher than the national average, which would not be perceptively different and with daily variations would be around the national average.

11.6.45 The A57 between the M62 J7 and Tibbs Cross Lane is a rural A road. The results on this link are distributed along the link with no discernible patterns at junctions which distort the results. This proposed route could be considered to have an existing link-based accident record of note.

East Corridor

11.6.46 A total of 94 accidents were recorded over the five-year period on highways links associated with the East Corridor between January 2016 to December 2020. Nine of these accidents were recorded as fatal, 18 as serious and 67 as slight. Links that did not record any accidents have not been included in the assessment below.

11.6.47 **Table 11.20** provides a summary of the accidents and details of the accident rate per million vehicle kilometre, which is a means of assessing the number of accidents against national statistics.

Table 11.20 PIA Data Summary – East Corridor

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A559 between M56 J10 and Knutsford	5	1	2	8	1.6	2	2,954,040	0.22

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
Road/Lake Lane								
Arley Road/New Road between B5356 and Caldwell's Gate Lane	1	1	0	2	0.4	4.07	470,645	0.21
Barber's Lane between Arley Road and the end of access	1	0	0	1	0.2	1.11	N/A	N/A
B5356 between B5356/A50 and Arley Road	9	3	0	12	2.4	2.52	N/A	N/A
A50 between M6 J20 and High Legh	3	0	1	4	0.8	3.75	3,058,628	0.07
Swineyard Lane Between A50 and Moss Brow Lane	2	2	0	4	0.8	1.17	N/A	N/A
Moss Lane between end of access route E and end of access route W	1	0	0	1	0.2	2.31	N/A	N/A
B5159 between A50 and M56 crossing	4	0	0	4	0.8	1.47	N/A	N/A
A56 between J7 M56 and B5159	8	2	0	10	2	4.294	3,736,409	0.12

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
B5159 between A56 and Bradshaw Lane	2	0	0	2	0.4	1.53	N/A	N/A
A56 between B5160 and J7 M56	1	2	0	3	0.6	1.3	5,739,377	0.08
B5160 between A56 and Carrgreen Lane	2	0	3	5	1	4.04	1,215,158	0.20
Moss Lane and Colvershaw Lane between A6144 and Sinderland Lane	5	0	1	6	1.2	1.99	1,171,650	0.51
A6144 between Moss Lane and B5160	7	1	2	10	2	2.56	2,665,843	0.29
A6144 between Moss Lane and B5158	5	3	0	8	1.6	3.64	4,818,676	0.09
A6144 Carrington Lane between B5158 and Carrington Spur	9	3	0	12	2.4	1.94	5,283,430	0.23
A6144 Carrington Spur between Banky Lane and J8 M60	2	0	0	2	0.4	1.84	5,283,430	0.04

- 11.6.48 A comparison of the links above and the accident rate per million vehicle km for the links in **Table 11.20** and the national accident rate sets out that 5 links have an annual accident rate higher than the national average as follows:
- A559 between the M56 J10 and Knutsford Road/Lake Lane – 0.22 compared to 0.11 for a rural A Road;
 - Arley Road/New Road between the B5356 and Caldwell's Gate Lane – 0.21 compared to 0.19 for a rural other road;
 - A56 between J7 M56 and B5159 – 0.12 compared to 0.11 for a rural A road;
 - B5160 between the A56 and Carrgreen Lane 0.20 compared to 0.19 for a rural other road; and
 - Moss Lane and Colvershaw Lane between the A6144 and Sinderland Lane – 0.51 compared to 0.19 for a rural other road.
- 11.6.49 It should be noted that for three links the accident rate is only 0.02 higher than the national average which would not be perceptively different and with daily variations would be around the national average. Those links are as follows:
- A558 between the M56 J10 and Knutsford Road/Lake Lane;
 - Moss Lane and Colvershaw Lane between A6144 and Sinderland Lane.
- 11.6.50 The A559 between the M56 J10 and Knutsford Road/Lake Lane is a rural A road. A review of the eight accidents on this 2km section of road indicates two clusters of accidents. Four accidents (half of the total) are noted at the A559/Birch Tree Lane/Bentley's Farm Lane. This junction is not proposed to be used for turning movements on the Project. With this cluster of accidents likely related to turning movements at a junction with a minor road it is not considered the link itself has a significant accident issue.
- 11.6.51 Moss Lane and Colvershaw Lane between the A6144 and Sinderland Lane is a partially urban and rural other route that routes through Partington and has been compared to a "rural other road" classification for average accidents. The link has had six accidents over the 1.99km length and these are spread out along the link. This proposed route could be considered to have an existing link-based accident record of note, however this has been mitigated in the HGV Access Strategy (set out in **Appendix 11B Preliminary CTMP**) as a route that would only receive limited HGV numbers on the Project and not provide access to a major construction access.

South Corridor

- 11.6.52 A total of 187 accidents were recorded over the five year period on highways links associated with the South Corridor between January 2016 to December 2020. Six of these accidents were recorded as fatal, 31 as serious and 150 as slight. Links that did not record any accidents have not been included in the assessment below.
- 11.6.53 **Table 11.21** provides a summary of the accidents and details of the accident rate per million vehicle kilometre, which is a means of assessing the number of accidents against national statistics.

Table 11.21 PIA Data Summary – South Corridor

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A533 between A556 and A5018	15	7	0	22	4.4	3.694	0.15	0.11
Jack Lane between A533 and End of Highway	1	0	0	1	0.2	0.741	N/A	N/A
London Road between A533 (South) and Bostock Green	1	0	1	2	0.4	1.08	N/A	N/A
A530 between A556 and King Street	15	1	0	16	3.2	4.138	0.14	0.11
A556 between M6 J19 and A533	65	10	3	78	15.6	10.531	0.14	0.11
A556 between A533 and Norley Road	9	4	1	14	2.8	5.527	0.08	0.42
Millington Lane between A49 and Weaveham Road	3	1	0	4	0.8	0.7	N/A	N/A
B5153 (Station Road) between Milton Rough and High Street	2	0	0	2	0.4	0.39	0.74	0.33
A49 between Millington Lane and B5144	1	0	0	1	0.2	1.2	0.03	0.11
A49 between B5144 and A533	12	1	0	13	2.6	4.09	0.10	0.11

Link Location	Severity			Total	PIA p.a.	Link Length (km)	Estimated Annual Flow	PIA p/a Million Vehicles km
	Slight	Serious	Fatal					
A49 between A533 and M56 J 10	10	1	1	12	2.4	5.18	0.09	0.11
Scoot Hill/New Road/Marbury Road between A533 and Uplands Lane	2	1	0	3	0.6	1.13	0.34	0.33
A533 between A49 and Stone Heyes Lane	5	4	0	9	1.8	2.85	0.21	0.11
A533 between Stone Heyes Lane and Winnington Avenue	9	1	0	10	2	2.71	0.23	0.42

11.6.54

A comparison of the links above and the accident rate per million vehicle km for the links in **Table 11.21** and the national accident rate sets out that five links have an annual accident rate higher than the national average as follows:

- A533 between A556 and A5018 – 0.15 compared to 0.11 for a rural A Road;
- A530 between A556 and King Street - 0.14 compared to 0.11 for a rural A Road;
- A530 between A556 and King Street - 0.14 compared to 0.11 for a rural A Road;
- Scoot Hill/New Road/Marbury Road between A533 and Uplands Lane - 0.34 compared to 0.33 for an urban other road; and
- A533 between A49 and Stone Heyes Lane - 0.21 compared to 0.11 for a rural A Road.

11.6.55

It should be noted that for four links the accident rate is only 0.04 higher than the national average which would not be perceptively different and with daily variations would be around the national average. Those links are as follows:

- A533 between A556 and A5018;
- A530 between A556 and King Street;
- A556 between M6 J19 and A533; and

- Scoot Hill/New Road/Marbury Road between A533 and Uplands Lane.

11.6.56

The A533 between A49 and Stone Heyes Lane is a rural A road. A review of the nine accidents on this 2.84km section of road indicate that these are spread out along the link and not in clusters of accidents at junctions. This proposed route could be considered to have an existing link-based accident record of note.

Future baseline

Future Baseline Traffic

11.6.57

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 be based on growth factors derived from TEMPro and National Traffic Statistics.

11.6.58

To understand the future year of assessment for the assessment of transport effects in the construction phase, the traffic generation calculations were interrogated to understand the peak day for all receptors on highways links. This work provided that all peak day required to be assessed in this chapter occurred in 2025 and 2026.

11.6.59

The process for understanding the two future years of assessment traffic baseline will use the methodology set out for the growth of 2019 DfT traffic to a 2022 baseline. This provided the following growth rates:

- 2022 - 2025 – Total Vehicles:
 - ▶ Coastal Industrial 1.0260;
 - ▶ Rural Cheshire – 1.0249;
 - ▶ Manchester Fringe – 1.0301;
 - ▶ Warrington – 1.0254; and
 - ▶ St Helens – 1.0245.
- 2022 - 2026 – Total Vehicles:
 - ▶ Coastal Industrial 1.0339;
 - ▶ Rural Cheshire – 1.0324;
 - ▶ Manchester Fringe – 1.0394;
 - ▶ Warrington – 1.0331; and
 - ▶ St Helens – 1.0297.
- HGV Traffic Growth:
 - ▶ 2022 – 2025 – 1.0465; and
 - ▶ 2022 – 2026 – 1.0620.

- 11.6.60 The growth rates above will be applied to the 2022 baseline to develop the future baseline for 2025 and 2026. These two future baseline years will then be used to understand the impacts of additional development traffic as a result of the Project when this traffic is added to the 2025 or 2026 future baseline.

Future Highways Network Changes

- 11.6.61 Discussion with the local highways authorities has set out details of some proposed and anticipated highways schemes (**Section 11.1**) that may need to be considered in the traffic and transport assessment at ES stage, however agreement has been reached that these will not be considered at PEIR.

11.7 Embedded environmental measures

- 11.7.1 As part of the project design process, a number of embedded environmental measures are proposed to reduce the potential for impacts on traffic and transport. **Table 11.22** outlines how these embedded measures will influence the Traffic and Transport assessment in the construction phase.

Table 11.22 Summary of embedded environmental measures

Embedded measures	Compliance mechanism
Navigable waterways, railways, the SRN and major A roads will be crossed by trenchless technology.	DCO works plans and Order Limits.
A crossing schedule/plan will be prepared which includes crossing methodology for each crossing of road, rail, PRow and watercourse.	Code of Construction Practice (CoCP) and DCO requirement.
Signage and/or temporary PRow/footpath diversions will be provided during construction.	CoCP and DCO requirement.
The HGV Routeing Strategy in the CTMP and the temporary construction access locations and onsite haul roads have ensured that several settlements would be avoided, where possible, by construction HGV traffic. These settlements include Frodsham, Helsby, Elton, Hartford, Davenham, Bostock Green, Middlewich, Wincham, Lostock Gralam, Pickmere, Comberbach, Arley, Antrobus, Stretton, Lymm, Hearley, Great Sanky, Rainhill, Sutton Manor. This measure would limit the impacts of the Project in local villages and settlements.	Proposed routeing in agreed CTMP, secured via DCO requirement

The HGV routeing strategy will avoid the Air Quality Management Area (AQMA) in Frodsham.	Proposed routeing in agreed CTMP, secured via DCO requirement
The HGV routing strategy has been developed to avoid all listed bridges on the local strategic highways network.	Proposed routeing in agreed CTMP, secured via DCO requirement
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 HyNet construction HGVs on the highways included within the HGV Access Strategy.	Proposed routeing in agreed CTMP, secured via DCO requirement
PRoWs that cross the pipeline corridors will be managed or diverted over the shortest distance possible (provided this is safe) with potential to provide adjacent crossings.	PRoWMP, secured via DCO requirement
PRoW condition surveys will be undertaken before, during and after the construction phase. If damage has been 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.	PRoWMP, secured via DCO requirement
Construction access will be provided with visibility splays designed to Design Manual for Roads and Bridges (DMRB) design standards as agreed with the highway authorities.	CTMP secured by DOC requirement, DCO Works Plans and Access Plans.
For open cut crossings crossings of the highway, there are proposed to be two options, with a diversion also a possibility: 1 - Lay the pipeline in a trench, which would be excavated in phases to ensure at least one traffic lane is operational and controlled using temporary signals (although this approach cannot be used on single track parts of the highway); and 2 - Provide a short road closure while the work is undertaken with a relevant diversion route. This is of particular importance for single track roads. Depending on local conditions this diversion may be an alternative track adjacent to the carriageways. The Applicant will consult with the appropriate Local Highways Authority.	CTMP secured via DCO requirement, DCO Works Plans and Access Plans.

Impacts on OAL will be managed through an active management strategy.

PRoWMP, secured via DCO requirement

- 12.1.2 The measures outlined in **Table 11.22** will evolve over the development process as the EIA progresses and in response to consultation. It will be fed iteratively into the assessment process. 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 and would be secured under the powers of the DCO.
- 12.1.3 In addition to the embedded environmental measures set out in **Table 11.22** two supporting documents have been prepared to support the PEIR Assessment including:
- A **Preliminary CTMP (Appendix 11A)**, which sets out details of the Construction Traffic Access Strategy that underpins the assessment in this chapter and the mitigation/management of these flows; and
 - A **Preliminary PRoWMP (Appendix 11B)** which sets out details of the impacts of the Project on the PRoW network/ OAL and the management/mitigation required.
- 12.1.4 Many of the embedded environmental measures set out in **Table 11.55** form the key management and mitigation proposals set out in these additional documents.
- 12.1.5 As the design of the Project continues to be refined from PEIR to ES stage, the above appendices will also be updated where applicable to reflect changes and submitted alongside the ES.

11.8 Scope of the Assessment

- 11.8.1 This Preliminary Traffic and Transport Assessment has been based on a realistic worst-case assessment of the construction traffic generation of the Project. At PEIR the project design includes for a number of options for pipeline route corridors, HAGI locations, material storage areas, construction compounds and access. A detailed description of the current project design is set out in **Chapter 2: The Project**. The following section sets out high level detail of the Project components across the four corridors proposed and the nature of the optionality. It should be noted the Central Hub HAGI forms a part of all four corridors. The optionality needs to be considered to understand the worst-case assessment for traffic and transport at PEIR.

West Corridor

- 11.8.2 The West Corridor is comprised of the following elements:
- Pipeline - Stanlow Hydrogen Production Plant (HPP) to Central Hub HAGI (via Rocksavage HAGI);
 - Rocksavage HAGI;

- Runcorn HAGI;
- Pipeline spur to customers at Intergen, Rocksavage and The Heath Industrial and Business Park (via Runcorn HAGI) – referred to as the Runcorn/Rocksavage Spur.

11.8.3 Some optionality has been included in the West Corridor design:

- Two pipeline route options (Options WP1 and WP2) around the Hover Force Outdoor Activity Centre;
- Three options identified for the location of the Rocksavage HAGI (Options RSH1, RSH2 and RSH3);
- Two further pipeline route options (Options WP3 and WP4) southeast of the Rocksavage HAGI; and
- 30 proposed accesses.

North Corridor

11.8.4 The North Corridor is comprised of the following elements:

- Pipeline - Central Hub HAGI to St Helens HAGI (via Clockface and Higher Walton HAGIs);
- Clockface HAGI;
- Higher Walton HAGI;
- Pipeline Spur routes to customers at Solvay, Warrington and Ingevity, Warrington (shared single connection); Novelis, Warrington; NGF Europe Ltd., Clock Face; NSG Pilkington Greengate Works, St Helens and Glass Futures, St Helens. These spurs are referred to as the Warrington Spurs, Clockface Spur and St Helens Spur.

11.8.5 Some optionality been included as follows:

- Three routes in the Creamfields Site area (NP1 to NP3);
- Two options at Higher Walton (Option NP4 and NP5);
- Two Higher Walton HAGI locations (HWH1 and HWH2); and
- 62 proposed accesses.

East Corridor

11.8.6 The East Corridor is comprised of the following elements:

- Pipeline - Central Hub HAGI to Partington HAGI via Warburton HAGI;
- Partington HAGI;
- Sworton Heath Block Valve;
- Pipeline spur to National Grid AGI, Warbuton and Carrington Power Station, Carrington; and customers at SAICA, Partington; Partington National Grid AGI;

and Bassel Polyfins, Partington. These are referred to as the Warburton Spur and Partington Spur.

11.8.7 Some optionality has been included as follows:

- Three options for the East Block Valve location (EBV1 – EBV3); and
- 52 proposed accesses.

South Corridor

11.8.8 The South Corridor is comprised of the following elements:

- Pipeline - Central Hub HAGI to Hydrogen Storage Facility at salt caverns located north of Middlewich (four routeing options currently under consideration), incorporating a Block Valve (five options currently under consideration);
- Pipeline spur to Tata Chemicals, Winnington referred to as the Northwich Spur.

11.8.9 Some optionality been included as follows:

- South of the trenchless crossing of the A556 (Chester Road) there are four pipeline route options (Option SP1 to SP4);
- The south option Block Valve has five potential locations (SBV1-SBV5); and
- 57 proposed accesses.

The worst-case scenario

11.8.10 Assessing using a parameter-based design envelope approach means that the assessment considers a reasonable worst-case scenario whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the DCO Application. The assessment of the maximum adverse scenario for each receptor establishes the maximum potential adverse impact. As a result impacts of greater adverse significance would not arise should any other development scenario to that assessed within this chapter be taken forward in the final scheme design.

11.8.11 To inform this chapter a worst-case scenario has been developed which has provided for the maximum realistic traffic generation for the construction of the Project.

11.8.12 With the Project optionality provided at PEIR, traffic calculations have been developed by the project engineers across the proposed construction programme for each access to be used for the worst-case scenario for each day of the construction programme.

11.8.13 The maximum assessment assumptions that are relevant to transport are outlined in **Table 11.23** below.

Table 11.23 Maximum Assessment Assumptions for Impacts on Transport

Corridor	Type of Optionality	Maximum Assessment Assumptions	Justification
West	HAGI	Rocksavage HAGI Option - RSH1	This requires access from Elton Road to the west and significantly more haul road and therefore traffic generation for access arrangements.
	Material Storage Area Locations	Material storage area accessed from WH-01	Location which would require vehicles to route the furthest from the M56. This would serve the entire west corridor so located at the furthest end would generate a wider traffic impact.
	Pipeline Options	Pipeline Option WP1	Marginal difference, but WP1 requires slightly more haul road and therefore traffic generation.
		Pipeline Option WP3	Route includes for two trenchless crossings rather than one on WP4. The resultant additional trenchless crossings on WP3 will generate more traffic.
	Accesses	WH-01, WH-02, WH-03, WH-04, WH-05, WH-06, WH-07, WL02, WL03, WL04, WL05, WL06, WH-08, WH-09, WH-10, WH-11, WS2, WH-12, WH-14, WH-15, WH-16, WH-17, WH-18, WH-19, WH-20, WH-21, WH-22, WH-23	These are the accesses required to build the Project based on the optionality presented in this PEIR. These have been selected on basis of the largest wider transport impacts on the highways network.
North	HAGI	Higher Walton HAGI Option – HWH2	This is the HAGI required to support Pipeline Option NP5.
	Material storage area Locations	Material storage area accessed from NH-42	Site selected as it would require traffic to traffic to serve the southern section of the North Corridor to route around Warrington.

Corridor	Type of Optionality	Maximum Assessment Assumptions	Justification
	Pipeline Options	Pipeline Option – NP3	Option NP3 is the furthest from the A56 and would require the longest haul roads of the three options and the most traffic generation. Option NP3 also has an additional open cut crossing of the local highway network compared to NP1 and NP2 and resultant higher traffic generation.
		Pipeline Option – NP5	This route has a more difficult engineering solution including crossings of roads, rail and navigable waterways. This option also would introduce higher construction traffic flows to the key settlements of High Walton and southern Warrington.
	Accesses	NH-01, NH-02, NH-03, NH-04, NL-01, NH-05, NH-06, NH-07, NH-08, NH-09, NH-10, NH-15, NH-16, NH-17, NH-18, NH-19, NH-20, NH-29, NH-31, NH-32, NH-33, NH-34, NH-36, NH-37, NH-38, NH-39, NH-40, NH-41, NH-42, NH-43, NH-44, NH-45, NH-46, NH-47, NH-48, NH-49, NH-50, NH-51, NH-52, NH-53, NH-54, NH-55, NH-56, NH-57, NH-58, NH-59, NH-60, NH-61, NH-62	These are the accesses required to build the Project based on the optionality presented in this PEIR. These have been selected on basis of the largest wider transport impacts on the highways network.
	Block Valves	EBV3	Marginal traffic generation difference. Location near A50 selected to provide marginal higher traffic flows on this key corridor.
East	Accesses	EH-01, EH-02, EH-03, EH-04, EH-05, EH-06,	These are the accesses required to build the Project

Corridor	Type of Optionality	Maximum Assessment Assumptions	Justification
South		EH-07, EH-08, EH-09, EH-10, EH-11, EH-12, EH-13, EH-14, EH-15, EH-16, EH-17, EH-18, EH-19, EH-20, EH-21, EH-22, EH-23, EH-24, EH-25, EH-26, EH-27, EH-28, EH-29, EH-30, EH-31, EH-32, EH-33, EH-34, EH-35, EH-36, EH-37, EH-38, EH-39, EH-40, EH-41, EH-42, EH-43, EH-44, EH-45, EH-46, EH-47, EH-48, EH-49, EH-50, EH-51.	based on the optionality presented in this PEIR. These have been selected on basis of the largest wider transport impacts on the highways network.
	Material storage area Locations	Material storage area accessed from EH-08/EH-09	Located at near as possible to the western end of the route as this would have a wider traffic impact servicing the East Corridor to Partington.
	Pipeline Options	Pipeline Option SP2	Although this route has one less trenchless crossing than SP4 it has significantly more access track lengths which on balance would result in this option generating the higher traffic generation.
	Block Valves	SBV1	Marginal traffic generation difference. Location near A556 selected to provide marginal higher traffic flows on this key corridor.
	Accesses	SH-01, SH-02, SH-03, SH-04, SH-05, SH-06, SH-07, SH-08, SH-09, SH-10, SH-11, SH-12, SH-13, SH-14, SH-15, SH-16, SH-21, SH-22, SH-23, SH-29, SH-30, SH-31, SH-32, SH-33, SH-34, SH-35, SH-36, SH-37, SH-38, SH-39, SH-40, SH-41, SH-42,	These are the accesses required to build the Project based on the optionality presented in this PEIR. These have been selected on the basis of the largest wider transport impacts on the highways network.

Corridor	Type of Optionality	Maximum Assessment Assumptions	Justification
		SH-43, SH-44, SH-45, SH-46, SH-47 SH-48, SH-49, SH-50, SH-51, SH-53, SH-54	
	Material storage areas	Pipe dump accessed from SH-37	Located as near as possible to the eastern end of the route as this would have a wider traffic impact servicing as HGV would have to route around Northwich to get to the northern sections of the south corridor.
N/A	Central Hub HAGI	CHH1 Location	Further from the high highways network to more haul road and traffic generation required
N/A	Runcorn Spur	Route Option RSp1	Longest of the two route options resulting in higher traffic generation.
N/A	Warrington Spur	Route Option WSp1	This route has been selected as this involves a complicated construction methodology under the existing rail lines into Warrington and is also the proposed route of the Warrington Spur, which is considered a worst case for the Project.
N/A	Northwich Spur	Route Option NSp2	Longest of the two route options resulting in higher traffic generation.

11.8.14 It should be noted that whilst much of the optionality will not be required in the final design of the Project, the assessment of transport effects at the PEIR stage assumes a worst-case scenario of a Project that will generate the maximum amount of traffic on the local and strategic highways network.

Spatial scope

11.8.15 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;

- avoidance of major and small settlements; and
- suitability of routes based on a review of road types and widths.

11.8.16

Based on the roads identified as part of the Study Area in **Section 11.4** for the four corridors and the SRN, a number of 'highway links' have been identified. **Table 11.24** sets out these highways links and **Figure 11.12: Highways Links in Study Area** shows these links on a plan of the highways network within the scope of assessment. These links have been given identification numbers for either the Corridors of the Project they are located within or an identification if they are SRN links. The identification is as follows:

- RWx – West Corridor highways links;
- RNx – North Corridor highways links;
- REx – East Corridor highways links;
- RSx – South Corridor highways links; and
- SRNRx – SRN highways links.

11.8.17

In order to understand the wider impact of the construction traffic on the SRN, Highways Links SRNR1-12 have been used to allow for robust assessment of effects on the SRN, even though as set out in **Section 11.10** these are not all sensitive links for traffic. Other local highway network links (such as dual carriageways) have also been selected for the same reason as set out in **Section 11.10**.

Table 11.24 Highways Link identified for Assessment

Access Ref	Highways Link	Highways Location
RW1	A5117	Between Common Lane and M56 J14
RW2	A557	Between A56 and Halton Station Road
RW3	A56	River Weaver Bridge
RW4	A533	Between A49 and Higher Lane
RW5	A533	Between Aston Lane and Redacre Close
RW6	A56	Between Proffits Lane and Woodhouses Lane
RW7	A557	Between M56 J12 and Weston Point ExPy (n)
RW8	A557	Between Rocksavage Way and Weston Link
RW9	A56	Between Station Road and A533
RW10	A56	Frodsham Town Centre
RW11	A5117	Between M56 and B5132

RN1	A56	Between M56 and A558
RN2	A56	Between A5060 and Mill Lane
RN3	A57	Between Monmouth Close and Dam Lane
RN4	A50	Between Farrell Street and Bridgewater Avenue
RN5	A562	Between A5080 and Tavistock Road
RN6	A562	Between A5080 and Mowcroft Lane
RN7	A5080	Between A557 and South Lane
RN8	A557	Between M62 J13 and B5419
RN9	A57	Between B5149 and M62J7
RN10	A570	between Chapel Lane and Eurolink
RN11	A570	Between Burtonhead Road and B5204
RN12	A570	Between Sherdley Road and Linkway East
RN13	Higher Lane	Between A533 and A49
RN14	B5204	Between A570 and Rainhill Road
RN15	Runcorn Road	Between A56 and Moore
RN16	Liverpool Road	Sankey Bridge
RE1	A49	Between Grimsditch Lane and Street Lane
RE2	A559	Between M56 J10 and Stockley Lane
RE3	A49	Between M56 J10 and Limes Lane
RE4	Arley Road	Between B5356 and Reedgate Lane
RE5	A50	Between West Lane and Crabtree Lane
RE6	A56	Between M56 J7 and Bow Green Road
RE7	A56	Between M56 J7 and Reddy Lane
RE8	A6144	Between Isherwood Road and Banky Lane
RE9	Woodhouse Lane	Dunham Woodhouses
RE10	A6114	Partington

RE11	A6114	South of Partington
RS1	A49	Between A533 and Willow Green Lane
RS2	A49	Between Station Road and B5144
RS3	B5153	West of Weaverham
RS4	A556	Between Whitegate Lane and School Lane
RS5	A533	Between Church Street and London Road
RS6	A530	Between King Street and Davenham Road
RS7	A556	Between Penny's Lane and Birches Lane
RS8	A533	Between Shutley Lane and Broomsfield Lane
RS9	Marbury Road	Between Cogshall Lane and Budworth Lane
RS10	A533	Barton Centre
SRNR1	M56	M56 Junction 12 (M56/A557)
SRNR2	M62	Between M62 J8 and J7
SRNR3	M6	M6 J21
SRNR4	M56	Between J8 M56 and J9 M56/J20M6
SRNR5	M60	Between M60 J10 and J9
SRNR6	M60	Between M60 J6 and 5
SRNR7	M62	Between M62/M602/M60 and M62 J11
SRNR8	M56	Between J6 and J5 M56
SRNR9	M6	Between M6 J19 and M56 J9/M6J20
SRNR10	A556	Between Chapel Lane and M56 J8
SRNR11	M6	Between J19 and J18 (M6)
SRNR12	M56	Between M6 and Junction 10

Temporal Scope

11.8.18

The temporal scope of the traffic and transport reflects the construction period of the Project.

- 11.8.19 The timing and duration of the construction of the Project is set out in **Chapter 2: The Project**. Details of this programme and how that will affect traffic and transport generation across the construction phase is set out in **Section 11.10** of this chapter.
- 11.8.20 The construction of the Project is due to start in 2024 (site establishment works) and be complete by 2027 across 732 days of works where construction traffic is generated. The temporal scope of the assessment of the construction phase has been defined for the peak day construction activity at individual receptors which is set out in **Section 11.10**. This indicates future years of assessment at highways receptors of 2025 and 2026.

Potential Receptors

- 11.8.21 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 receptors that may be sensitive to changes in traffic conditions which can be defined as:
- the roads used for the purpose of construction of the Project and the users of those roads; and
 - land uses and environmental resources fronting those roads, including the relevant occupiers and users.
- 12.1.6 The list of receptors will be kept under review during the EIA as more detailed information is obtained during baseline surveys and other forms of data collection by other aspects and will be reflected in the final ES.

Likely significant effects

- 11.8.22 The traffic and transport related effects on receptors within the Study Area, which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 11.25**.

Table 11.25 Traffic and transport receptors scoped in for further assessment

Activity	Effect	Receptor
Construction		
Construction and installation of pipeline and associated working, establishing accesses and security measures resulting in potential impacts on the local and SRN	Construction traffic at sensitive highway receptors. Impact of construction traffic and proposed infrastructure on PRoWs. All receptors on identified highways links (Table 11.24)	Transport receptors to be defined based on: • People at home; • People at work; • Sensitive groups; • Sensitive locations; • Pedestrians;

Activity	Effect	Receptor
	Effect anticipated to not be significant based on magnitude of change, receptor sensitivity and mitigation to be identified. To be confirmed through assessment.	• Cyclists; • Open spaces recreational areas and shopping areas; • Sites of ecological and nature conservation value;
Construction of HAGIs and Block Valves (infrastructure) resulting in potential impacts on the local and SRN and permanent effects on PRow	Construction traffic at sensitive highway receptors. Impact of construction traffic and proposed infrastructure on PRow. Location of HAGIs that would have permanent effects on PRow. All receptors on identified highways links (Table 11.24). Effect anticipated to not be significant based on magnitude of change, receptor sensitivity and mitigation to be identified. To be confirmed through assessment.	• Tourist/visitor attractions; and • Existing congestion
Provision of associated construction compounds/material storage areas to support the delivery of the development resulting in potential impacts on the local and SRN	Construction traffic at sensitive highway receptors. Impact of construction traffic and proposed compounds on PRow. All receptors on identified highways links (Table 11.24). Effect anticipated to not be significant based on magnitude of change, receptor sensitivity and mitigation to be identified. To be confirmed through assessment.	

Elements scoped out of further assessment

- 11.8.23 The receptors/effects detailed in **Table 11.26** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

Table 11.26 Summary of effects scoped out of the traffic and transport assessment

Receptors/potential effects	Justification
Construction Phase	
Impact of conveyance of Hazardous Loads on local and strategic highways	There are no anticipated hazardous loads anticipated on the Project so as agreed with PINS in Table 11.3 these have been scoped out of assessment.
Impact of conveying Abnormal Loads on the local and strategic highway	There are no anticipated Abnormal Loads required on the highways network and as such this has been scoped out.
Operation and Maintenance Phase	
All local roads, PRowS, rail lines and navigable watercourses	The potential effects of traffic impacts in the operational and maintenance phase of the development has been removed from assessment due to the negligible amounts of traffic generated in this phase as agreed with PINS and set out in Table 11.3 .
Decommissioning Phase	
All local roads, PRow, Rail lines and navigable watercourses	The potential effects of traffic impacts in the decommissioning Phase of the Project has been removed from assessment due to the negligible amounts of traffic generated in this phase as agreed with PINS and set out in Table 11.3 .

- 11.8.24 In pre Section 42 consultation it was requested that the reasons for the operational phase of the development having been scoped out to be set out in further detail in the traffic and transport ES Chapter. The following Section sets out details of the operational phase and resultant traffic generation.

Operational Phase Traffic

- 11.8.25 The HAGIs would generally be operated remotely from an Energy Control Centre located off-site. The HAGIs would be operational continuously (24 hours a day) but dependent on downstream consumer usage of the hydrogen supply. The frequency of periodic maintenance undertaken on-site has yet to be determined and will be in a post DCO submission operation plan, but would typically include the following:

- Routine checks on a weekly basis requiring 1-2 personnel for a short period (approximately 1 hour) – 2 LVs per week to each HAGI.
- 6 monthly maintenance requiring two personnel for approximately one day – 2 LVs per 6 month period for each HAGI.
- Major maintenance requiring five personnel for approximately one week (every 2 to 5 years) – 3 LVs for five days every 2 to 5 years.
- Inline inspection operations requiring ten personnel for approximately one week and undertaken every 5 to 15 years – 4 LVs for five days every 5 to 15 years.
- Infrequent breakdown or emergency visits with access on a 24/7 basis.

11.8.26 Pipeline route surveillance is undertaken by helicopter, drone or vantage surveys so access onto private land is not normally required. Aerial surveys are typically undertaken every two weeks, but frequency will be determined during further design development. There are some infrequent maintenance surveys which may be required and which would require access on foot (line walking) over the route of the pipeline but do not require excavation or other intrusive activities – This work would require 1 vehicle for vantage surveys and 2 for staff walking the line.

11.8.27 As described above, the inspection of the pipelines is undertaken internally from the in-line inspection facilities at HAGIs without access to the buried pipeline route. It is anticipated that no pipeline maintenance would be required where excavation of the pipeline is required unless a defect is identified. There is also a requirement for overline surveys onsite every 1-15 years at a mid-point between the internal inspections.

11.9 Methodology for PEIR assessment

Introduction

11.9.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: Approach to Preparing the PEIR**. 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.

General approach

11.9.2 The assessment of the potential significance of road traffic effects is based on GEART 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).

11.9.3 The assessment is based on the likely percentage increases in traffic as a result of the Project and the sensitivity of the receptor(s) affected.

11.9.4

The following transport effects identified in GEART are considered in the assessment:

- Severance: the separation of people from places and other people and places or impediment of 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; and
- Accidents and safety: the risk of accidents occurring where the Project is expected to produce a change in the character of traffic.

Determination of Significance

11.9.5

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.

11.9.6

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.

11.9.7

GEART provides two rules that are used to establish whether an environmental assessment of traffic and transport 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.

11.9.8

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.

11.9.9

Table 11.27 sets out how significance will be determined based on receptor sensitivity and the magnitude of change.

Table 11.27 Significance evaluation matrix

Receptor sensitivity	Magnitude of change				
		High	Medium	Low	Negligible
	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)

Receptor sensitivity

11.9.10

The sensitivity of each highway link to be included in the assessment will be assigned a sensitivity in accordance with the advice provided in the GEART¹⁸, as summarised in **Table 11.28** and based on professional judgement.

Table 11.28 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.	Occupants of buildings alongside the road; transport users using 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.	Occupants of buildings alongside the road; transport users using 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.	Occupants of buildings alongside the road; transport users using 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.	Occupants of buildings alongside the road; transport users using the road

11.9.11 In accordance with GEART¹⁸, 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 results, 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

11.9.12 GEART¹⁸ 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)

11.9.13 Based on Rule 1 and Rule 2 and the sensitivity of the receptors, **Table 11.29** shows the magnitude of change that 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 GEART¹⁸ and professional judgement.

Table 11.29 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	Change in traffic results in significant queuing or increase in queuing at junctions and/or congestion on road links resulting in noticeable increase in delay	Change in traffic results in moderate queuing or increase in queuing at junctions and/or congestion on roads links resulting in moderate increase in delay	Change in traffic results in minimal queuing increase at junctions and/or congestion on roads links resulting in minor increase in delay	Change in traffic has no impact on 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.			

11.10 Preliminary Assessment of traffic and transport effects

11.10.1 As the Project is a wide scale infrastructure project with numerous bespoke elements of work that need to be carried out, at this PEIR stage there remains a

level of optionality in the current project design. The current design and layout is provided as **Figure 11.13: Proposed Project Design** and the maximum design scenario is set out in detail in **Table 11.24. Figure 11.14: Project Accesses Used to Inform PEIR Assessment** sets out the traffic and transport accesses used to inform the assessment and details of these accesses are presented in **Tables 3.1 to 3.4 in Appendix A (CTMP)**.

- 11.10.2 To undertake the assessment of effects of the traffic generated by the Project the traffic flows have been estimated and trips distributed onto the road network.
- 11.10.3 The trips for the peak construction phase of the Project have been added to future baseline years to provide a clear impact of the difference between the growth of future baseline 'without Development' and the growth of future baseline 'with Development'.
- 11.10.4 The significance 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 11.9**.
- 11.10.5 The assessment within this section has been undertaken on a worst-case basis for traffic generation considering the optionality that is included within the preliminary Order Limits.
- 11.10.6 The assessment in this section includes all of the relevant embedded mitigation measures the details of which are set out in **Table 11.22**.

Traffic Generation

Basis for Traffic Generation

- 11.10.7 There are several elements of the Project that will generate construction traffic movements during the indicative proposed construction programme which extends from 2024 to 2027. This section sets out how construction traffic has been developed by the project engineers.
- 11.10.8 A detailed breakdown of the assumptions and methodology of how the traffic generation has been developed is set out in the "HyNet Preliminary Transport and Logistics Report". This report has been included as **Appendix 11D**.
- 11.10.9 The calculations undertaken to inform the "Preliminary HyNet Transport and Logistics Report" have broken down the civils works to separate components and calculated traffic generation based on first principles for the following elements:
 - Site Surveys;
 - Access Works;
 - Site Clearance;
 - Trenching;
 - Material deliveries;
 - Fabrication;

- Field Joint and Non-Destructive Examination (NDE);
- Installation;
- Backfilling;
- Reinstatement – Right of Way;
- Pre commissioning Works;
- HDD Crossings;
- Microtunneling crossings;
- Reinstatement – Accesses;
- HAGIs and Compounds; and
- Reinstatement – Compounds.

11.10.10 The traffic generation for each element above has been distributed across the accesses identified in the maximum design scenario and the proposed indicative preliminary construction programme. This has been done on a daily basis for the 732 days of the programme where traffic generation is required. The preliminary indicative construction programme starts on day 1: 01 October 2024 and ends on day 732: 01 February 2027.

11.10.11 Based on the calculations a series of traffic figures are provided for the proposed works for each activity across the construction programme, setting out daily traffic generation per access per day for HGVs and LVs. The figures have been included as **Appendix 11E**.

Total Traffic Generation

11.10.12 With all of the individual traffic predictions for the individual work streams set out in **Appendix 11E** added together **Figures 11.15 and 11.16** show the HGV and LV vehicle totals for the entire Project across the programme per access per day.

11.10.13 The total traffic generation set out in **Figures 11.15 and 11.16** has then been used to calculate which day would be the peak day of development traffic for each of the Highways Links set out in **Table 11.24** and this is set out in **Figure 11.17**.

Traffic Distribution

11.10.14 For this PEIR assessment high level distribution assumptions have been made. For the ES chapter further details will be obtained as to the following distribution issues that cannot currently be addressed:

- Distribution of trips specifically between construction compounds and works sites (and associated reduction in direct to site trips);
- HGV distribution based on anticipated locations for materials to be delivered to site such as steel work, stone, geo grid, cranes, plant, concrete etc and so on;

- A more refined Staff LV distribution methodology based on any established works practices that the Applicant may bring forward on the Project (local accommodation, works campus).

11.10.15 It is considered that the distribution methodology set out in this chapter is a robust worst-case assessment compared to the potential changes set out above. The methodology has distributed HGVs and LVs across the full extent of the Study Area resulting in greater and wider impacts across the local and strategic network than is likely. The additional information on traffic distribution could, for example, identify local suppliers that would be used for material (stone for example from local quarries), which would reduce the impact of HGVs on the wider network.

HGV Traffic Distribution

11.10.16 HGV traffic generation in this PEIR chapter is based on identifying 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 the subsequent removal) and other materials needed for the installation of the pipeline. Other deliveries, such as pipes and the components of the HAGIs as well as other materials are also likely to be sourced from industrial areas of the north.

11.10.17 HGVs will route onto the SRN in the Study Area via six routes as follows:

- M56 West;
- M6 South;
- M60 East;
- M62/M60 North;
- M6 North; and
- M62 West.

11.10.18 **Figure 11.18: HGV Distribution** sets out the location of the destination/origins of HGV trips into the Study Area.

11.10.19 The HGV movements generated as part of the construction of Project will travel directly to individual accesses and it is assumed that no additional HGV traffic is proposed from temporary construction compounds to works sites.

11.10.20 **Table 11.30** sets out the HGV distribution of construction material deliveries directly to and from the Project access locations.

Table 11.30 HGV Distribution for the Project

Network Exit Point	Distribution
M56 West	16.7%
M6 South	16.7%
M60 East	16.7%
M62/M60 North	16.7%
M6 North	16.7%
M62 West	16.7%

- 11.10.21 HGV routing from the Project access locations to the Study Area network entry/exit points has been developed from the HGV Access Strategy set out in the Preliminary CTMP (**Appendix 11A**). **Figure 11.19: HGV Access Strategy** sets out the proposed HGV Access Strategy.
- 11.10.22 The HGV Routing Strategy and the temporary construction access locations and onsite haul roads have ensured that several settlements would be avoided by construction HGV traffic. These settlements include Frodsham, Helsby, Elton, Hartford, Davenham, Bostock Green, Middlewich, Wincham, Lostock Gralam, Pickmere, Comberbach, Arley, Antrobus, Stretton, Lymm, Hearley, Great Sanky, Rainhill, Sutton Manor. This measure would limit the impacts of the Project in local villages and settlements.
- 11.10.23 The HGV Routing Strategy and the temporary construction access locations and onsite haul roads have ensured that several settlements would be avoided by construction HGV traffic. These settlements include the built-up urban centres of Warrington, St Helens, Widnes, Runcorn, Greater Manchester, Sale, Altrincham, Natwich, Weaverham.

Light Vehicle Distribution

- 11.10.24 For construction staff traffic movements into and out of the temporary construction accesses per day, a detailed distribution matrix has been required. This has been based on journey to work data from the 2011 Census for five local areas. These areas are as follows:
- Rural Cheshire:
 - ▶ All of the South Corridor;
 - ▶ East Corridor from the Central Hub HAGI and Dunham Massey;
 - ▶ North Corridor from Central Hub HAGI to Manchester Ship Canal;
 - ▶ West Corridor from Central Hub HAGI to Preston Brook.
 - Coastal Industrial:
 - ▶ West Corridor from Stanlow to Preston Brook;

- ▶ Runcorn Spur.
- Manchester Fringe:
 - ▶ East Corridor Dunham Massey to the Partington HAGI.
- Warrington:
 - ▶ North Corridor north of Manchester Ship Canal and Bold Heath;
 - ▶ In-carriageway pipeline section in Warrington.
- St Helens:
 - ▶ North Corridor from Bold Heath and section of corridor into St Helens north of M62.

11.10.25

The areas used for the assessment of the journey to work data for the five areas are as follows:

- Rural Cheshire – Industrial Areas around Tata Steel in Winnington (Super Output Area – Cheshire West and Chester 018)
- Coastal Industrial – Industrial Areas around the Stanlow Refinery (Super Output Area – Cheshire West and Chester 011)
- Manchester Fringe – Industrial Areas around Partington (Super Output Area – Trafford 017);
- Warrington – Industrial Areas around Factory Lane (Super Output Area – Warrington 018); and
- St Helens – Industrial Areas in Sutton Heath (Super Output Area – St. Helens 019).

11.10.26

The five areas have been selected to allow for an appropriate distribution of LV traffic across the Preliminary Order Limits. The distribution of traffic in the urban fringe of Manchester area would be different to that from work sites in rural Cheshire or north of the M56 near Ellesmere Port. This is a function of the wide scope of assessment for the Project.

11.10.27

The resultant LV construction staff traffic distribution and assignment onto the road network within the Study Area is set out in **Table 11.31** for the five areas of the Project. **Figure 11.20: LV Distribution** sets out the geographical scope of the exit points from the highways network in the Study Area.

Table 11.31 LV construction staff traffic distribution and assignment onto road network

Entry/exit points from highways network Study Area scope	Rural Cheshire Accesses WH-16 to 23 NH-01 to 28 EH-01 to 39 SH-01 to 54	Costal Industrial Accesses WH-01 to 15	Manchester Fringe Accesses EH-39 to 52	Warrington Accesses NH-29 to 43	St Helens Accesses NH-44 to 61
A49 North	-	-	0.06%	9.66%	-
A49 North (to Warrington)	0.57%	0.15%	-	-	-
A49 South	1.89%	-	0.28%	0.20%	-
A50 South	-	-	1.16%	-	-
A50 West	-	-	0.55%	-	0.15%
A5033 East	2.02%	0.23%	-	0.69%	0.05%
A5117 West	-	51.58%	-	-	-
A530 South	9.22%	0.18%	-	0.24%	-
A533 South	9.39%	-	-	-	-
A533 West	0.23%	0.03%	0.17%	0.27%	0.03%
B5081 East	0.88%	-	-	-	-
A538 South	0.04%	0.09%	1.05%	0.29%	-
A5018 West	7.24%	-	0.06%	0.08%	0.03%
A555 East	0.55%	0.43%	-	0.55%	0.10%
A556 Chester Road West	2.67%	-	0.11%	0.12%	-
A557 South	-	-	0.17%	-	3.08%
A558 West	0.38%	-	0.17%	3.28%	-

A559 South	-	0.17%	-	0.46%	-
A56 South West	-	-	-	-	0.05%
Frodsham and Helsby	0.53%	0.88%	0.06%	1.02%	0.13%
A560 West	0.11%	-	0.06%	0.06%	-
A562 West	-	-	-	5.41%	0.00%
A57 East	0.19%	0.06%	3.03%	0.85%	-
A57 South	-	-	-	-	0.03%
A57 West	0.13%	0.05%	0.50%	1.93%	0.18%
A58 North	-	-	0.11%	1.31%	44.58%
Altrincham	0.74%	0.31%	8.43%	0.74%	0.23%
B5082 East	1.60%	-	0.22%	0.24%	-
B5132 South	-	16.92%	-	-	-
Hartford	3.77%	-	-	-	-
B5156 West	-	-	-	2.52%	-
B5167 East	0.11%	0.05%	-	0.00%	0.05%
B5204 East	-	-	-	-	12.96%
B5204 West	-	-	0.17%	0.97%	7.21%
A6114 South	-	-	2.15%	-	-
B5419 South	-	-	0.11%	-	0.56%
Birchwood Way South	-	0.11%	-	-	0.49%
Broomsfield Lane East	3.22%	-	-	-	-
Chapel Lane East	-	-	0.06%	-	-
Clay Lane North	-	-	0.11%	3.39%	-
Flixton and Urmston Area	0.08%	0.14%	6.94%	0.26%	0.08%

Greater Manchester	1.35%	1.07%	17.80%	2.97%	1.54%
Internal	5.47%	3.48%	7.82%	2.54%	6.49%
London Road South	3.66%	-	0.06%	0.12%	0.05%
Lymm	0.38%	0.09%	1.76%	1.25%	0.05%
M60 East	1.41%	0.55%	8.04%	1.07%	0.67%
M56 West	2.15%	9.81%	2.70%	5.00%	1.26%
M6 North	1.03%	1.20%	2.15%	0.77%	-
M6 South	-	1.01%	3.97%	3.06%	1.59%
M60 North	0.51%	0.51%	12.73%	3.03%	2.41%
M62 West	-	-	2.09%	6.21%	12.01%
Marshalls Cross Road North	-	-	-	0.15%	-
Norely Road East	-	-	-	0.28%	-
Northwich	31.02%	1.18%	0.66%	0.99%	0.18%
Primrose Lane East	-	2.15%	-	-	-
Sale and Wythenshawe	0.38%	0.29%	10.63%	0.82%	0.10%
Station Road West	0.99%	-	0.06%	-	-
Warrington	2.44%	1.23%	3.42%	33.71%	2.87%
Warrington Road West	-	-	-	1.40%	0.74%
Weston Link East	3.39%	5.66%	0.11%	-	-
Woolston Grange Avenue North	-	-	0.28%	1.75%	-

Weston Point Expressway North	0.29%	0.38%	0.06%	-	-
Whitegate Lane South	-	-	-	0.33%	0.03%

- 11.10.28 The LV construction traffic would not have a defined route to sites and temporary construction compounds (TCCs) and staff vehicles are proposed to be permitted to access sites at their own discretion based on the day's work schedule (may be at multiple sites), local traffic conditions, weather and other work-based factors as would be expected for any LV construction staff traffic routing to and from their place of work. This has been calculated using google maps journey planning software.

Peak Day Identification

- 11.10.29 With a fixed set of temporary accesses, predictions of traffic generation across the construction phase and distribution for HGV and LV traffic for the peak day of traffic for each identified highways link have been predicted.
- 11.10.30 The following peak days during the construction phase are set out in **Table 11.32** for each of the identified highways links in the Study Area. These are listed in time order.

Table 11.32 Peak Day Identification

Highways Link No.	Road	Location	Day no.	Date
SR8	A533	Between Shutley Lane and Broomsfield Lane	140	12/03/2025
SR10	A533	Barton Centre		
RW11	A5117	Between M56 and B5132	146	19/03/2025
SR9	Marbury Road	Between Cogshall Lane and Budworth Lane	150	12/03/2025
RW1	A5117	Between Common Lane and M56 J14		
RW6	A56	Between Proffits Lane and Woodhouses Lane	162	07/04/2025
RW10	A56	Frodsham Town Centre		
RN10	A570	between Chapel Lane and Eurolink	172	18/04/2025
RN14	B5204	Between A570 and Rainhill Road	174	21/04/2025

Highways Link No.	Road	Location	Day no.	Date
RN5	A562	Between A5080 and Tavistock Road	202	23/05/2025
RN7	A5080	Between A557 and South Lane		
RN8	A557	Between M62 J13 and B5419		
RN16	Liverpool Road	Sanky Bridge		
RN15	Runcorn Road	Between A56 and Moore	206	28/05/2025
RN1	A56	Between M56 and A558	215	07/06/2025
RW3	A56	River Weaver Bridge	221	14/06/2025
RN11	A570	Between Burtonhead Road and B5204	222	16/06/2025
RN12	A570	Between Sherdley Road and Linkway East	232	27/06/2025
RN13	Higher Lane	Between A533 and A49	239	05/07/2025
SRNR3	M6	M6 J21		
SRNR4	M56	Between J8 M56 and J9 M56/J20M6		
SRNR7	M62	Between M62/M602/M60 and M62 J11		
SRNR8	M56	Between J6 and J5 M56		
SRNR9	M6	Between M6 J19 and M56 J9/M6J20		
SRNR11	M6	Between J19 and J18 (M6)		
SRNR1	M56	M56 Junction 12 (M56/A557)	247	15/07/2025
SRNR12	M56	Between M6 and Junction 10	251	19/07/2025
RW2	A557	Between A56 and Halton Station Road		
RE1	A49	Between Grimsditch Lane and Street Lane		
RE3	A49	Between M56 J10 and Limes Lane		
RW4	A533	Between A49 and Higher Lane	273	14/08/2025
RW5	A533	Between Aston Lane and Redacre Close		

Highways Link No.	Road	Location	Day no.	Date
RW9	A56	Between Station Road and A533		
RW7	A557	Between M56 J12 and Weston Point ExPy (n)	275	16/08/2025
RW8	A557	Between Rocksavage Way and Weston Link		
RN2	A56	Between A5060 and Mill Lane	304	19/09/2025
SRNR2	M62	Between M62 J8 and J7	324	24/10/2025
RN6	A562	Between A5080 and Mowcroft Lane	360	24/11/2025
RN3	A57	Between Monmouth Close and Dam Lane	429	12/02/2026
RN4	A50	Between Farrell Street and Bridgewater Avenue		
RE8	A6144	Between Isherwood Road and Banky Lane	457	17/03/2026
SRNR5	M60	Between M60 J10 and J9		
SRNR6	M60	Between M60 J6 and 5		
RE6	A56	Between M56 J7 and Bow Green Road		
RE9	Woodhouse Lane	Dunham Woodhouses	466	27/03/2026
RE10	A6114	Partington		
RE11	A6114	South of Partington		
RE7	A56	Between M56J7 and Reddy Lane	478	10/04/2026
SR1	A49	Between A533 and Willow Green Lane	480	13/04/2026
RN9	A57	Between B5149 and M62J7	483	16/04/2026
SR3	B5153	West of Weaverham	486	20/04/2026
RE5	A50	Between West Lane and Crabtree Lane	498	04/05/2026
SR2	A49	Between Station Road and B5144	501	07/05/2026
SRNR10	A556	Between Chapel Lane and M56 J8	504	11/05/2026

Highways Link No.	Road	Location	Day no.	Date
SR4	A556	Between Whitegate Lane and School Lane	520	29/05/2026
RE4	Arley Road	Between B5356 and Reedgate Lane	525	04/06/2026
SR7	A556	Between Penny's Lane and Birches Lane	530	10/06/2026
RE2	A559	Between M56 J10 and Stockley Lane	541	23/06/2026
SR5	A533	Between Church Street and London Road	556	10/07/2026
SR6	A530	Between King Street and Davenham Road	587	15/08/2026

11.10.31 The resultant traffic generation is presented on a network plot as **Figure 11.21: Peak Day Construction Traffic Network Plot** while locations of the highways links are presented on **Figure 11.12**.

Proposed construction access

11.10.32 The location of each construction access point that is required for the PEIR maximum design scenario is set out in **Figure 11.14**. 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).

11.10.33 Details of all the accesses required on the Project are set out in the Preliminary CTMP (**Appendix 11A**). All of the HGV accesses have been provided with a worst case visibility splay based on the speed limit of the road based on DMRB guidance set out in CD123 Geometric Design of at grade priority and signal junctions²⁴ at PEIR stage. It is proposed that these will be updated to reflect details of site specific discussions with the relevant highways authority in the post PEIR scenario with speed survey information likely reducing the extent and impact of visibility splays.

Proposed Permanent Accesses

11.10.34 There will be a need for permanent access to the Central Hub HAGI for maintenance, the designs of which will need to be developed and discussed CWCC after Section 42 consultation has taken place. It is anticipated that the key permanent access to the Central Hub HAGI will be from WH-23. In this location

²⁴ Standards for Highways (2021). CD 123 - Geometric design of at-grade priority and signal-controlled junctions (online) Available at: <https://www.standardsforhighways.co.uk/dmrb/search/962a81c1-abda-4424-96c9-fe4c2287308c> (Accessed August 2022).

there is already a significant but informal gated farm/field access. Discussion will be required as to the nature of the permanent design in this location including geometric standards and visibility requirements with the CWCC.

- 11.10.35 Traffic to the Central Hub HAGI during operation will be minimal with only occasional maintenance vehicles. Consideration of this will need to be made for any design requirements.
- 11.10.36 There will be permanent access required to other elements of above ground infrastructure including other HAGI sites and Block Valves. The access designs of these will be identified as the design evolves and it is anticipated that the traffic in the operational phase would be minimal to these sites.
- 11.10.37 It is anticipated that these accesses will be designed to relevant DMRB design standards including for junction layout and visibility standards and this will be discussed with the relevant local highways authorities post Section 42 Consultation.

Assessment year traffic growth

- 11.10.38 **Table 11.33** below sets out the 2025 and 2026 traffic flows per receptor based on the traffic growth methodology set out in **Section 11.6**.

Sensitivity of receptor

- 11.10.39 Given the potential receptors described in **Section 11.9**, **Table 11.33** identifies the sensitivity of highway link and the GEART (IEA, 1993) rule that applies for the Study Area.

Table 11.33 Highways Links Receptor Sensitivity

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
RW1	A5117	The link is a two-way single carriageway A Road with properties set back from the road and a segregated footway on one side of the road.	Low	1
RW2	A557	The link is a two-way single carriageway A Road with industrial properties set back from the road and a footway on only one side of the carriageway.	Low	1
RW3	A56	The link is a two-way single carriageway as it crosses Weaver Bridge with footways on both sides of the road.	Low	1
RW4	A533	The link is a two-way single carriageway in a rural area with only intermittent footway on one side of the road.	Negligible	1

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
RW5	A533	The link is a two-way single carriageway in a partially rural and partially urban area (Preston Brook) with properties fronting the carriageway and footways on one or both sides of the road in the urban area.	Medium	2
RW6	A56	The link is a two-way single carriageway that runs through the village of Helsby which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RW7	A557	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RW8	A557	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RW9	A56	The link is a two-way single carriageway that runs through the village of Sutton Weaver which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	Medium	2
RW10	A56	The link is a two-way single carriageway that runs through the village of Frodsham which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RW11	A5117	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RN1	A56	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RN2	A56	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
RN3	A57	The link is a two-way single carriageway that runs through the Woolston area of Warrington which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RN4	A50	The link is a two-way single carriageway that runs through the Latchford East area of Warrington which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RN5	A562	The link is a two-way dual carriageway that runs through the Penketh area of Warrington which has commercial and residential set back from the carriageway and footways on both sides of the road.	Medium	2
RN6	A562	The link is a two-way dual carriageway that runs through the Penketh area of Warrington which has commercial and residential set back from the carriageway and footways on both sides of the road.	Medium	2
RN7	A5080	The link is a two-way single carriageway in a rural area with only intermittent footway on one side of the road.	Low	1
RN8	A557	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RN9	A57	The link is a two-way single carriageway in a rural area with properties set back from the carriageway and footways on one or both sides of the road.	Low	1
RN10	A570	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RN11	A570	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
RN12	A570	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
RN13	Higher Lane	The link is a two-way single carriageway in a rural area with no footways.	Negligible	1
RN14	B5204	The link is a two-way single carriageway that runs through the Sutton Heath area of St Helens which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RN15	Runcorn Road	The link is a two-way single carriageway in a rural area with only intermittent footway on one side of the road.	Low	1
RN16	Liverpool Road	The link is a two-way single carriageway that runs through the Sankey Bridges area of Warrington which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RE1	A49	The link is a two-way single carriageway A Road in a rural area with no footways.	Low	1
RE2	A559	The link is a two-way single carriageway A Road in a rural area with intermittent footways.	Medium	1
RE3	A49	The link is a two-way single carriageway A Road in a rural area with no footways.	Low	1
RE4	Arley Road	The link is a two-way single carriageway that runs through the settlement of Appleton Thorn which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RE5	A50	The link is a two-way single carriageway A Road in a rural area with intermittent footways.	Low	1
RE6	A56	The link is a two-way single carriageway that runs through the south western	High	2

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
		section of Altrincham which has commercial and residential properties fronting the carriageway and footways on both sides of the road.		
RE7	A56	The link is a two-way single carriageway A Road in a rural area with intermittent footways.	Negligible	1
RE8	A6144	The link is a two-way single carriageway A Road in a rural/urban area with few properties set back from the carriageway with intermittent footways.	Low	2
RE9	Woodhouse Lane	The link is a two-way single carriageway that runs through the village of Dunham Massey and past the Dunham Massey National Trust property and park which has residential properties fronting the carriageway and footways on both sides of the road.	High	2
RE10	A6114	The link is a two-way single carriageway on the fringe of Partington village which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
RE11	A6114	The link is a two-way single carriageway on the fringe of Partington village which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	1
SR1	A49	The link is a two-way single carriageway A Road in a rural area with properties set back from the carriageway.	Low	1
SR2	A49	The link is a two-way single carriageway A Road in a rural area which forms part of a bypass of Weaverham and has no properties fronting the carriageway.	Negligible	1
SR3	B5153	The link is a two-way single carriageway that runs through Weaverham which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
SR4	A556	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
SR5	A533	The link is a two-way single carriageway A Road in a rural area with a minimal amount of properties set back from the carriageway.	Negligible	1
SR6	A530	The link is a two-way single carriageway A Road in a rural area with a minimal amount of properties set back from the carriageway.	Negligible	1
SR7	A556	The link is a dual carriageway with properties set back from the carriageway.	Negligible	1
SR8	A533	The link is a two-way single carriageway A Road in a rural area with a minimal amount of properties set back from the carriageway.	Negligible	1
SR9	Marbury Road	The link is a two-way single carriageway that runs through the Anderton area of Northwich which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
SR10	A533	The link is a two-way single carriageway that runs through the Barton area of Northwich which has commercial and residential properties fronting the carriageway and footways on both sides of the road.	High	2
SRNR1	M56	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR2	M62	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
SRNR3	M6	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR4	M56	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR5	M60	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR6	M60	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR7	M62	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR8	M56	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR9	M6	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR10	A556	The link is a doula carriageway road that is part of the SRN connecting the M6 and M56 with no footways and direct frontage access.	Negligible	1
SRNR11	M6	The link is part of the national motorway network restricted to pedestrian movement and with no direct frontage access.	Negligible	1
SRNR12	M56	The link is part of the national motorway network restricted to pedestrian	Negligible	1

Link No	Highway Link	Comments	Receptor sensitivity	GEART rule
		movement and with no direct frontage access.		

Magnitude of change

12.1.7 **Table 11.34** 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 day at each highways link is predicted to occur for total 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.

12.1.8 **Table 11.34**, highways links percentage impacts identified that exceed the GEART (IEA,1993) assessment thresholds based on the highways link sensitivity **Table 11.34** are set out in red.

Table 11.34 Magnitude of Change

Link	Future year base traffic (2025/26)		Peak week traffic (per day)		Magnitude of change percentage impact	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
RW1	14221	332	194	0	1%	0.0%
RW2	12751	344	320	110	2.5%	31.9%
RW3	20218	237	268	132	1.3%	55.6%
RW4	8250	353	455	132	5.5%	37.3%
RW5	8286	446	112	30	1.4%	6.8%
RW6	12054	171	144	0	1.2%	0.0%
RW7	48134	484	328	50	0.7%	10.3%
RW8	34410	4025	306	50	0.9%	1.2%
RW9	5606	109	112	30	2.0%	27.8%

Link	Future year base traffic (2025/26)		Peak week traffic (per day)		Magnitude of change percentage impact	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
RW10	19126	456	80	0	0.4%	0.0%
RW11	11152	1188	341	214	3.1%	18.0%
RN1	28258	1959	613	242	2.2%	12.3%
RN2	28531	502	216	86	0.8%	17.1%
RN3	16398	535	178	50	1.1%	9.3%
RN4	24218	2822	184	50	0.8%	1.8%
RN5	19990	695	244	122	1.2%	17.5%
RN6	12684	396	236	100	1.9%	25.2%
RN7	5484	585	230	122	4.2%	20.9%
RN8	23902	2487	234	126	1.0%	5.1%
RN9	14036	474	324	66	2.3%	13.9%
RN10	26794	1244	374	220	1.4%	17.7%
RN11	26522	1204	234	68	0.9%	5.6%
RN12	32008	962	166	30	0.5%	3.1%
RN13	580	31	442	166	76.2%	535.7%
RN14	11867	264	244	84	2.1%	31.8%
RN15	2815	222	256	106	9.1%	47.8%
RN16	8432	441	236	122	2.8%	27.7%
RE1	14483	1206	370	140	2.6%	11.6%
RE2	8356	306	264	158	3.2%	51.5%
RE3	14483	1206	370	140	2.6%	11.6%
RE4	1331	29	346	230	26.0%	791.9%
RE5	8652	274	290	156	3.4%	56.9%
RE6	16344	643	52	0	0.3%	0.0%

Link	Future year base traffic (2025/26)		Peak week traffic (per day)		Magnitude of change percentage impact	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
RE7	10640	222	438	212	4.1%	95.7%
RE8	15426	1129	508	220	3.3%	19.5%
RE9	3460	119	62	0	1.8%	0.0%
RE10	13722	166	294	158	2.1%	95.4%
RE11	7592	134	248	158	3.3%	117.5%
SR1	18811	1134	478	226	2.5%	19.9%
SR2	13600	1122	406	174	3.0%	15.5%
SR3	3899	71	322	66	8.3%	93.0%
SR4	18519	781	362	190	2.0%	24.3%
SR5	23130	1209	272	126	1.2%	10.4%
SR6	15414	711	484	162	3.1%	22.8%
SR7	30970	2116	344	262	1.1%	12.4%
SR8	8288	315	106	50	1.3%	15.9%
SR9	4323	74	286	30	6.6%	40.4%
SR10	9179	395	102	50	1.1%	12.6%
SRNR1	119741	12651	287	106	0.2%	0.8%
SRNR2	111114	13541	206	136	0.2%	1.0%
SRNR3	142832	15022	356	292	0.2%	1.9%
SRNR4	92473	5081	173	106	0.2%	2.1%
SRNR5	112371	7634	282	110	0.3%	1.4%
SRNR6	146588	7059	242	110	0.2%	1.6%
SRNR7	137205	15745	130	114	0.1%	0.7%
SRNR8	145978	9745	163	105	0.1%	1.1%
SRNR9	106172	20387	147	103	0.1%	0.5%

Link	Future year base traffic (2025/26)		Peak week traffic (per day)		Magnitude of change percentage impact	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
SRNR10	51919	4159	72	56	0.1%	1.4%
SRNR11	121905	19021	111	98	0.1%	0.5%
SRNR12	124585	14231	492	370	0.4%	2.6%

Significance of residual effect

- 11.10.40 **Table 11.33** 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 11.34** 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.
- 11.10.41 Based on the results presented in **Table 11.34** and the defined sensitivities set out in **Table 11.33**, there are 19 highway links where the percentage change in total vehicle or HGVs results in the need for a further assessment.
- 11.10.42 The 19 links that require detailed environmental assessment are as follows:
- RW2 – A557 between A56 and Halton Station Road;
 - RW3 – A56 at the River Weaver Bridge;
 - RW4 – A533 between A49 and Higher Lane;
 - RW9 – A56 between Station Road and A533;
 - RN5 – A562 between A5080 and Tavistock Road;
 - RN6 – A562 between A5080 and Mowcroft Lane;
 - RN13 – Higher Lane between A533 and A49;
 - RN14 – B5204 between A570 and Rainhill Road;
 - RN15 – Runcorn Road between A56 and Moore;
 - RN16 – Liverpool Road at Sanky Bridge;
 - RE2 – A559 between M56 J10 and Stockley Lane;
 - RE4 – Arley Road between B5356 and Reedgate Lane;
 - RE5 – A50 between West Lane and Crabtree Lane;
 - RE7 – A56 between M56 J7 and Bow Green Road;
 - RE10 – A6114 Central Partington;

- RE11 – A6114 Southern Partington;
- SR3 – B5153 West of Weaverham;
- SR9 – Marbury Road between Cogshall Lane and Budworth Lane; and
- SR10 – A533 Barton, Northwich.

11.10.43 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.

Highway Link RW2 – A557 between A56 and Halton Station Road;

11.10.44 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 31.9% over the 24-hour period (an increase of 110 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Low.

11.10.45 **Table 11.35** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.35 Highway Link RW2 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	A557 is a distributor road between the A56 and M56 and is designed to accommodate moderate traffic flows and HGVs.	Low	Minor (Not Significant)
	With an increase of 110 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 11 additional HGVs per hour or one HGV every 5 minutes.		
	The change in HGVs on the link is between 30-60% and based on Table 11.27 the magnitude of change is low. The sensitivity of the link in Table 11.28 is low, therefore the significance of effect on severance is Minor (not significant)		
Driver Delay	The increase in traffic on the peak worst day peak of the development construction phase is 11 additional HGV per hour (or one HGV approximately every 5 minutes). The traffic increase is low and 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	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	significance of effect on driver delay is therefore negligible (not significant).		
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	A557 between A56 and Halton Station Road has pedestrian footways on one side of the carriageway and no dedicated pedestrian crossings on the link. However, the traffic increase as a result of the Project will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on severance is Negligible (not significant)	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A537 has an accident rate of 0.13 per million vehicle kilometres which is well below the national average accident rate for an urban A Road (0.42). With only an additional HGV required every 5 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 (not significant).	Negligible	Negligible (Not Significant)

11.10.46 Based on **Table 11.35** the overall significance of residual effects at Highways Link RW2 and associated receptors is considered to be Minor (Not significant) in EIA terms.

Highways Link RW3 – A56 at the River Weaver Bridge

11.10.47 As set out in **Table 11.33**, the total HGV flows are predicted to increase on this link by 55.6% over the 24-hour period (an increase of 132 HGVs). Based on **Table 11.34** the sensitivity of the highways link has been identified as Low.

11.10.48 **Table 11.36** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.36 Highway Link RW3– Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A56 is a distributor road providing a link between the A557 and Frodsham and is designed to accommodate moderate traffic flows and HGVs. With an increase of 132 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 13 additional HGVs per hour or approximately one HGV every 5 minutes. The change in HGVs on the link is between 31-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is low, therefore the significance of effect on severance is Minor (not significant)	Low	Minor (Not Significant)
Driver Delay	The increase in traffic is minor and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A56 has footways on both sides of the road but has no clear pedestrian desire lines and no dedicated pedestrian crossings on the link. An additional HGV every 5 minutes on the link will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is negligible (not significant)	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A56 between the A557 and B5152 has an accident rate of 0.24 per million vehicle kilometres which is well below the national average accident rate for an urban A Road (0.42). This has been used	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	as a comparison as a majority of the accidents on the link have occurred in Frodsham. A more detailed review of accidents between the A557 and access WH-12 indicates that only two accidents occurred across the 5 years of the accident review time period. No Project HGV movements are proposed west of Access WH-12. With only an additional HGV required every 5 minutes in the construction phase peak as a result of the Project the magnitude of change is considered to be negligible. The significance of effect on accidents and safety is therefore negligible (not significant).		

11.10.49 Based on **Table 11.36** the overall significance of residual effects at Highways Link RW3 and associated receptors is considered to be Minor (Not significant) in EIA terms.

RW4 – A533 between A49 and Higher Lane

- 11.10.50 As set out in **Table 11.33**, the total HGV flows are predicted to increase on this link by 37.3% over the 24-hour period (an increase of 132 HGVs). Based on **Table 11.34** the sensitivity of the highways link has been identified as Negligible.
- 11.10.51 **Table 11.37** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.37 Highway Link RW4 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A533 is a rural distributor road between Preston Brook and the A49 designed to accommodate moderate traffic flows and HGVs. With an increase of 132 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will	Low	Minor (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	result in approximately 13 additional HGVs per hour or approximately one HGV every 5 minutes. The change in HGVs on the link is between 31-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is low, therefore the significance of effect on severance is minor (not significant).		
Driver Delay	The increase in traffic is low and 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 (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A533 only has occasional footways between Preston Brook and the A49 and no clear pedestrian desire lines. In the peak of the construction phase an additional HGV every 5 minutes on the link will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is negligible (not significant)	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A533 between Preston Brook and the A49 has an accident rate of 0.13 per million vehicle kilometres which is just above the national average accident rate for a rural A Road (0.11). It was noted in Section 11.6 that the A533 rate is only 0.02 higher than the national average which would not be perceptively different and with daily variations would be around the national average. With only an additional HGV required every 5 minutes in the construction phase peak as a result of the Project the magnitude of	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	change is therefore negligible. The significance of effect on accidents and safety is therefore negligible (not significant).		

11.10.52 Based on **Table 11.37** the overall significance of residual effects at Highways Link RW4 and associated receptors is considered to be Minor (Not significant) in EIA terms.

Highways Link RW9 – A56 between Station Road and A533

11.10.53 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 27.8% over the 24-hour period (an increase of 30 HGVs). Based on **Table 11.33** the sensitivity of the highways link has been identified as Medium.

11.10.54 **Table 11.38** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.38 Highway Link RW9 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A56 is a rural distributor road between Preston Brook and the A533 and the A577 through Sutton Weaver and is designed to accommodate moderate traffic flows and HGVs. With an increase of 30 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately three additional HGVs per hour or approximately one HGV every 20 minutes. The change in HGVs on the link is between 0-30% and based on Table 11.27 the magnitude of change is negligible. The sensitivity of the link in Table 11.28 is medium, therefore the significance of effect on severance is negligible (not significant).	Negligible	Minor (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
Driver Delay	The increase in traffic will not result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A56 only has footpaths on both sides of the carriageway in Sutton Weaver, with a church on the north side of the carriageway. An additional HGV every 20 minutes will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A56 between A533 and A557 has an accident rate of 0.57 per million vehicle kilometres which is above the national average accident rate for a rural A Road (0.11) and urban A road (0.42). It was noted in Section 11.6 that the A533 rate is only 0.02 higher than the national average which would not be perceptively different and with daily variations would be around the national average. In Section 11.6 it was noted that the A56 between A557 and A533 is a route that is partially a rural A road and partially an urban A road (though Sutton Weaver). The results on this link are distorted by a cluster of eight accidents at the junction of Chester Road and Halton Station Road. These are related to the junction and the turning movements there rather than as a function of the design of the link. With only an additional HGV required every 20 minutes in the construction phase peak as a result of the Project the magnitude of change is negligible. The significance of	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	effect on accidents and safety is therefore negligible (not significant).		

11.10.55 Based on **Table 11.38** the overall significance of residual effects at Highways Link RW4 and associated receptors is considered Minor (Not significant) in EIA terms.

Highways Link RN5 – A562 between A5080 and Tavistock Road

11.10.56 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 17.5% over the 24-hour period (an increase of 122 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Medium.

11.10.57 **Table 11.39** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.39 Highway Link RN5 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A562 between the A5080 and Tavistock Road is part of a wider section of the A562 between the A5080 and A57 and is one of the main A road approaches into Warrington from the west, which is dual carriageway along its length. The road is urban in nature running through a suburban area (Penketh) of residential and commercial properties set back from the carriageway. 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 122 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately 12 additional HGVs per hour or approximately one HGV every 5 minutes. The change in HGVs on the link is between 0-30% and based on Table 11.27 the magnitude of change is negligible. The	Negligible	Minor (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	sensitivity of the link in Table 11.28 is Medium, therefore the significance of effect on severance is negligible (not significant).		
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A562 has footpaths on both sides of the carriageway in Penketh and is a high traffic pedestrian area with commercial and education properties providing pedestrian desire lines. The road has numerous formal and informal pedestrian crossings at key junctions and along the link. The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A562 between the A5080 and Liverpool Road has an accident rate of 0.18 per million vehicle kilometres which is below the national average accident rate for an urban A road (0.42). With only an additional HGV required every 5 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 (not significant).	Negligible	Negligible (Not Significant)

11.10.58 Based on **Table 11.39** the overall significance of residual effects at Highways Link RN5 and associated receptors is considered to be Minor (Not significant) in EIA terms.

Highways Link RN6 – A562 between A5080 and Mowcroft Lane

- 11.10.59 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 25.2% over the 24-hour period (an increase of 100 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Medium.
- 11.10.60 **Table 11.40** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.40 Highway Link RN6 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A562 the A5080 and Mowcroft Lane is part of a wider section of the A562 between the Mowcroft Lane and the A57. It is one of the main A road approaches into Warrington from the west and is dual carriageway along its length. The road is urban in nature running through a suburban area (Penketh) of residential and commercial properties set back from the carriageway. The highways link is key A road in the local area and is designed to accommodate high traffic flows and HGVs. With an increase of 100 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 10 additional HGVs per hour or approximately one HGV every 6 minutes. The change in HGVs on the link is between 0-30% and based on Table 11.27 the magnitude of change is Negligible. The sensitivity of the link in Table 11.28 is Medium, therefore the significance of effect on severance is therefore Negligible (not significant).	Negligible	Minor (Not Significant)
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A562 between the A5080 and Mowcroft Lane has footpaths on both sides of the carriageway in Penketh and crossings of the road at the A5080 junction. The low increase in traffic will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is Negligible (not significant).		
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A562 between the A5080 and Liverpool Road has an accident rate of 0.10 per million vehicle kilometres which is below the national average accident rate for an urban A road (0.42). 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 negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.61 Based on **Table 11.40** the overall significance of residual effects at Highways Link RN6 and associated receptors is considered to be Minor (Not significant) in EIA terms.

Highways Link RN13 – Higher Lane between A533 and A49

11.10.62 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 535.7% and also 76.2% for total vehicles over the 24-hour period (an increase of 166 HGVs and 442 total vehicles). Based on **Table 11.33**, the sensitivity of the highways link has been identified as negligible.

11.10.63 **Table 11.41** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.41 Highway Link RN13 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Higher Lane (including Grimditch Lane) between Marsh Lane and the A49 is a good standard two lane single carriageway rural road with limited direct accesses to the road to farms and occasional residential properties. It has light traffic and is designed	High	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	to accommodate higher traffic flows and HGVs. With an increase of 166 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately 17 additional HGVs per hour or approximately one HGV every 4 minutes. The change in HGVs on the link is over 91% and based on Table 11.27 the magnitude of change is High. The sensitivity of the link in Table 11.28 is Negligible, therefore the significance of effect on severance is Negligible (not significant).		
Driver Delay	The low baseline flows compared to the increase in traffic would not result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is Negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Higher Lane is a rural road with no footways or pedestrian movements. The significance of effect on pedestrian amenity, delay and fear and intimidation is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates no accidents recorded on Higher Lane or Grimsditch Lane. The significance of effect on accidents and safety is Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.64 Based on **Table 11.41** the overall significance of residual effects at Highways Link RN6 and associated receptors is considered to be Negligible (Not significant) in EIA terms.

Highways Link RN14 – B5204 between A570 and Rainhill Road

- 11.10.65 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 31.8% over the 24-hour period (an increase of 84 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.
- 11.10.66 **Table 11.42** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.42 Highway Link RN14 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The B5204 between the A570 and Rainhill Road is residential B road that passes through Sutton Heath in St Helens. The road has frontages of houses, a school, commercial and industrial properties as well as footways on both sides of the road with formal and informal crossings. With an increase of 85 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately eight additional HGVs per hour or approximately one HGV every 7 minutes. The change in HGVs on the link is between 31%-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link is identified in Table 11.28 as High, therefore the significance of effect on severance is Moderate (significant).	High	Moderate (Significant)
Driver Delay	The increase in traffic is low and 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 (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A5204 between the A570 and Rainhill Road has footpaths on both sides of the carriageway in Sutton Heath and dedicated crossing facilities outside of St John Vianney Catholic Primary School.	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is therefore Negligible (not significant).		
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the B5204 between Stratton Drive and A570 has an accident rate of 0.04 per million vehicle kilometres which is below the national average accident rate for an urban other road (0.33). With an additional HGV required every 7 minutes in the construction phase peak as a result of the Project the magnitude of change is negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.67 Based on Table **11.42** the overall significance of residual effects at Highways Link RN14 and associated receptors is considered to be Moderate (Significant) in EIA terms.

Highways Link RN15 – Runcorn Road between A56 and Moore

11.10.68 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 47.8% over the 24-hour period (an increase of 106 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Low.

11.10.69 **Table 11.43** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.43 Highway Link RN15 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Runcorn Road between A56 and Moore is a two lane single carriageway rural road with limited direct access to the road and limited properties set back from the carriageway. With an increase of 106 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 10 additional HGVs per hour or approximately one HGV every 6 minutes. The change in HGVs on the link is between 31-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is Low, therefore the significance of effect on severance is therefore Negligible (not significant).	Low	Minor (Not Significant)
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Runcorn Road between A56 and Moore has footpaths on only the south side of the carriageway and no clear pedestrian desire lines to cross the road. The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible. Therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that Runcorn Road between the A56 and Holly Hedge Lane (Moore) did not record a single accident in the assessment time period.	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	With an additional HGV required every 6 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).		

11.10.70 Based on **Table 11.43** the overall significance of residual effects at Highways Link RN15 and associated receptors is considered to be Minor (Not Significant) in EIA terms.

Highways Link RN16 – Liverpool Road at Sankey Bridges

11.10.71 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 27.7% over the 24-hour period (an increase of 122 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.72 **Table 11.44** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.44 Highway Link RN16 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Liverpool Road through Sankey Bridges is a residential road that passes through a built up area in the south west of Warrington with terraced housing as well as commercial and industrial properties fronting on to the carriageway. With an increase of 122 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 12 additional HGVs per hour or approximately one HGV every 5 minutes. The change in HGVs on the link is between 0-30% and based on Table 11.27 the magnitude of change is Negligible. The sensitivity of the link in Table 11.28 is High,	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	therefore the significance of effect on severance is Negligible (Not significant).		
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is Negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Liverpool Road in Sankey Bridges has footways on both sides of the road and dedicated formal and informal pedestrian crossings along the link and at local junctions with other roads. The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible therefore the significance of effect on pedestrian amenity, delay and fear and intimidation is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the Liverpool Road between A562 and Barnard Street has an accident rate of 0.28 per million vehicle kilometres which is below the national average accident rate for an urban other road (0.33). With an additional HGV required every 5 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.73 Based on **Table 11.44** the overall significance of residual effects at Highways Link RN16 and associated receptors is considered to be Negligible (Not Significant) in EIA terms.

Highways Link RE2 – A559 between M56 J10 and Stockley Lane

11.10.74 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 51.5% over the 24 hour period (an increase of 158 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Medium.

11.10.75 **Table 11.45** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.45 Highway Link RE2 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A559 between M56 J10 and Stockley Lane is a mostly rural road, however the northern section of this route section of road is in a village setting (Lower Stretton) with houses and a public house on the side of the carriageway. The road reduces in width in this section and is provided with a chicane to allow for safer flow of traffic with northbound traffic having priority. With an increase of 158 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately 16 additional HGVs per hour or approximately one HGV every 4 minutes. The change in HGVs on the link is between 31-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is Medium, therefore the significance of effect on severance is therefore Minor (Not significant).	Low	Minor (Not Significant)
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A559 between M56 J10 and Stockley Lane has footways on the east side of the road but with no dedicated crossings. It is not considered that the footways are well used outside of the village of Lower Stretton. The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	negligible and the significance of effect on severance is therefore Negligible (not significant).		
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A559 between M56 and Lake Lane/Knustford Road has an accident rate of 0.22 per million vehicle kilometres which is above the national average accident rate for a rural A road (0.11). A review of the eight accidents on this 2km section of road indicates two clusters of accidents. Four accidents are noted at the A559/Birch Tree Lane/Bentley's Farm Lane junction. This junction is not proposed to be used for turning movements on the Project. With this cluster of accidents likely related to turning movements at a junction with a minor road it is not considered the link itself has a significant accident issue. With an additional HGV required every 4 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 (not significant).	Negligible	Negligible (Not Significant)

11.10.76 Based on **Table 11.45** the overall significance of residual effects at Highways Link RE2 and associated receptors is considered to be Minor (Not Significant) in EIA terms.

Highways Link RE4 – Arley Road between B5356 and Reedgate Lane

11.10.77 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 791.9% over the 24 hour period (an increase of 230 HGVs) and by 26% for total vehicles (an increase of 346). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.78 **Table 11.46** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.46 Highway Link RE4 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Arley Road is a partially urban and partially rural road that runs between the B5356 and Arley. The road has been defined as having high sensitivity as the northern section of the route runs through the settlement of Appleton Thorn for approximately 580m. In this section the road has frontages of houses, a school, commercial and industrial properties as well as footways on both sides of the road with formal and informal crossings and on-street parking. With an increase of 230 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 23 additional HGVs per hour or approximately one HGV every 3 minutes. The change in HGVs on the link is over 90% and based on Table 11.27 the magnitude of change is High. The sensitivity of the link in Table 11.28 is High, therefore the significance of effect on severance is therefore Major (significant).	High	Major (Significant)
Driver Delay	The increase in traffic 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 (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Arley Road in Appleton Thorn has footpaths on the east side of the carriageway but does not have any dedicated crossings of the road, even near Appleton Thorn School. In the peak of the construction phase it is anticipated that an additional HGV will be generated every 2 minutes on the link and based on professional judgement it is considered that this may be perceptible to pedestrians wishing to cross the road at	Medium	Major (Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	peak school times. The magnitude of change is Medium and therefore the significance of effect on severance is Major (Significant).		
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the Arley Road/New Road between B5356 and Caldwell's Gate Lane has an accident rate of 0.21 per million vehicle kilometres which is just above the national average accident rate for a rural other road (0.19). It should be noted that for this link the accident rate is only 0.02 higher than the national average which would not be perceptively different and with daily variations would be around the national average. The significance of effect on accidents and safety is Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.79 Based on **Table 11.46** the overall significance of residual effects at Highways Link RE4 and associated receptors is considered to be Major (Significant) in EIA terms.

Highways Link RE5 – A50 between West Lane and Crabtree Lane

11.10.80 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 56.9% over the 24 hour period (an increase of 156 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Low.

11.10.81 **Table 11.47** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.47 Highway Link RE5 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A50 between West Lane and Crabtree Lane is a two lane single carriageway rural road with limited direct access to the road and limited properties set back from the carriageway.	Low	Minor (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	With an increase of 156 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 16 additional HGVs per hour or approximately one HGV every 4 minutes. The change in HGVs on the link is between 31-60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is Low, the significance of effect on severance is therefore Minor (not significant)		
Driver Delay	The increase in traffic 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 negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A50 between the M6 and High Legh has footpaths on only the northeast side of the carriageway and no clear pedestrian desire lines to cross the road. The low traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on severance is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that A50 between the M6 J20 and High Legh has an accident rate of 0.07 per million vehicle kilometres which is just below the national average accident rate for a rural A road (0.11). With an additional HGV required every 4 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

- 11.10.82 Based on **Table 11.47** the overall significance of residual effects at Highways Link RE5 and associated receptors is considered to be Minor (Not Significant) in EIA terms.

Highways Link RE7 – A56 between M56 J7 and Bow Green Road

- 11.10.83 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 95.7% over the 24-hour period (an increase of 212 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as Negligible.
- 11.10.84 **Table 11.48** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.48 Highway Link RE7 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A56 between M56 J7 and Bow Green Road is a two lane single carriageway rural road with limited direct access to the road and limited properties set back from the carriageway. With an increase of 156 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 21 additional HGVs per hour or approximately one HGV every 3 minutes. The change in HGVs on the link is over 90% and based on Table 11.27 the magnitude of change is High. The sensitivity of the link in Table 11.28 is Negligible, therefore the significance of effect on severance is Negligible (not significant).	High	Negligible (Not Significant)
Driver Delay	The increase in traffic 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 Negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian	The A56 between the M56 J7 and Bow Green Road has either no or intermittent footpaths on one side of the carriageway	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
Delay and Fear and Intimidation	and no clear pedestrian desire lines to cross the road. The traffic increase will not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible and therefore the significance of effect on severance is Negligible (not significant).		
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that A50 between the M56 J7 and Bow Green Road has an accident rate of 0.12 per million vehicle kilometres which is just above the national average accident rate for a rural A road (0.11). It should be noted that for this link accident rate is only 0.01 higher than the national average which would not be perceptively different and with daily variations would be around the national average. With an additional HGV required every 3 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.85 Based on **Table 11.48** the overall significance of residual effects at Highways Link RE7 and associated receptors is considered to be Negligible (Not Significant) in EIA terms.

Highways Link RE10 – A6114 Central Partington

11.10.86 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 95.4% over the 24-hour period (an increase of 158 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.87 **Table 11.49** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.49 Highway Link R10 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A6114 is an A road that runs through a built up setting in the settlement of Partington. The road has footways on both sides of the road, pedestrian crossing numerous commercial, residential and community properties on the side of the carriageway. With an increase of 158 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 16 additional HGVs per hour or approximately one HGV every 4 minutes. The change in HGVs on the link is over 90% and based on Table 11.27 the magnitude of change is High. The sensitivity of the link in Table 11.28 is High, therefore the significance of effect on severance is Major (significant).	High	Major (Significant)
Driver Delay	The increase in traffic 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 negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A6114 in central Partington has footpaths on both sides of the carriageway, several pedestrian crossings and numerous notable pedestrian desire lines. In the peak of the construction phase an additional HGV every 4 minutes would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on severance is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A6144 between Moss Lane and the B5158 has an accident rate of	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	0.009 per million vehicle kilometres which is just above the national average accident rate for an urban A Road (0.42). With an additional vehicle required every 4 minutes in the construction phase peak as a result of the Project the magnitude of change is negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).		

11.10.88 Based on **Table 11.49** the overall significance of residual effects at Highways Link RE10 and associated receptors is considered to be Major (Significant) in EIA terms.

Highways Link RE11 – A6114 Southern Partington

- 11.10.89 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 117.5% over the 24 hour period (an increase of 158 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.
- 11.10.90 **Table 11.50** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.50 Highway Link R11 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A6114 is an A road that runs through a built up setting in the settlement of Partington. The road has footways on both sides of the road, pedestrian crossing numerous commercial, residential and community properties on the side of the carriageway. In the southern section of Partington the route also passes along the frontage of the Broadoak School and the Fuse community facility. With an increase of 158 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately 16 additional HGVs	High	Major (Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	per hour or approximately one HGV every 4 minutes. The change in HGVs on the link is over 90% and based on Table 11.27 the magnitude of change is High. The sensitivity of the link in Table 11.28 is High, therefore the significance of effect on severance is Major (significant).		
Driver Delay	The increase in traffic 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 negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The A6114 in the southern section in Partington has footpaths on both sides of the carriageway, several pedestrian crossings and numerous notable pedestrian desire lines. There is a signalised crossing on the road outside Broadoak School. An additional HGV will be generated every 4 minutes may be perceptible to pedestrians wishing to cross the road at peak school times and the magnitude of change is medium and therefore the significance of effect on severance is Major (significant).	Medium	Major (Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A6144 between Moss Lane and B5158 has an accident rate of 0.009 per million vehicle kilometres which is just above the national average accident rate for an urban A Road (0.42). With an additional vehicle required every 4 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.91 Based on **Table 11.50** the overall significance of residual effects at Highways Link RE10 and associated receptors is therefore considered to be Major (Significant) in EIA terms.

Highways Link SR3 – B5153 West of Weaverham

11.10.92 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 93% over the 24-hour period (an increase of 66 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.93 **Table 11.51** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.51 Highway Link SR3 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The B5153 is a partially urban (Weaverham) and rural route which is required to be used for 470m on the Project. The section of the B5153 in Weaverham is bound by residential properties, footways on both sides of the road and on street parking restricting the flow of traffic. The change in HGVs on the link is over 90% and based on Table 11.27 the magnitude of change is High. However, for a robust assessment of the link the temporary nature of the HGV deliveries and the numbers of deliveries should be taken into account. It is noted that during the peak day of the programme only an increase of 66 HGVs per day across the 10 hour working day are anticipated. This will result in approximately 7 additional HGVs per hour or approximately one HGV every 9 minutes. Another key factor for consideration on this route is the overall time required for works that would use this road for access. The major construction works in this section would occur only over a 28 day programme between day 471 (02/04/2026) and 498 (04/05/2026). Figure 11.22: Construction Traffic Across Programme on B5153	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	Station Road shows a graph of the anticipated traffic movements across this month showing a gradual build up to the peak day (486) and then a drop off to the end of the works. Considering the above the overall magnitude of change can be considered to be negligible and the significance of effect on severance is therefore Negligible (not significant).		
Driver Delay	The increase in traffic 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 negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	The B5153 in Weaverham has footpaths on both sides of the carriageway but no pedestrian crossings. An additional HGV every 9 minutes would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and the significance of effect on severance is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the B5153 Station Road in the Study Area did not record accidents in the assessment time period. With only an additional vehicle required every 9 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.94 Based on **Table 11.51** the overall significance of residual effects at Highways Link SR3 and associated receptors is considered to be Negligible (Not Significant) in EIA terms.

Highways Link SR9 - Marbury Road between Cogshall Lane and Budworth Lane

11.10.95 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 40.4% over the 24 hour period (an increase of 30 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.96 **Table 11.52** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.52 Highway Link SR9 – Assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Marbury Road between Cogshall Lane and Budworth Lane that runs through a built up in the settlement of Anderton (Northwich). The road has footways on both sides of the road and residential and community properties on the side of the carriageway. The road also runs through a tourist area around the Anderton Boat Marina and lift. With an increase of 30 HGVs per day across the 10 hour working day for the peak day of the construction programme, this will result in approximately 3 additional HGVs per hour or approximately one HGV every 20 minutes. The change in HGVs on the link between 31% and 60% and based on Table 11.27 the magnitude of change is Low. The sensitivity of the link in Table 11.28 is High, therefore the significance of effect on severance is Moderate (significant).	High	Moderate (Significant)
Driver Delay	The increase in traffic is low and unlikely to result in any delay to drivers on the highway link or local junctions and on this basis the magnitude of change is negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	Marbury Road has footpaths on both sides of the carriageway but no pedestrian crossings. An additional HGV every 20 minutes would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is negligible and therefore the significance of effect on severance is Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the Scoot Hill/New Road/Marbury Road has an accident rate of 0.34 per million vehicle kilometres which is just above the national average accident rate for an urban other Road (0.33). It should be noted that for this link accident rate is only 0.01 higher than the national average, which would not be perceptively different and with daily variations would be around the national average. With only an additional vehicle required every 20 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)

11.10.97 Based on **Table 11.52** the overall significance of residual effects at Highways Link SR9 and associated receptors is considered to be Moderate (Significant) in EIA terms.

Highway Link SR10 – A533 Barton, Northwich.

11.10.98 As set out in **Table 11.34**, the total HGV flows are predicted to increase on this link by 12.6% over the 24-hour period (an increase of 50 HGVs). Based on **Table 11.33**, the sensitivity of the highways link has been identified as High.

11.10.99 **Table 11.53** sets out the assessment of the transport environmental effects at the highways link and the significance of effect.

Table 11.53 Highway Link SR10 – Assessment of transport environmental effect

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The A533 (Barton, Northwich) between Stone Heyes Lane and Winnington Lane is a road that runs through a built up area in the settlement of Barton (Northwich). The road has footways on both sides of the road and residential and community properties on the side of the carriageway. With an increase of 50 HGVs per day across the 10-hour working day for the peak day of the construction programme, this will result in approximately 5 additional HGVs per hour or approximately one HGV every 12 minutes. The change in HGVs on the link below 30% and based on Table 11.27 the magnitude of change is Negligible. The sensitivity of the link in Table 11.28 is High, therefore the significance of effect on severance is Negligible (not significant).	Negligible	Negligible (Not Significant)
Driver Delay	The increase in traffic 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 negligible. The significance of effect on driver delay is therefore Negligible (not significant).	Negligible	Negligible (Not Significant)
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation	A533 (Barton, Northwich) between Stone Heyes Lane and Winnington Lane has footpaths on both sides of the carriageway but no pedestrian crossings. An additional HGV every 12 minutes would not be perceptible to pedestrians wishing to cross the road and the magnitude of change is Negligible and therefore the significance of effect on Negligible (not significant).	Negligible	Negligible (Not Significant)
Accidents and Safety	Assessment undertaken in Section 11.6 indicates that the A533 between Stone Heyes Lane and Winnington Avenue has an accident rate of 0.23 per million vehicle kilometres which is below the national	Negligible	Negligible (Not Significant)

Effect	Comments	Magnitude of change	Significance of residual effect
	average accident rate for an urban A Road (0.42). With only an additional vehicle required every 12 minutes in the construction phase peak as a result of the Project the magnitude of change is Negligible. The significance of effect on accidents and safety is therefore Negligible (not significant).		

11.10.100 Based on **Table 11.53** the overall significance of residual effects at Highways Link SR10 and associated receptors is considered to be Negligible (Not Significant) in EIA terms.

11.11 Assessment of cumulative effects

11.11.1 A cumulative effects assessment (CEA) will be undertaken for the Project 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 **Section 3.9** of **Chapter 3**.

11.12 Preliminary significance conclusions

11.12.1 A summary of the results of the preliminary traffic and transport assessment is provided in **11.54**.

Table 11.54 Preliminary summary of significance of effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Severance - 19 Links where GEART Thresholds are triggered	RW2 - Low RW3 - Low RW4 - Negligible RW9 - Medium RN5 - Medium RN6 - Medium RN13 - Negligible RN14 - High RN15 - Low RN16 - High RE2 - Medium RE4 - High RE5 - Low RE7 - Negligible RE10 - High RE11 - High SR3 - High SR9 - High SR10 - High	RW9, RN5, RN6, RN16, SR3, SR10 – Negligible RW2, RW3, RW4, RN15, RE2, RE5, - Low RN13, RN14, RE2, RE4, RE7, RE10, RE11, SR9 - High	RW9, RN5, RN6, RN13, RN16, RE7, SR3, SR10– Negligible (Not Significant) RW2, RW3, RW4, RN15, RE2, RE5 – Minor (Not Significant) RN14, SR9 – Moderate (Significant) RE4, RE10, RE11 – Major (Significant)	The assessment has indicated in this scenario moderate impacts would be experienced on two of the links assessed, and major impacts on three of the links from the peak day construction traffic. These impacts would be temporary and only present during the construction phase. It is considered that additional mitigation will be required to address these moderate and major impacts on severance. The additional mitigation that will be considered is set out further in Section 11.13 .
Driver Delay - 19 Links where GEART Thresholds are triggered		All 19 Highways Links – Negligible	All 19 Highways Links – Negligible (Not Significant)	There will be a temporary increase in traffic during construction programme but the assessment of the peak day of traffic for the proposed project programme has indicated that the impacts on pedestrian

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
				amenity, delay and fear and intimidation would be Not Significant.
Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation – 19 Links where GEART Thresholds are triggered		RW2, RW3, RW4, RW9, RN5, RN6, RN13, RN14, RN15, RN16, RE2, RE5, RE7, RE10, SR3, SR9, SR10 – Negligible RE4, RE11 – Medium	RW2, RW3, RW4, RW9, RN5, RN6, RN13, RN14, RN15, RN16, RE2, RE5, RE7, RE10, SR3, SR9, SR10 – Negligible (Not Significant) RE4, RE11 – Major (Significant)	The assessment has indicated that for two of the links assessed in this scenario a major impact would be experienced from the peak day construction traffic. It is considered that additional mitigation will be required to address these major impacts on severance. The additional mitigation that will be considered is set out further in Section 11.13 .
Accidents and Safety - 19 Links where GEART Thresholds are triggered		All 19 Highways Links – Negligible	All 19 Highways Links – Negligible (Not Significant)	There will be a temporary increase in traffic during construction programme but the assessment of the peak day of traffic for the proposed project programme 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 11.10** 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 11.8.27** 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 (significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 11.10**.

11.13 Additional measures

- 11.13.1 The assessment set out above has concluded that it will be necessary to implement additional measures. These have been identified and would be in addition to those embedded measures outlined and assessed in **Section 11.7**. **Table 11.55** outlines how these additional measures will influence the traffic and transport Assessment.

Table 11.55 Summary of the additional environmental measures

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
Construction			
RN14	Increase in HGV traffic on link RN14 in Sutton Heath, St Helens and effects on severance of the road There are footways on both sides of the carriageway and the increase in traffic has identified potential severance issues	The B5204 has already undergone several improvement schemes in recent years to address issues with pedestrian desire lines across the carriageway particular related to access to St John Vianney Catholic Primary School. These improvements included a widened footpath on the north side of the road which incorporates an off-carriageway cycle way, a dedicated signalised pedestrian crossing in front of the school, no stopping/parking restrictions on the B5204 near the school as well as smaller schemes such as footway resurfacing, tactile paving for minor road crossings. As such provision of more physical infrastructure would not be appropriate and additional environmental measures in this area should be focused on traffic routeing and timings. Alternative routeing of the HGV traffic would not be possible.	CTMP secured via DCO requirement.

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
		The need for access along this road is required as this is a section of road that installation of the pipeline is required along as well as to build the section to the south of the road, west of Nightgrove Hall Drive. Access to the road from the west would have larger and wider impacts on other residential areas such as Rainhill and Thatto Heath and would require longer HGV conveyance routes. Therefore, it is considered the additional mitigation that would address the severance issues would be to limit traffic on this route at certain times of the day around school drop off and pick up when the issue would be most prevalent in the area. It is proposed that there would be a project HGV ban on the B5204 between 08:00 – 09:00 and 15:00 – 16:00 every school day.	
RE4	Increase in HGV traffic on link RN14 in Appleton Thorn, and effects on severance of the road and on pedestrian amenity, pedestrian delay and fear and intimidation. There are footways on both sides of the carriageway and the increase in traffic has identified potential severance issues and issues	A key focus of the issues on this link as a result of the development traffic is related to severance and pedestrian amenity. Arley Road from the junction with the B5356 to the end of the built up area of Appleton Thorn has a footway along the east side of the carriageway and intermittently on the west side of the carriageway, however it is not provided with any formal crossings of the road. A recent scheme has been installed on Arley Road around the School including	CTMP secured via DCO requirement.

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
	with pedestrian amenity, pedestrian delay and fear and intimidation	parking restrictions on both sides of the carriageway between Chapel Lane and the end of the residential area and a new segregated footway on the west side of the road from Chapel Lane. Therefore, it is considered the additional mitigation that would address the severance and pedestrian issues would be to limit traffic on this route at certain times of the day around school drop off and pick up when the issue would be most prevalent in the area. It is proposed that there would be a project HGV ban on the B5256 between 08:00 – 09:00 and 15:00 – 16:00 every school day.	
RE10 and RE11	Increase in HGV traffic on link RE10 and RE11 in Partington and effects on Severance of the road and on pedestrian amenity, pedestrian delay and fear and intimidation There are footways on both sides of the carriageway and the increase in traffic has identified potential severance issues and issues with Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation.	Access to the proposed corridor south of Partington is a restricted location due to the presence of the canal network to the north (Manchester Ship Canal) and south (Bridgewater Canal). Access for roads across these bridges/underpasses is restricted for HGVs due to height, width or weight restrictions. A review of useable routes without these restrictions to access the B5160 indicated two options, the first as proposed, along the less built up section of A6114 and then through Partington, and the second which would need to route through Lymm town centre. The route through Lymm has not been included in this PEIR as it would have a wider impact on receptors	CTMP secured via DCO requirement (change in vehicle routeing and timing compliance) Development of onsite haul road design solutions in the post Section 42 phase. If this can be established then design can be amended and reflected in the DCO works plans.

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
		across local the local highways network in Lymm and Heatley. Partington is a built up settlement with a town centre around the junction with Central Drive. The road also has schools and other community facilities along the link. The road has footways on both sides and numerous formal and informal crossings of the road. It is a sensitive location for pedestrians and not currently heavily trafficked by HGVs. It is considered therefore that the intervention requirements would be the following: • Limiting traffic on this route at certain times of the day around school drop off and pick up. It is proposed that there would be a project HGV ban on the B5256 between 08:00 – 09:00 and 15:00 – 16:00 every school day. • Applicant to review the options to remove all traffic from this route as the design develops. An option to continue the haul road from access EH-52 at Carrington to the B5160 can be investigated. • If removing all traffic from Partington cannot be achieved through a haul road an alternative of	

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
		splitting HGV traffic across both the Lymm Route and Partington route could be proposed. This would reduce the impacts in Partington and increase in Lymm but on balance this may provide a less onerous set of traffic and transport environmental impacts.	
SR9	Increase in HGV traffic on link SR9 in Anderton, Northwich and effects on Severance of the road. There are footways on both sides of the carriageway and the increase in traffic has identified potential severance issues.	New Road through Anderton is an area built up with residential properties with a village hall to the north of the carriageway and just north of the Anderton Boat lift tourist attraction. A wider review of pedestrian routes for the Anderton Boat lift indicate that New Road is only part of the network of local routes and that the towpaths along the canal actually provide a better route for access to Northwich and Winnington and the wider open area recreational facilities to the south and south-west of the Boat Lift. It is considered that any physical improvements to New Road would not offer a value improvement for issues of severance and additional environmental measures in this area should be focused on traffic routeing and timings. Alternative routeing of the HGV traffic from the north would not be appropriate as the impacts on the village of Comberbach are considered to be worse	CTMP secured via DCO requirement

Receptor	Potential changes and effects	Additional measures	Compliance mechanism
		than the current proposed route. Therefore, it is considered the additional mitigation that would address the severance issues would be to limit traffic on this route at certain times of the day/year. A discussion with Anderton Boat lift should be undertaken to understand the key periods of the year/week/day that the construction programme can attempt to work around. It is assumed that this would be focused around Saturdays (no work on the Project is proposed on Sundays or Bank Holidays).	

11.14 Residual Effects assessment

- 11.14.1 As set out in **Table 11.55** the provision of a range of appropriate additional mitigation measure to mitigate effects of Severance and Pedestrian Amenity, Pedestrian Delay and Fear and Intimidation have been developed.
- 11.14.2 With these measures it is considered that the residual effect of the Project on Receptor RN14 would reduce from Moderate to Minor and as such the impact to not significant.
- 11.14.3 With these measures it is considered that the residual effect of the Project on Receptor RE4, RE10, RE11 and SR9 would reduce from Major to Minor and as such to not significant.
- 11.14.4 Further discussion with SHBC, TBC, CWC and the Canal and River Trust (Anderton Boat Lift) would need to be undertaken to agree specific timings for any HGV timing restrictions.

11.15 Further work to be undertaken

- 11.15.1 The information provided in this PEIR is preliminary, the final assessment of likely significant effects will be reported in the ES. This section describes the further work to be undertaken to support the traffic and transport assessment presented in the ES.

Baseline

- 11.15.2 It is anticipated that following consultation and Section 42 consultation feedback some new or existing assessed locations may require an updated baseline data set for 2023 (the anticipated ES submission date).
- 11.15.3 Following consultation and feedback on this chapter should other receptors/links be required to assessed these will be added to the baseline for the ES submission.
- 11.15.4 Pre PEIR consultation has agreed with all local highway authorities other than SHBH that the PIA data from Crashmap in this chapter will be updated with detailed accident statistics from the highway authority.

Assessment

- 11.15.5 Consultation on the assessment methodology presented in this PEIR chapter will be discussed following a formal response from the local and strategic highways authorities.
- 11.15.6 Cumulative effects on traffic and transport resulting from the effects of the Project and other developments have not been assessed at this stage.
- 11.15.7 The following impacts have the potential to act cumulatively with impacts from other developments to contribute to cumulative effects:
- Permitted/committed developments within and in the vicinity of the transport Study Area that will result in additional traffic on the road network. As set out earlier in this chapter it is considered that permitted/committed developments will be included within the agreed TEMPro traffic growth rate. 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 taking into account the traffic associated with all cumulative and anticipated development with the relevant local plans and this approach has been agreed with all the local and strategic highways authorities involved with this Project, other than St Helens Borough Council, with whom agreement will be sought prior to the submission of the ES; and
 - Committed transport schemes that will affect the transport network, such as junction improvements and new road links. These will be identified with the highway authorities through consultation and the formal response to Section 42 consultation. There are a number of committed and potential schemes that are potentially being developed over time frames which overlap with the Project which may be considered for the DCO submission as set out in **Section 11.1.**

Consultation and Engagement

- 11.15.8 Further meetings, email correspondence and discussion is required with the local and strategic highways authorities before ES submission, building on the work

undertaken in this chapter and consultation agreements to date. The nature of this further consultation is set out in **Table 11.56** below.

Table 11.56 Future Consultation

Consultee	Issues to be addressed	Relevance to assessment
National Highways	• Scope of Assessment on SRN. • Detailed junction specific assessments (if necessary).	To allow the ES preparation to take into account assessment to National Highways satisfaction
Chester West and Chester Council	• Scope of Assessment on CWCC Network. • Detailed junction specific assessments (if necessary). • HS2 Implications. • Site specific PRow mitigations. • Design issues (access design, visibility splays). • HyNet North West Carbon Dioxide Pipeline implications (cumulative assessment).	To allow the ES preparation to take into account assessment to CWCC satisfaction
Halton Borough Council	• Scope of Assessment on HBC Network. • Detailed junction specific assessments (if necessary). • Site specific PRow mitigations. • Design issues (access design, visibility splays).	To allow the ES preparation to take into account assessment to HBC satisfaction
Trafford Borough Council	• Scope of Assessment on TBC Network.	To allow the ES preparation to take into account assessment to TBC satisfaction

Consultee	Issues to be addressed	Relevance to assessment
	- Detailed junction specific assessments (if necessary). - HS2 Implications. - Site specific PRow mitigations. - Design issues (access design, visibility splays). - Carrington Bypass proposals (future baseline).	
Chester East Council	- Scope of Assessment on CEC Network. - Detailed junction specific assessments (if necessary). - HS2 Implications. - Site specific PRow mitigations. - Design issues (access design, visibility splays).	To allow the ES preparation to take into account assessment to CEC satisfaction
Warrington Borough Council	- Scope of Assessment on WBC Network. - Detailed junction specific assessments (if necessary). - Site specific PRow mitigations. - Design issues (access design, visibility splays). - Cannington Bypass. - Warrington Western Link implications	To allow the ES preparation to take into account assessment to WBC satisfaction

Consultee	Issues to be addressed	Relevance to assessment
St Helens Borough Council	• Scope of Assessment on WBC Network. • Detailed junction specific assessments (if necessary). • Site specific PRow mitigations. • Design issues (access design, visibility splays). • Cannington Bypass. • Methodology of ES chapter assessment.	To allow the ES preparation to take into account assessment to SHBC satisfaction
Canal and River Trust	• Crossings of Canal for construction routes. • Timings of restrictions on New Road near Anderton Boat Lift.	To allow the ES preparation to take into account assessment to Canal and River Trust satisfaction

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