



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 3, Chapter 5: Traffic and Transport

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Annexes

Annex number	Annex title
Volume 3, Annex 5.1	Description of Network Links and Sensitivity

Glossary

Term	Meaning
Abnormal Indivisible Load (AIL)	Loads or vehicles that exceed the maximum vehicle weight, axle weight or dimensions prescribed in the Road Vehicles (Construction and Use) Regulations 1986 (as amended), and which cannot reasonably be divided for carriage, typically requiring special permits and route management.
Automatic Traffic Counter (ATC)	A device, often using pneumatic tubes or radar, which temporarily placed on roads to collect crucial data on vehicle volume, speed and classification (e.g. cars, heavy goods vehicles, etc.).
Annual Average Daily Traffic (AADT)	The AADT is the average number of vehicles that travel on a specific road each day, calculated over the course of 24 hours, in a full year.
Blue Onshore Land Substation (LSS) Option Area	Proposed location option for the onshore land substation, located west of the A19 and south of the access road to the Jade Business Park.
Commitments	Measures (embedded mitigation and secondary) to be adopted during the construction, operation and maintenance and decommissioning phases of the MHPGC Project.
Construction Traffic Management Plan (CTMP)	A required document for development which details how vehicles and pedestrians are to be managed to minimise disruption during building work (including routes, scheduling, and safety).
Cumulative effect	For each environmental topic, the baseline environment will be characterised, and the likely significant effect will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent
Cumulative effects assessment	Assessment of the likely effects arising from the MHPFC Project alongside the likely effects arising from other proposed developments on the same receptor or resource.
Design Manual for Roads and Bridges (DMRB)	The UK's official set of standards, advice notes and requirements for the design, assessment, operation and maintenance of trunk roads and motorways. It is also commonly used for local highways.
Embedded mitigation	Measures included as part of the project design. Includes both primary and tertiary mitigation.
Environmental Impact Assessment (EIA)	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Green Onshore LSS Option Area	Proposed location option for the onshore land substation, located between Jade Business Park (Spring Rd, Murton, Seaham SR7 9DR) and the National Grid Hawthorn Pit Substation.
Inter-related effects	Effects that may arise from the interactions between different EIA topic effects considered within the project-alone assessment, potentially leading to more significant effects than if they were to be considered in isolation
Landfall	The area in which the offshore export cables make landfall (come onshore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area

Term	Meaning
	between the trenchless technique exit pits and the transition joint bay inclusive of all construction works.
Magnitude	A combination of the spatial extent, duration, frequency and reversibility of an impact
Maximum Design Scenario (MDS)	The realistic worst case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the MHPGC Project.
MHPGC Project Scoping Report	A Scoping Report for the MHPGC Project, scoping the likely significant effects of the project on the environment, was submitted and accepted by Planning Inspectorate (PINS) and submitted to the Scottish Ministers, via the Marine Directorate – Licencing Operations Team (MD-LOT) in February 2025.
MHPGC Project Scoping Opinions	Separate scoping opinions received from PINS (on behalf of the Secretary of State) and MD-LOT (on behalf of the Scottish Ministers) in response to the MHPGC Project Scoping Report. The MHPGC Project Scoping Opinions contain the range of issues that PINS, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the EIA process.
Morven Hawthorn Pit Grid Connection Project	The MHPGC Project is comprised of the offshore export cables in Scottish and English waters from the Morven North or the Morven South offshore substation platform(s) (OSP), landfall, onshore export cables, the onshore land substation (LSS) and AC connection cables. Also referred to in this report as the MHPGC Project, for ease of reading.
Morven North Offshore Wind Array Project (hereafter 'Morven North')	The Morven North Offshore Wind Array Project which includes the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven North Boundary.
Morven South Offshore Wind Array Project (hereafter 'Morven South')	Morven North and Morven South comprises the Morven North Offshore Wind Array Project and Morven South Offshore Wind Array Project, collectively.
National Grid Hawthorn Pit Substation	The National Grid substation at Hawthorn Pit, County Durham, which the AC connection cables will connect into from the Onshore Land Substation.
Operations and Maintenance phase (O&M)	The operational and maintenance phase of the MHPGC Project.
Personal Injury Collision (PIC)	A road traffic collision involving at least one person who is injured or killed. Collisions are grouped by severity: slight injury, serious injury or fatality.
Planning Inspectorate (PINS)	The PINS is an executive agency of the UK Government responsible for administering and examining DCO applications for NSIPs in England. PINS manages the application process, oversees consultation and examination, and makes a recommendation to the relevant Secretary of State on whether consent should be granted.
Preliminary Environmental Information Report (PEIR)	A preliminary assessment of the likely significant effects of the MHPGC Project on the physical, biological, and human environment

Term	Meaning
	during construction, O&M and decommissioning. The PEIR is based on currently available information and is used to inform statutory consultation under section 42 of the Planning Act 2008.
Primary mitigation	Measures included as part of the location or design of the MHPGC Project made during the pre-application phase that are an inherent part of the MHPGC Project and do not require additional action to be taken. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the MHPGC Project, the parameters and associated commitments secured by the DCO and marine licence, or both.
Residual effects	Effects that continue to exist after mitigation has been applied.
Secondary mitigation	Actions that will require further activity to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES. These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures, both pre-mitigation and residual effects are presented.
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Trip End Model Presentation Programme (TEMPro)	UK Department for Transport (DfT) software used to analyse, view, and forecast traffic growth based on the National Trip End Model (NTEM) datasets
Tertiary mitigation	Actions that would occur with or without input from the EIA process feeding into the design. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.
The Study Area	For each environmental topic, the baseline environment will be characterised, and the likely significant effect will be described within a topic-specific Study Area. Specific Study Areas are defined for each topic and are based on the maximum spatial extent across which likely significant effects of the MHPGC Project may be experienced by the relevant receptors (i.e. Zone of Influence (Zoi)).
Transboundary impact	Potential impacts resulting from MHPGC Project and affecting another European Economic Area (EEA) state.
Transboundary effects	Assessment of likely significant effects resulting from MHPGC Project on the interests of another European Economic Area (EEA) state(s).
WebTAG	The Department for Transport's (web-based) transport appraisal guidance and toolkit, setting out the method to be used for appraising highways and public transport interventions in England.

Acronyms

Acronym	Meaning
AADT	Average Annual Daily Traffic
AIL	Abnormal Indivisible Load
ATC	Automatic Traffic Counter
CEA	Cumulative Effect Assessment
CTMP	Construction Traffic Management Plan
DCC	Durham County Council
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
EATM	Environmental Assessment of Traffic and Movement
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESDAL	Electronic Service Delivery for Abnormal Loads
EWG	Expert Working Group
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
IEMA	Institute of Environmental Management and Assessment
ISEP	Institute of Sustainability and Environmental Professionals
JSJV	Jacobs SYSTRA Joint Venture
LTP	Local Transport Plan
MAVRIC	Mapping Application for Visualising Road Injury Casualties
MDS	Maximum Design Scenario
MHPGC	Morven Hawthorn Pit Grid Connection
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MSOA	Middle layer Super Output Area
NHs	National Highways
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NRTP	National Road Traffic Projections
NTEM	National Trip End Model
O&M	Operations and Maintenance

Acronym	Meaning
OSP	Offshore Substation Platform
PEIR	Preliminary Environmental Information Report
PIC	Personal Injury Collision
PINS	Planning Inspectorate
PRoW	Public Rights of Way
SCC	Sunderland City Council
SRN	Strategic Road Network
SoS	Secretary of State
TEMPro	Trip End Model Presentation Programme
TAG	Transport Analysis Guidance
TMA	Traffic Management Act

Units

Unit	Meaning
km	Kilometre
m	Metre (distance)
m ²	Square meter
m ³	Cubic meter
mph	Miles per hour
%	Percent

5 Traffic and Transport

5.1 Introduction

- 5.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) work undertaken to date for the Morven Hawthorn Pit Grid Connection Project (hereafter 'MHPGC Project'), as described in **Volume 1, Chapter 2: Project Description, of the PEIR**.
- 5.1.1.2 The chapter considers the potential impacts and likely significant effects on traffic and transport network that could result from the construction, operation and maintenance (O&M) and decommissioning phases of the MHPGC Project. Specifically, it relates to the onshore elements of the MHPGC Project landward of Mean Low Water Springs (MLWS) at landfall to the National Grid Hawthorn Pit Substation in England.
- 5.1.1.3 This chapter describes the methodology, datasets that have informed the preliminary assessment, baseline conditions, including future baseline, mitigation measures and assesses the preliminary residual likely significant effects on traffic and transport that could result from the MHPGC Project.
- 5.1.1.4 The assessment is informed by the following chapters:
- **Volume 1, Chapter 2: Project Description, of the PEIR;**
 - **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR;**
 - **Volume 1, Chapter 5: Policy and Legislation, of the PEIR;**
- 5.1.1.5 The chapter also draws on information contained within the following annexes:
- **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR;**
 - **Volume 1, Annex 4.3: Cumulative Screening and Location Plan, of the PEIR;**
 - **Volume 3, Annex 5.1: Description of Network Links and Sensitivity, of the PEIR.**
- 5.1.1.6 This PEIR will offer a comprehensive overview of the MHPGC Project's potential environmental impacts and embedded mitigation measures, presenting essential data to stakeholders for review and feedback. The PEIR has been informed by the ongoing pre-application consultation process.
- 5.1.1.7 Following consultation, comments will be reviewed and considered, where appropriate the feedback will be incorporated during of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate (PINS) for development consent.

5.2 Legislative and policy context

5.2.1 Overview

- 5.2.1.1 The full relevant legislation and policy context for the MHPGC Project has been detailed in **Volume 1, Chapter 5: Policy and Legislation, of the PEIR**. This section sets out the legislation and planning policy that is relevant to the preliminary traffic and transport assessment.

5.2.2 Legislation

- 5.2.2.1 The overall approach to the traffic and transport assessment set out in this chapter has been guided by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, which set out the statutory requirements for identifying, describing and assessing the likely significant environmental effects of a proposed development. For traffic and transport, this includes effects arising from construction traffic volumes, vehicle types, routing, and duration, as well as cumulative impacts with other committed developments.

Highways Act 1980

- 5.2.2.2 The Highways Act 1980 provides the primary legal framework governing the creation, alteration, protection, maintenance and use of public highways in England. This sets out powers and duties of highway authorities in relation to the local highway network and the Secretary of State in relation to the Strategic Road Network. It also sets out legislation for Section 38 Agreements and Section

278 Agreements. Any works required must comply with the Highways Act 1980, to ensure the safe and efficient operation of the highway network and be developed in consultation with the relevant highway authority.

Road Traffic Regulation Act 1984

- 5.2.2.3 The Road Traffic Regulation Act 1984 aims to consolidate previous laws governing road traffic regulation in the Great Britain. It provides the framework for controlling traffic, including the use of speed limits, traffic signs, and signals. The Act empowers local authorities to implement traffic orders for various purposes such as enhancing road safety, managing congestion, and protecting the environment. Key highlights include provisions for controlling vehicles' speed through speed limits, addressing parking regulations, and restricting the movement of heavy goods vehicles. The Act's development addresses the increasing need for systematic traffic management and road safety improvements.

New Roads and Street Works Act 1991

- 5.2.2.4 The New Roads and Street Works Act 1991 provides the legal framework for how road and street works are carried out. It plays a vital role in helping utilities and contractors plan, manage, and safely complete work on public highways.

Transport Act 2000

- 5.2.2.5 The Transport Act 2000 provides the statutory basis for local transport planning, requiring local authorities to develop Local Transport Plans (LTPs) and associated strategies for public transport, congestion management and sustainable transport. The assessment in this chapter has therefore been undertaken with regard to the objectives, policies and priorities of the relevant LTPs for the area. These are explored further in **Section 5.2.4**.

Traffic Management Act 2004

- 5.2.2.6 The Traffic Management Act 2004 (TMA) was introduced to ensure the efficient operation of the road network in England and Wales. Its central purpose is to reduce congestion, improve network reliability, and coordinate activities that affect the highway. The TMA places a statutory "Network Management Duty" on all local transport authorities to "secure the expeditious movement of traffic on their road network and facilitate the movement of traffic on the networks of others". The TMA has implications for the MHPGC Project, which must demonstrate that proposed traffic routes, access arrangements and the timing of works, help to minimise congestion and maintain safety for all road users.

The Infrastructure Act 2015

- 5.2.2.7 The Infrastructure Act 2015 enshrines new measures to make it easier, quicker and simpler to progress major infrastructure projects. The Act allowed the creation of Highways England (now known as National Highways), a government-owned company which will use access to long term stable funding to ensure improvements on the country's major road network are streamlined, cost efficient and encourage investment.

5.2.3 National policy context

National policy statements

- 5.2.3.1 National Policy Statements (NPS) set out the primary policy framework for a Development Consent Order (DCO) under which the MHPGC Project will be considered. This framework includes guidelines, requirements and criteria that the MHPGC Project must meet to obtain consent and proceed with development.
- 5.2.3.2 **Table 5.1** provides details of the NPS relevant to traffic and transport and how and where they are covered in the PEIR:
- Overarching NPS for energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2025a);

- NPS for renewable energy infrastructure (EN-3) (DESNZ, 2025b);
- NPS for electricity networks infrastructure (EN-5) (DESNZ, 2025c).

Table 5.1: Summary of the NPS provisions relevant to traffic and transport

Summary of relevant NPS provisions	How and where considered in the PEIR
NPS EN-1	
Paragraph 5.14.1: <i>"The transport of materials, goods and personnel to and from a development during all project phases can have a variety of impacts on the surrounding transport infrastructure and potentially on connecting transport networks, for example through increased congestion. Impacts may include economic, social and environmental effects."</i> Paragraph 5.14.2 <i>"Environmental impacts may result particularly from trips generated on roads which may increase noise and air pollution as well as greenhouse gas emissions"</i>	This chapter has preliminarily assessed the MHPGC Project with regard to potential highways and transport impacts. This has been undertaken following best practise guidance which takes into account effects to users of the highway network, PRoW network and National Cycle Network. The study area includes all routes where likely significant effects may occur as result of the Project Potential environmental impacts from traffic associated with the MHPGC Project are considered within the following relevant PEIR chapters: • Volume 3, Chapter 3 Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR • Volume 3, Chapter 6 Noise and Vibration, of the PEIR • Volume 3, Chapter 7: Air Quality, of the PEIR • Volume 4, Chapter 2 : Human Health, of the PEIR • Volume 4, Chapter 3 : Socio-economics, of the PEIR • Volume 4, Chapter 4: Climate Change, of the PEIR
Paragraph 5.14.3 <i>"Disturbance caused by traffic and abnormal loads generated during the construction phase will depend on the scale and type of proposal"</i>	The chapter considers a peak construction scenario for the Project to provide a robust assessment of potential highways and transport impacts.
Paragraph 5.14.5: <i>"If a project is likely to have significant transport implications, the applicant's ES (see Section 4.3) should include a vision for transport and an assessment of potential transport impacts."</i> Paragraph 5.14.6: <i>"The DfT's Transport Analysis Guidance (TAG) and Welsh Governments WelTAG provides guidance on modelling and assessing the impacts of transport schemes."</i>	This chapter contains an integrated and preliminary transport appraisal of the impacts on traffic and transport relating to the MHPGC Project and the effects on the operation of the highway network in accordance with NPS EN-1 and best practice. Detail on the assessment methodology is provided in Section 5.5. The assessments contained within this chapter are based on a peak construction scenario to provide a robust assessment of potential transport impacts using information available on the current design proposals.
Paragraph 5.14.7: <i>"National Highways and Highways Authorities are statutory consultees on NSIP applications including energy infrastructure where it is expected to affect the strategic road network and / or have an impact on the local road network. Applicants should consult with National Highways and Highways Authorities as appropriate on the assessment, including any reasonable future tested scenarios and mitigation to inform the application to be submitted."</i>	The Applicant has and will continue to engage with National Highways and relevant local highways authorities. Details of the feedback from National Highways and the local highway authorities (Durham County Council and Sunderland City Council) on the 'MHPGC Project Scoping Report' and 'Traffic and Transport Study Area and Survey Approach Technical Note', including how and where this has been incorporated, is explained in Section 5.3.

Summary of relevant NPS provisions	How and where considered in the PEIR
	In addition, regular meetings with the Expert Working Group (EWG) for Traffic and Transport have been used to inform and obtain feedback from each of these authorities on the assessment method, findings, and proposed mitigations.
Paragraph 5.14.8: <i>"The applicant should prepare a travel plan adopting a vision-led approach to identify demand management and monitoring and fall-back measures that proactively mitigate transport impacts by providing details of proposed measures to improve access by active, public and shared transport to:</i> <i>• Reduce the need for parking associated with the proposal;</i> <i>• Contribute to decarbonisation of the transport network; and</i> <i>• Improve user travel options by offering genuine modal choice"</i>	This chapter assesses the potential impacts to traffic and transport as a result of the MHPGC Project at all phases. Where appropriate, movement by sustainable means will be facilitated and encouraged. This will be secured through the completion of an Outline Construction Traffic Management Plan (CTMP), CoT41, which will set out measures to mitigate traffic and transport impacts and provide measures to improve access by active, public and shared transport by construction workers.
Paragraph 5.14.9: <i>"The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports)."</i>	This chapter includes the assessment of the traffic impacts of the development on the strategically important roads, including A19 road corridor, locally important highway links and key junctions. This includes the potential for disruption to local bus services. Detail of the local transport services and roads which are considered within this assessment is provided in Section 5.4, with the method of how possible disruption is assessed provided in Section 5.5. There will be no impacts to rail and airports as a result of the MHPGC Project as such no assessment will be undertaken. It is noted that the offshore export cable crosses a railway at Landfall via Trenchless Techniques (CoT51). The Applicant will engage with Network Rail to ensure no disruption to its infrastructure
Paragraph 5.14.10: <i>"If additional transport infrastructure is needed or proposed, it should always include good quality walking, wheeling and cycle routes, and associated facilities (changing/storage etc.) needed to enhance active transport provision."</i>	No provision of permanent transport infrastructure is proposed as part of MHPGC Project, beyond that required to facilitate highways access to the LSS. Temporary infrastructure will include access junctions, parking and active travel measures, these measures will be contained within the Outline CTMP (CoT41) and PRoW Management Plan (CoT35). The design requirements for provision of pedestrian and cycling provision will be included in the Outline HAMP (CoT10) and Design Principles for the LSS (CoT62).
Paragraph 5.14.12: <i>"Where mitigation is needed, possible demand management measures must be considered. This could include identifying opportunities to:</i> <i>• reduce the need to travel by consolidating trips</i> <i>• locate development in areas already accessible by active travel and public transport</i> <i>• provide opportunities for shared mobility</i> <i>• re-mode by shifting travel to a sustainable mode that is more beneficial to the network</i> <i>• retime travel outside of the known peak times; and</i> <i>• reroute to use parts of the network that are less busy"</i>	Various mitigation measures are to be considered as part of the Outline CTMP (CoT41) to manage the volume and impact of traffic on the local transport network and promote sustainable access. This is to include consideration how and when deliveries are to be made and how workforce trips can be managed to reduce single-occupant car travel by construction workers.
Paragraph 5.14.13:	No provision of permanent transport infrastructure is proposed as part of MHPGC Project, beyond that

Summary of relevant NPS provisions	How and where considered in the PEIR
<i>"If feasible and operationally reasonable, such mitigation should be required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts. All stages of the project should support and prioritise a modal shift of freight from road to more environmentally sustainable alternatives, such as rail, cargo bike, maritime and inland waterways, as well as making appropriate provision for and infrastructure needed to support the use of alternative fuels including charging for electric vehicles."</i>	required to facilitate highways access to the LSS. Temporary infrastructure will include access junctions parking and active travel measures such as changing / storage facilities, these measures will be contained within the Outline CTMP (CoT41) and PRoW Management Plan (CoT35). The design requirements for provision of pedestrian and cycling provision will be included in the Outline HAMP (CoT10) and Design Principles for the LSS (CoT62). Given the linear nature of the works, the absence of nearby viable rail hubs and waterways and the varied origins of materials and equipment, it is anticipated that all deliveries will be required to be undertaken by road.
Paragraph 5.14.14: <i>"Regard should always be given to the needs of freight at all stages in the construction and operation of the development including the need to provide appropriate facilities for HGV drivers as appropriate."</i>	Facilities for Heavy Goods Vehicle (HGV) drivers travelling to and from the site during the construction phase are to be considered as part of the Outline CTMP. All the construction compounds will include the necessary welfare provisions for staff.
Paragraph 5.14.15: <i>"The Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that:</i> <i>control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements</i> <i>make sufficient provision for HGV parking, and associated high quality driver facilities either on the site or at dedicated facilities elsewhere, to support driver welfare, avoid 'overspill' parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions</i> <i>ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force."</i>	HGV routes will be identified and restrictions on HGV timing will be proposed if necessary to avoid adverse impacts on sensitive receptors, including local schools. This is discussed and presented in further detail in Section 5.5 . Provision for HGV parking and parking for other vehicles will be made available within the construction compound locations. An embedded mitigation measures will detail this within the Outline CTMP (CoT41) and will consider foreseeable disruption and required mitigations.
Paragraph 5.14.16: <i>"The Secretary of State should have regard to the cost-effectiveness of demand management measures compared to new transport infrastructure, as well as the aim to secure more sustainable patterns of transport development when considering mitigation measures."</i>	No provision of new transport infrastructure is proposed as part of the MHPGC Project, beyond that required to facilitate permanent highways access and the temporary measures contained within the Outline CTMP (CoT41) and PRoW Management Plan (CoT35). Demand management measures will be explored to promote access by sustainable modes by construction workers.
Paragraph 5.14.17: <i>"Applicants should consider the DfT policy guidance "Water Preferred Policy Guidelines for the movement of abnormal indivisible loads" when preparing their application."</i>	Waterborne transport is not considered to be relevant for the movement of Abnormal Indivisible Loads (AILs) for the onshore elements of the MHPGC Project beyond their delivery to nearby ports. The linear nature of the works, the absence of nearby viable waterways and the varied origins of materials and equipment will require that all deliveries are undertaken by road following delivery to a nearby port.
Paragraph 5.14.19: <i>"A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the Secretary of State should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development and by enhancing active, public and shared transport provision and accessibility."</i>	As stated above, the assessment of the MHPGC Project will consider how traffic and transport will impact on transport infrastructure and specifically sensitive receptors. Detail is provided on how this assessment is being undertaken in Section 5.5 , with the outputs of the assessment set out in Section 5.8 . Appropriate measures will be identified to mitigate these impacts and promote sustainable access.

Summary of relevant NPS provisions	How and where considered in the PEIR
NPS EN-3	
Paragraph 2.8.65: <i>"Assessment of environmental effects of transmission infrastructure and any proposed offshore or onshore substations should assess effects both alone and cumulatively with other existing and proposed infrastructure"</i>	The cumulative impacts of the MHPGC Project in combination with existing and proposed infrastructure are set out in Section 5.9 . This includes the cumulative impacts of committed transport improvements and developments.
NPS EN-5	
Paragraph 2.15.1: <i>"Coordinated approaches to delivering offshore-onshore transmission to minimise overall environmental, community, and other impacts, as set out above, must be considered. The Secretary of State must be satisfied that applicants have explained the steps they have taken to do this, the options that have been considered and the approach they have taken to coordination as set out in above at Section 2.13"</i>	The development of this chapter has been undertaken in coordination with the wider assessment of environmental, community and other impacts to support site selection (Volume 1, Chapter 3: Site Selection & Consideration of Alternatives) and the development of joined up mitigation measures. Potential environmental impacts from traffic associated with the MHPGC Project are considered within the following relevant PEIR chapters: • Volume 3, Chapter 3 Terrestrial Ecology and Terrestrial and Intertidal Ornithology, of the PEIR • Volume 3, Chapter 6 Noise and Vibration, of the PEIR • Volume 3, Chapter 7: Air Quality, of the PEIR • Volume 4, Chapter 2: Human Health, of the PEIR • Volume 4, Chapter 3 : Socio-economics, of the PEIR • Volume 4, Chapter 4: Climate Change, of the PEIR

National Planning Policy Framework

- 5.2.3.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2025) is considered important and relevant to the Secretary of State (SoS) consideration of the MHPGC Project. **Table 5.2** provides details of the elements of the NPPF that are relevant to traffic and transport and how and where they are covered in the PEIR or will be covered within the ES.

Table 5.2: Summary of NPPF requirements relevant to traffic and transport

NPPF section	How and where this is considered in the PEIR
Section 9, Paragraph 115: <i>"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:</i> <i>sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;</i> <i>safe and suitable access to the site can be achieved for all users;</i> <i>the design of streets, parking areas, other transport elements and the content of associated standards reflect current national guidance, including the</i>	Existing sustainable transport provision within the Traffic and Transport Study Area (which is defined in Section 5.4.2 and sets the geographical scope of the assessment based on the maximum spatial extent across which likely significant effects of the MHPGC Project may be experienced by the relevant receptors), including opportunities for access from surrounding locations, is described in Section 5.4.5 of this chapter. This includes detail on local public transport services and active travel provision. Also included in Section 5.4.5 is an analysis of Personal Injury Collisions (PICs) within the Traffic and Transport Study Area, which is used to help identify key locations

NPPF section	How and where this is considered in the PEIR
<i>National Design Guide and the National Model Design Code; and</i> <i>any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach.</i>	which may be sensitive to increases in traffic flow resulting from the MHPGC Project. All designs, including for temporary measures, are to be informed by relevant national design guidelines and standards, including the Design Manual for Roads and Bridges (DMRB).
Section 9, Paragraph 116: <i>“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.”</i>	Section 5.8 of this chapter assesses the potential impact of vehicle movements arising from the MHPGC Project on the local and strategic highway networks. This details whether the traffic associated with construction and decommissioning stages will have an unacceptable impact on the highway network and highway safety and where mitigation is required to mitigate these impacts.
Section 9, Paragraph 117: <i>“...development should:</i> <i>a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;</i> <i>b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;</i> <i>c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;</i> <i>d) allow for the efficient delivery of goods and access by service and emergency vehicles; and</i> <i>be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.”</i>	The chapter considers potential interactions with existing pedestrian, cycle and public transport routes and the potential impact of the MHPGC Project on these. Vulnerable road users, including people with disabilities and reduced mobility, are considered through the assessment of non-motorised users, PRoW and road safety. A PRoW Management Plan (CoT35), to be submitted in support of the application for development consent, will set out how PRoW closures and diversions, will be safely managed. The Outline CTMP (CoT41) is also to include provisions to maintain safe access for all users and minimise disruption from construction traffic. Anticipated construction traffic routing and volumes are assessed to ensure movements do not impede emergency service response or essential access. The Outline CTMP will secure arrangements for maintaining unimpeded emergency access and coordinating deliveries to avoid peak periods on sensitive routes. Details on the existing pedestrian, cycling and public routes within the Traffic and Transport Study Area is provided in Section 5.4.5. Detail on how the potential impacts of the MHPGC Project on all non-motorised users been assessed is provided in Section 5.5.
Section 9, Paragraph 118: <i>“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored.”</i>	This chapter contains an integrated preliminary transport assessment, considering the potential impacts and effects on the operation of the highway network arising from the MHPGC Project. Travel plan measures will be included within an Outline CTMP to be submitted in support of the application for development consent.

Strategic road network and the delivery of sustainable development

- 5.2.3.4 DfT Circular 01/2022 (Strategic Road Network (SRN) and the Delivery of Sustainable Development) sets out how development proposals should be planned and assessed to ensure they do not compromise the safe and efficient operation of the SRN. It requires that developments generating traffic which may have a material impact on the SRN are appropriately assessed, and that any necessary mitigation is identified and secured. It is noted in paragraph 55, that:

“Environmental assessments must be comprehensive enough to establish the likely impacts on air quality, light pollution and noise arising from traffic generated by a development, along with the impacts from any proposed works to the SRN and identify measures to mitigate these impacts. Requirements and advice for undertaking environmental assessments in respect of transport impacts can be found in the DMRB.”

5.2.4 Local policy context

5.2.4.1 The MHPGC Project lies within the jurisdiction of Durham County Council (DCC), with the assessment of traffic and transport impacts also including those on the highway network in the neighbouring Sunderland City Council (SCC). The following local policy that is relevant to traffic and transport has informed the assessment of preliminary effects in this chapter:

- County Durham Local Plan 2020 to 2035 (DCC, 2020);
- Sunderland Local Plan 2015 to 2033 (SCC, 2020)¹;
- North East Local Transport Plan (North East Combined Authority, 2025).

5.2.4.2 Their relevance to the MHPGC Project is outlined in **Table 5.3**.

Table 5.3: Local policy relevant to traffic and transport

Policy description	How and where considered in the PEIR
County Durham Local Plan	
Policy 21: Delivering Sustainable Transport” <i>All development shall deliver sustainable transport by:</i> a) <i>delivering, accommodating and facilitating investment in safe sustainable modes of transport in the following order of priority: those with mobility issues or disabilities, walking, cycling, bus and rail transport, car sharing and alternative fuel vehicles;</i> b) <i>providing appropriate, well designed, permeable and direct routes for walking, cycling and bus access, so that new developments clearly link to existing services and facilities together with existing routes for the convenience of all users;</i> c) <i>ensuring that any vehicular traffic generated by new development, following the implementation of sustainable transport measures, can be safely accommodated on the local and strategic highway network and does not cause an unacceptable increase in congestion or air pollution and that severe congestion can be overcome by appropriate transport improvements;</i> d) <i>ensuring the creation of new or improvements to existing routes and facilities do not cause unacceptable harm to the natural, built or historic environment”</i> e) <i>developments in the vicinity of level crossings (both vehicular and pedestrian) will be expected to assess the potential increase in risk at each crossing affected and indicate the appropriate mitigation required to reduce or remove such risks”</i>	No provision of permanent transport infrastructure is proposed as part of the MHPGC Project, except for the access road to the LSS. Temporary infrastructure will include access junctions, parking and active travel measures, these measures will be contained within the Outline CTMP (CoT41) and PRoW Management Plan (CoT35). Existing sustainable transport provision within the Traffic and Transport Study Area, including opportunities for access from surrounding locations is described in Section 5.4.5 of this chapter. This includes detail on local public transport services and active travel provision. The assessment has considered how safe and sustainable access can be promoted to the site. It will also include how the potential impacts of the traffic associated with the MHPGC Project can be safely accommodated on the local and strategic highway without increasing congestion or air pollution. This will include the timing and routing of construction traffic and the transport mode used by the workforce and visitors. Potential impacts on local community safety and access are to be mitigated, informed by the assessment of network links and sensitivity (described in Section 5.5.2). This will also be used to ensure that MHPGC Project-related traffic does not cause unacceptable harm to the natural, built or historic environment.
Policy 25: Developer Contributions <i>“New development will be approved where any mitigation necessary to make the development acceptable in planning terms is secured through appropriate planning conditions or planning obligations. Such mitigation will relate to the provision, and/or improvement, of physical, social and environmental</i>	This chapter identifies the mitigation required to make the development acceptable in planning terms and sets out how these measures will be secured through appropriate planning controls. Where specific mitigations are required, these are to be embedded within the design or will be secured through the Outline CTMP (CoT41) (see Section 5.7). These documents

¹ It should be noted that the Sunderland Local Plan is under review awaiting further Government guidance. The policies listed here are not currently listed on the SCC website at the time of document preparation. The aim is that the local plan will be updated for adoption in June 2029.

Policy description	How and where considered in the PEIR
<i>infrastructure taking into account the nature of the proposal and identified local or strategic needs."</i>	will outline measures necessary to manage traffic, protect road users and maintain the function of the local highway network, reflecting the nature of the project and local transport needs.
Policy 10: Development in the Countryside <i>"New development in the countryside must accord with all other relevant development plan policies and by virtue of their siting, scale, design and operation must not:</i> <i>give rise to unacceptable harm to the heritage, biodiversity, geodiversity, intrinsic character, beauty or tranquillity of the countryside either individually or cumulatively, which cannot be adequately mitigated or compensated for; [...]</i> <i>be solely reliant upon, or in the case of an existing use, significantly intensify accessibility by unsustainable modes of transport. New development in countryside locations that is not well served by public transport must exploit any opportunities to make a location more sustainable including improving the scope for access on foot, by cycle or by public transport;</i> <i>be prejudicial to highway, water or railway safety; and</i> <i>impact adversely upon residential or general amenity"</i>	This chapter considers the potential impact of the MHPGC Project-related traffic on the surrounding countryside (see Section 5.5). The assessment identifies where construction traffic could influence the character or tranquillity of rural areas and outlines traffic management and routing measures to minimise disturbance. These measures ensure that any temporary effects are controlled and that no unacceptable harm to the intrinsic qualities of the countryside arises. The assessment demonstrates that vehicle routing has been planned to avoid unnecessary travel through sensitive rural areas and to maintain opportunities for safe access on foot, by cycle and where relevant, via public transport routes. Use of temporary diversions and management measures where required will ensure that public access remains available and safely accommodated. Highway safety is addressed by identifying potential conflict points (see Section 5.4.5) and assessing the potential impact of the MHPGC Project on these, including those on minor rural roads. The Outline CTMP (CoT41) will set out secure measures to manage vehicle movements effectively.
County Durham's Strategic Cycling and Walking Delivery Plan (2019-2029)	
The overall vision of the document is as follows: <i>"To make cycling and walking part of Durham's culture and to make them safe, affordable, enjoyable, everyday modes of transport for everyone."</i> <i>"Whilst the aim of the document is split into three parts and is as follows:</i> <i>Plan and provide high quality cycling and walking networks that are safe and usable for more people.</i> <i>Manage and protect the cycling and walking network to ensure quality of experience for users.</i> <i>Encourage and enable greater participation in cycling and walking across all demographic groups."</i>	This chapter considers the potential impacts of the MHPGC Project related to traffic impact on walking and cycling delay and amenity (see Section 5.5). The assessment has detailed the potential impact of construction and decommissioning traffic on the highway network in the vicinity of the development taking into that National Cycle Route 1 passes by the access to Compound 3&4. The assessment for walking has focused on the potential impacts of construction and decommissioning traffic in the residential areas through Murton and nearby villages and towns. A Construction Worker Travel Plan (CWTP) will be produced as part of the Outline CTMP (CoT41) this will detail the walking and cycling facilities for workers to access the construction compound.
The Parking and Accessibility Supplementary Planning Document, (County Durham)	
The aim of the document is to provide: <i>"Parking and accessibility guidelines are important in managing demand for different types of transport and in supporting development management to make informed decisions about parking provision. This document sets out the Council's approach to what these guidelines."</i>	The Outline CTMP will set out secure measures to ensure an appropriate level of car parking is provided at each compound. The Development will align with the parking standards during the O&M phase of the development, whilst during the construction and decommissioning phases there are no specific standards to align to.
Sunderland Local Plan	
Policy ST2: Local Road Network <i>"2. To ensure that development has no unacceptable adverse impact on the Local Road Network, proposals must ensure that:</i> <i>where a new vehicular access is accepted in principle, the number of access points will be kept</i>	The assessment in this chapter analyses the interaction of the MHPGC Project-related activities with the local road network and identifies measures to ensure that no unacceptable adverse impacts arise (see Section 5.5). The assessment considers the location and number of construction access points and ensures that these have been kept to the minimum required for safe site operation. All proposed access

Policy description	How and where considered in the PEIR
<i>to a minimum and new access points will be designed and constructed in accordance with the current highway design standards;</i> ii. <i>they have safe and adequate means of access, egress and internal circulation/turning arrangements for all modes of transport relevant to the proposal;</i> iii. <i>where an existing access is to be used, substandard accesses will be improved and/or upgraded in accordance with the current standards for the category of road;</i> iv. <i>they are assessed and determined against current standards for the category of road having regard to the capacity, safety and geometry of the highway network;</i> v. <i>they have safe and convenient access for sustainable transport modes relevant to its location; and</i> vi. <i>they will not create a severe impact on the safe operation of the highway network; resulting in potential risk to all highway users with specific consideration given to vulnerable road users."</i>	arrangements will be designed in accordance with current highway standards and agreed with the relevant highway authority. Traffic routing and traffic volumes are assessed against the capacity, safety and geometry of the local road network to ensure that vehicle movements remain appropriate for the roads used. The Outline CTMP and PRoW Management Plan will secure requirements to maintain safe and convenient access for sustainable transport modes by managing temporary diversions, maintaining footway and cycle connectivity and ensuring that public transport services are not unreasonably affected.
Policy ST3: Development and Transport <i>"Development should:</i> 1. <i>Provide safe and convenient access for all road users, in a way which would not:</i> 2. <i>compromise the free flow of traffic on the public highway, pedestrians or any other transport mode, including public transport and cycling; or</i> 3. <i>exacerbate traffic congestion on the existing highway network or increase the risk of accidents or endanger the safety of road users including pedestrians, cyclists and other vulnerable road users;</i> 4. <i>Incorporate pedestrian and cycle routes within and through the site, linking to the wider sustainable transport network."</i>	The Outline CTMP and PRoW Management Plan will secure requirements for access arrangements to ensure that all road users can move safely and conveniently throughout the works (see Section 5.5). Construction access points and traffic management measures are designed to avoid compromising the free flow of traffic on the public highway, pedestrian movements or other transport modes, including cycling and public transport. The routing and timing of vehicle movements are to be managed to minimise congestion and ensure that the risk of PICs is not increased, with specific attention to the safety of vulnerable road users. Temporary measures, where necessary, will be set out in the Outline CTMP to maintain safe pedestrian and cycle access through and around the construction areas, enabling access to the wider sustainable transport network where practicable.
Policy SP10: Connectivity and Transport Network <i>To improve connectivity and enhance the city's transport network, the council, working with its partners and utilising developer contributions will seek to:</i> 1) <i>deliver the following new highways schemes and initiatives:</i> i. <i>Sunderland Strategic Transport Corridor</i> ii. <i>(remaining phases);</i> iii. <i>Ryhope to Doxford Park Link Road;</i> iv. <i>Central Route section of Coalfield</i> v. <i>Regeneration Route; and</i> vi. <i>Improvements to the mainline and key junctions on the A19, including providing access to the IAMP;</i> 2) <i>improve the following transport routes and bus corridors to encourage walking and cycling and to reduce congestion:</i> i. <i>A183 Chester Road;</i> ii. <i>A690 Durham Road;</i>	The chapter will assess the impact from the construction traffic associated with the development for the A19 within Section 5.8. As noted, there is a need from the SCC to improve the mainline and key junctions on the A19 to improve connectivity. This chapter considers the impacts of the MHPGC Project related to traffic impact on walking and cycling delay and amenity (see Section 5.5). The assessment has detailed the potential impact of construction and decommissioning traffic on the highway network in the vicinity of the development taking into that National Cycle Route 1 passes by the access to Compound 3&4. The assessment for walking has focused on the potential impacts of construction and decommissioning traffic in the residential areas through Murton and nearby villages and towns. A Construction Worker Travel Plan (CWTP) will be produced as part of the Outline CTMP (CoT41) this will detail the walking and cycling facilities for workers to access the construction compound.

Policy description	How and where considered in the PEIR
iii. A1231 Sunderland Highway (west of the A19); iv. A1018 Newcastle Road; v. B1522 Ryhope Road; vi. Washington Road/North Hylton Road (east of A19); and vii. A182 Houghton/Hetton Road. 3) improve the operating conditions for buses, in particular through securing improvements to the major bus corridors identified above; and exploring park and ride opportunities; 4) support improvements to the Metro and rail network including new stations and routes where deliverable; 1) safeguard the following disused railway alignments for future use: i) Leamside line; and ii) South Hylton to Penshaw; 6. improve and extend the cycle network. 5) safeguard the following disused railway alignments for future use: i. Leamside line; and ii. Improve and extend the cycle network 6) Improve and extend the cycle network	
North East Local Transport Plan: Delivering Green Transport (2025) and noted in the North East Local Transport Plan: Delivery Plan (2025)	
Ambition 11: <i>"The network should be able to deal with disruptions, accidents, and extreme weather more effectively."</i>	This chapter considers how the MHPGC Project-related traffic and site operations will interact with the local transport network, taking account of potential disruptions and PICs (presented in Section 5.5). Temporary traffic management measures, routing strategies, and access arrangements will be designed to maintain network resilience. Extreme weather events are not explicitly taken into account in the assessment, however, they are considered more generally as an element in the safety category.
Ambition 12: <i>"Our highway network should provide essential access to all areas of the region, with particular emphasis on rural and coastal communities, who often bear the brunt of disruptive weather patterns."</i>	This chapter considers the potential effects of the MHPGC Project-related traffic on the highway network, including rural and coastal links within the Traffic and Transport Study Area (see Section 5.5). Access arrangements and routeing strategies are to be designed to maintain essential connectivity, ensuring that local residents and businesses continue to have safe and reliable access during construction and decommissioning.
Ambition 18: <i>"Roads should be made safer, with a specific focus on the most vulnerable users."</i> <i>[In particular:]</i> - All road users in our region should feel safe when using the network, including pedestrians, cyclists, wheelers, motorcyclists, car drivers, and heavy goods vehicle drivers. - However, there should be a specific focus on making roads safer for the most vulnerable users (defined as pedestrians, cyclists, motorcyclists, as well as horse riders and horse-drawn vehicles)."	This chapter assesses the interaction of the MHPGC Project related traffic and site operations with all road users, with particular emphasis on protecting vulnerable users such as pedestrians, cyclists, motorcyclists, and equestrian users (see Section 5.5). The Outline CTMP will set out measures to ensure that construction activities do not compromise road safety and that vulnerable road users are specifically considered.
Ambition 24:	This chapter considers how the MHPGC Project-related activities interact with the existing transport network,

Policy description	How and where considered in the PEIR
<i>"The region should no longer consider different forms of transport as separate networks and move to one integrated and highly interconnected network where people can make seamless door to door journeys.</i> <i>Seamless travel across different types of transport should help people to make greener journeys depending on their personal and journey circumstances."</i>	recognising the need to maintain safe and convenient access across different modes of transport (see Section 5.5). The Outline CTMP will set out temporary arrangements to maintain connections across modes where possible, supporting continuity of travel and minimising disruption.
Ambition 25: <i>"The integrated network should be based around making it easier to switch between different types of transport including public transport, active travel, taxis, and other transport options such as Park and Ride, micromobility and community transport.</i> <i>[In particular:]</i> <i>There should be a focus on ensuring there is strong integrated transport options for the beginning or end of an individual journey to or from a transport hub or service."</i>	As above, this chapter considers how the MHPGC Project-related activities may affect access to different transport modes, including public transport, walking, cycling, and other local transport options (see Section 5.5). The Outline CTMP will set out measures to manage temporary disruptions to public transport services, active travel routes and local interchanges.

5.3 Consultation and engagement

5.3.1 Scoping

- 5.3.1.1 A Scoping Report for the MHPGC Project was issued to the PINS and Marine Directorate – Licencing Operations Team (MD-LOT) in February 2025 (RPS, 2025). Following consultation with the appropriate statutory bodies, PINS (on behalf of the SoS) and MD-LOT both provided Scoping Opinions in March 2025 (PINS, 2025; MD-LOT, 2025, respectively).
- 5.3.1.2 **Table 5.4** sets out the key comments raised during the scoping process specific to traffic and transport, with details of how these comments have been addressed within the PEIR.

Table 5.4: Summary of scoping responses relevant to traffic and transport

Comment	How and where considered in the PEIR
PINS - EN0210005	
The Scoping Report proposes to scope out operational phase traffic and transport on the basis that operational traffic will consist of maintenance activities which is anticipated to be minimal. The Inspectorate agrees to scope this matter out subject to confirmation that the numbers and types of vehicles for all the operational phase is stated in the ES, with reference to relevant thresholds and agreement with relevant consultees that this matter would not give rise to a significant effect. ID 4.5.1	O&M activities are anticipated to be minimal. O&M of the onshore components of the MHPGC Project may involve remote monitoring, but also infrequent trips and inspections will occur. As maintenance will be undertaken only as required and potential corrective activities will be limited, it is anticipated that the MHPGC Project O&M phase will generate a small number of additional two-way vehicle movements due to infrequent staff trips and occasional maintenance activities. Accordingly, due to the absence of likely significant effects, impacts related to traffic and transport during the O&M phase have been scoped out of the assessment. To support this, a qualitative summary of the anticipated activities, including the likely vehicle numbers and types, during the O&M phase is provided in Section 5.6. At this stage the highway authorities agree that no assessment of the O&M phase will be required. This includes reference to any embedded mitigation measures of relevance.
The proposed study area has not been defined within the text, however reference points for data collection and the relevant roads and strategic network are shown. The ES	The proposed Traffic and Transport Study Area and the criteria used to define this are described in Section 5.4.2 of this chapter.

Comment	How and where considered in the PEIR
must provide a rationale for the study area used in the assessments and agree this where possible with the relevant consultation bodies. ID 4.5.2	This has been discussed with key stakeholders during the EWG process, to afford stakeholders the opportunity to highlight elements of the road network of interest and to be included within the assessment.
DCC	
It is recommended that the ES provides further clarification on the anticipated trip generation, vehicle types, and any ongoing transport-related activities associated with the operational phase. This should include an assessment of whether any long-term vehicle movements, such as maintenance or servicing requirements, could have cumulative effects on traffic flow, road safety, or infrastructure wear and tear. Additionally, if any abnormal load movements or periodic increases in traffic are expected during the operation of the development, these should be identified and assessed within the ES. Any necessary mitigation measures, such as routing strategies or traffic management plans, should also be outlined to ensure that the local highway network remains unaffected in the long term. Overall, subject to the provision of further supporting evidence within the ES, the proposal is not expected to result in any material impact on the local road network following the completion of the construction phase.	As referenced above, O&M activities are anticipated to be minimal and have been scoped out the assessment (further detail is provided in Section 5.6). Should works be required within the public highway for the construction phase, these will be undertaken in accordance with the New Roads and Street Works Act 1991 and the Outline Highway Access Management Plan (CoT10) which will be developed into a Detailed Highways Management Plan and agreed with the relevant highway authority to minimise disruption to road users.
NHs	
In accordance with National Highways' document: 'Planning for the future - A guide to working with National Highways on planning matters' (October 2023), Jacobs SYSTRA Joint Venture (JSJV)² would suggest that the Applicant enters discussions with National Highways at the earliest opportunity to agree any construction methods proposed that could be relevant to the SRN.	NHs have been actively involved with the Expert Working Group (EWG) which discusses key issues and approach to the ES. This engagement with NHs on the proposals will continue going forward.
It is proposed that the Operations & Maintenance (O&M) traffic and transport impacts will be scoped out because "O&M traffic is anticipated to be minimal, limited to infrequent on-site inspections and maintenance activities". Considering the proposals within the MHPGC project, JSJV would suggest that the approach taken is appropriate, however, would expect appropriate information to be presented to justify the proposed approach in the upcoming PEIR.	Detail on the rationale behind the scoping of impacts and justification of the impacts scoped in and out of assessment are provided in Section 5.6.
NHs will need to understand the likely traffic impact of the proposals upon the A19 and also the impacts with regards the adjacency of the proposals to the SRN.	The proposed Traffic and Transport Study Area is set out in Section 5.4.2 and includes sections of the A19 with potential for impacts from the MHPGC Project-related traffic. The Traffic and Transport Study Area has been discussed with key stakeholders during the EWG process, affording them the opportunity to highlight elements of the road network of interest and to be included within the assessment. The first EWG was on 9th December 2025 and prior to that, the Morven Hawthorn Pit Grid Connection Project Onshore Traffic and Transport Survey Approach was issued in September 2025.
JSJV supports the approach to refine the Study Area as the project is developed and would suggest that the following SRN junctions fall within the project scoping boundary and should, therefore, be considered (where appropriate) within the upcoming PEIR: A19 / A182 / B1283 (Easington) Junction; A19 / A182 / B1285	Each of the listed junctions are included within the proposed Traffic and Transport Study Area set out in Section 5.4.2. Key stakeholders have been invited to advise on any further junctions for consideration during the EWG process, with no additional locations requested to date.

Comment	How and where considered in the PEIR
(Hawthorn) Junction; and A19 / B1404 (Seaton Lane) Junction. Furthermore, subject to the residual cumulative impact of the proposed development, other SRN junctions may need to be considered within the upcoming EIA.	
JSJV will comment on the requirement for any additional (secondary) mitigation measures once we have reviewed the significance of the impacts on traffic and transport receptors. JSJV would, however, note that subject to the construction phase trip generation, and to ensure a vision-led approach is adopted in accordance with DfT Circular 01/022 and NPPF (2024), a Construction Worker Travel Plan may be required.	The findings of the assessment of the traffic and transport impacts of the MHPGC Project on receptors is set out in Section 5.8 . An Outline CTMP will be prepared and submitted with the application for development consent. Details are provided in Table 5.26 .
The CTMP will be prepared outlining measures to mitigate the impact of construction traffic including routing. JSJV would suggest that the CTMP should be produced and agreed with National Highways. JSJV would suggest that the CTMP will need to include at least the following: • Length of construction period; • Hours of operation; • Peak hour trip generation (including type of vehicles); • Construction traffic routes; • Construction traffic assignment at the srn (if appropriate); • Access arrangements; • Staffing numbers; • Contractor parking; • Details of delivery arrangements (including for any abnormal loads); • Mitigation measures – limited delivery times (and details of enforcement e.g., penalty clauses for contractor, noise reduction, wheel washing).	Details on the proposed scope of the Outline CTMP are provided in Table 5.26 . The Outline CTMP (CoT41) will be drafted to include the topics identified by JSJV with the intention that this submitted to National Highways for review and preliminary agreement on the measures included prior to submission of the DCO Application.
It is proposed that three types of construction vehicle movements will be associated with the MHPGC project: HGV movements to and from the SRN and the MHPGC project construction access, inter-project HGV movements between different construction accesses, and compounds and construction staff vehicle movements. The Scoping Report proposes that there will be a full assessment of the anticipated volume of construction traffic movements will be identified within the EIA Report. JSJV supports this approach.	Three types of construction vehicle movements associated with the MHPGC Project are considered. As per the MHPGC Project Scoping Report, these will include: • HGV movements to and from the SRN and the MHPGC Project construction access; • Inter-project HGV movements between different construction accesses, and compounds; • Construction staff vehicle movements.
The PRoW MP will identify appropriate management measures to provide a diversion of similar enhanced amenity. JSJV supports this approach.	The assessment in this chapter includes the impacts on PRoW within the Traffic and Transport Study Area (see Section 5.5). An Outline PRoW Management Plan will set out how this is to be managed (CoT35).
An AIL Access Study will outline the AIL delivery routes and appropriate management measures. JSJV would direct the Applicant towards NHs' Electronic Service Delivery for Abnormal Loads (ESDAL) system that must be used to notify NHs, the local highway authorities and the Police of ALL movement details, times, types and route. The ESDAL system must be used to notify the aforementioned authorities prior to the departure of each AIL. A full road condition survey of any proposed AIL delivery route must also be undertaken both before and after delivery. The method of the surveys will be discussed	The referenced guidance and notification procedures will be adhered to. An AIL assessment will also be completed as part of the DCO Application. This will identify the type and number of AIL deliveries required as part of the project, an assessment of anticipated vehicle routing and confirmation of any mitigation measures required to facilitate this.

Comment	How and where considered in the PEIR
and agreed with the relevant highway authorities prior to being undertaken. Swept path analyses must be provided for any AIL movements via the SRN.	

5.3.2 Further consultation and engagement

- 5.3.2.1 Following the MHPGC Project Scoping Report, a series of further consultation and engagement activities with key stakeholders has been undertaken, to discuss and agree the scope, methodology and data inputs to be used for the traffic and transport assessment, including any new or additional data required.
- 5.3.2.2 As part of the ongoing consultation with the Traffic and Transport & Noise and Vibration EWG, a technical note titled MHPGC Project Onshore Traffic and Transport Survey Approach was issued to EWG members in September 2025. The main purpose of this note was to seek agreement on the method for defining the Traffic and Transport Study Area (discussed in **Section 5.4.2**) and locations for additional transport survey (discussed in **Section 5.4.4**). Key comments raised in relation to this are summarised in **Table 5.5**.
- 5.3.2.3 The first meeting of the Traffic and Transport & Noise and Vibration EWG was held in December 2025. The discussion was focused on the proposed Traffic and Transport Study Area, additional traffic data compiled in November 2025 (see **Section 5.4.4**) and the method to be used for the analysis of PICs. Agreement was sought from EWG members on the Traffic and Transport Study Area and the robustness of data for the traffic and transport assessment.
- 5.3.2.4 The EWG meeting discussion also included details on the planned transport schemes and developments within the Traffic and Transport Study Area. Agreement was sought from EWG members on which committed schemes and committed developments are to be included as part of the assessment of cumulative effects set out on **Section 5.9**.
- 5.3.2.5 A meeting with DCC was held in May 2026. As part of this meeting, it was communicated that traffic surveys would be completed on Access Road to Jade Business Park, B1285 and A19 northbound on slip to provide a full set of baseline traffic data for the study area. In addition, the methodology for determining construction work traffic distribution and confirming the suitability of the study area was discussed. The scope and methodology of these traffic surveys and Technical Note setting out the construction worker traffic distribution was shared with DCC on 15/06/26.
- 5.3.2.6 A second EWG meeting was held in September 2026, which was attended by National Highways. At this meeting, there were discussions regarding construction worker traffic distribution and study area, key assumptions used and conclusions of this PEIR chapter and requirements for the Outline CTMP. Agreements were sought regarding the appropriateness of the study area, traffic surveys and construction worker traffic distribution for use within the assessments. At the time of writing, no written response has been received.

Table 5.5: Summary of further consultation and engagement

Date	Consultee and response type	Comment	How and where considered in the PEIR
September 2025	DCC response to 'Morven Hawthorn Pit Grid Connection Project Onshore Traffic and Transport Survey Approach' Technical Note	The Local Highway Authority (LHA) cannot accept data which is more than 5 years old, and so new counts would need to be taken for anywhere where 2019 data is identified as being the only data available. The Applicant requests that DCC share any additional count data for the junctions identified, or accident data or turning counts. Given the size of the area in question, and the number of junctions listed, it would be a time-consuming task to extract and check the data and provide it in a suitable form.	Automatic Traffic Counts (ATCs) have been undertaken on all key links within the Traffic and Transport Study Area to replace locations where existing data is more than five years old. This is detailed in Section 5.4.4 . The locations of the ATCs was agreed with DCC highways.

Date	Consultee and response type	Comment	How and where considered in the PEIR
		The Applicant requests that DCC... share information on committed schemes and future baseline.... While the LHA undoubtedly would have some of the information requested, the LHA does not have the resource to undertake this level of work.	A list of committed transport schemes and committed developments has been compiled based on details published by the relevant local transport authorities, local planning authorities and NHs. This has been discussed with the EWG to agree a suitable future baseline for this chapter. Detail is provided in Section 5.4.6 .
September 2025	NHs response to 'MHPGC Project Onshore Traffic and Transport Survey Approach' Technical Note	NHs would direct the Applicant to the NHs' WebTRIS service to access traffic data for SRN links within and beyond the PEIR red line boundary. National Highways has provided WebTRIS site references and their available data. If required, ATC surveys should be commissioned where recent traffic data is unavailable or deemed out of date. Any required surveys should be scheduled during "neutral" periods. Where junction surveys are required, link flows should be recorded over a minimum two-week period.	Web-based Traffic Information Service (WebTRIS) data has been extracted for the key A19 links within the Traffic and Transport Study Area. This is detailed in Section 5.4.4 . No junction surveys have been completed to inform this PEIR chapter as they are deemed to be unnecessary. This approach has been discussed and agreed with the EWG for the purposes of PEIR.
		For PIC data, NHs would direct the Applicant to the DfT's Mapping Application for Visualising Road Injury Casualties (MAVRIC) tool, ensuring the use of the latest 5-year dataset to identify any existing safety issues.	Data has been taken from the MAVRIC tool visualisation tools. This can be found in Section 5.4.5 .
		It is recommended that the Applicant engage with DCC to determine the potential influence of committed highway schemes and other infrastructure developments within the Study Area.	A list of potential committed highways and committed developments for inclusion within this assessment has been developed and discussed with Traffic and Transport & Noise and Vibration EWG members. No written response to or comment on the meeting minutes or content presented was received from EWG members following the EWG meeting. The list of schemes provided in Section 5.9 therefore reflects the current level of understanding of committed measures based on published information.
09 December 2025	Traffic and Transport and Noise and Vibration EWG Meeting. Attendees: NHs, JSJV and SCC Apologies: DCC, Environment	In relation to traffic and transport, the EWG meeting covered a number of topics, including the following: • Traffic and transport assessment scope; • Study Area; • Traffic and accident data; • Planned transport improvements and committed developments; • Scoping Opinion comments;	The scope of the assessment for traffic and transport is set out in Section 5.6.1 . The Traffic and Transport Study Area is defined in Section 5.4 . Data sources, including ATC surveys, used to characterise the baseline in relation to traffic and transport, are listed in Section 5.4.4 .

Date	Consultee and response type	Comment	How and where considered in the PEIR
	Agency, Sustrans NE	- Initial mitigation and commitments. No written response to or comment on the meeting minutes or content presented was received from EWG members following the EWG meeting. However, feedback provided during the EWG meeting included: - Confirmation that recent transport improvements to the A19/A182/B1285 (Hawthorn) Junction, B19/B1404 (Seaton Lane) Junction and A19/A182/B1283 (Easington) Junction improvement schemes are now completed together with the Ryhope to Doxford Link Road.	Planned transport improvements and committed developments are provided in Section 5.9 reflecting the current understanding of committed measures based on published information. Scoping responses relevant to traffic and transport and how they have been addressed in the PEIR are presented in Table 5.4. Commitments adopted by the MHPGC Project relevant to traffic and transport are set out in Table 5.26.
15 May 2026	Meeting with DCC	The following topics were discussed: - Completion of traffic surveys would be completed on Access Road to Jade Business Park, B1285 and A19 northbound on slip to provide a full set of baseline traffic data for the study area. - methodology for determining construction work traffic distribution and confirming the suitability of the study area. The scope and methodology of these traffic surveys and Technical Note setting out the construction worker traffic distribution was shared with DCC on 15/06/26.	Data sources, including ATC surveys, used to characterise the baseline in relation to traffic and transport, are listed in Section 5.4.4. The updated trip distribution for worker vehicles has been applied to establish which highway links are forecast to include worker vehicles. Detail is provided in Section 5.5.2.
12 June 2026	Construction Workforce Trip Distribution Technical Note	A construction worker trip distribution was established based on a one hour commuting time to ensure the Study Area was adequate for the PEIR assessment. This was sent to Durham County Council for approval. No feedback has been received to date.	The updated trip distribution for worker vehicles has been applied to establish which highway links are forecast to include worker vehicles. Detail is provided in Section 5.5.2. The meeting discussed the additional ATC surveys undertaken in summer of 2026
07 September 2026	Meeting with National Highways	The following topics were discussed: - construction worker traffic distribution and study area, - key assumptions used and conclusions of this PEIR chapter and - requirements for the Outline CTMP. Agreements were sought regarding the appropriateness of the study area, traffic surveys and construction worker traffic distribution for use within the assessments	Data sources, including ATC surveys, used to characterise the baseline in relation to traffic and transport, are listed in Section 5.4.4. Key parameters used in the assessment of potential impacts of the Project are defined in Section 5.6.

5.4 Baseline Characterisation

5.4.1 Overview

- 5.4.1.1 **Volume 1, Chapter 2: Project Description, of the PEIR** sets out the description of the MHPGC Project and **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information.
- 5.4.1.2 This section describes the methods and data sources used to characterise the baseline for traffic and transport within the Traffic and Transport Study Area and describes the existing baseline characteristics.

5.4.2 Relevant guidance

- 5.4.2.1 In addition to the relevant NPS provisions (described in **Table 5.1**), the preliminary assessment has been carried out in accordance with the following guidance documents:
- Guidelines for the Environmental Assessment of Traffic and Movement (ISEP, 2023);
 - Guidelines for Environmental Impact Assessment (IEMA, 2004);
 - The DMRB and specifically:
 - LA104: Environmental Assessment and Monitoring (Standards for Highways, 2020);
 - LA 112: Population and Human Health (Standards for Highways, 2020).
 - DfT Transport Analysis Guidance (TAG) and specifically:
 - Unit A3: Environmental Impacts, which provides guidance on air quality, noise, and vibration related to traffic;
 - Unit A4 social and distributional impacts, which provides guidance on the appraisal of the social impacts.

5.4.3 Traffic and Transport Study Area

- 5.4.3.1 The Traffic and Transport Study Area has been defined to assess the likely significant environmental effects arising from traffic associated with the MHPGC Project. This has focussed on the strategic and local roads to be used by construction and decommissioning-related traffic, in proximity to the MHPGC Project PEIR Red Line Boundary: Onshore and for wider traffic dispersal. Local roads include 'A', 'B', 'C' and 'unclassified' roads, whereas strategic roads consist of roads managed by NHs. The traffic associated with the O&M phase of the development is scoped out of the assessment as the impact will be negligible (see **Table 5.22**). This has been agreed with DCC and National Highways, as detailed in **Table 5.5**.
- 5.4.3.2 The MHPGC Project Scoping Report set out Annual Average Daily Traffic (AADT) data obtained from DfT for A and B roads near the MHPGC Project PEIR Red Line Boundary : Onshore. However, the MHPGC Project Scoping Report noted that, should there be a need for any additional up to date traffic survey data on any of the key links that will form the Traffic and Transport Study Area, this would be identified in consultation with the key stakeholders.
- 5.4.3.3 The Traffic and Transport Study Area and the key road, PRoW and cycle links within, as presented in **Figure 5.1**, have been determined with a focus on areas within or adjacent to the MHPGC Project PEIR Red Line Boundary: Onshore where potential impacts in relation to traffic and transport may occur. This has been determined with the application of the following criteria:
- The road network within MHPGC Project PEIR Red Line Boundary: Onshore;
 - A 500 metre (m) buffer around the MHPGC Project PEIR Red Line Boundary: Onshore, in accordance with DMRB LA 112 guidance;
 - SRN and local roads likely to experience a $\geq 30\%$ increase in traffic (or $\geq 10\%$ in sensitive areas), in line with Institute of Sustainability and Environmental Professionals (ISEP), (formerly Institute of Environmental Management and Assessment (IEMA)) guidance 'Environmental Assessment of Traffic and Movement' (2023), and any PRoW or cycle links that have the potential to interact with these roads identified.

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- 5.4.3.4 The latter includes routes expected to carry HGVs and workforce vehicles relating to the MHPGC Project.
- 5.4.3.5 The key road, PRoW and cycle links identified within the Traffic and Transport Study Area are presented in **Table 5.6**. This includes detail of the link ID, road, PRoW or cycle route name and their specific sections included within the assessment. These correspond to the link numbers provided in **Figure 5.1**. Full details on the links and the assessment of their sensitivity can be found in **Volume 3, Annex 5.1: Description of Network Links and Sensitivity, of the PEIR**

Figure 5.1: Traffic and Transport Study Area

Table 5.6: Key road, cycle and PRoW links within the Traffic and Transport Study Area

Link ID	Road name / link
L1	A19 from Burdon Lane to Seaton Lane
L2	A19 from Seaton Lane to B1285
L3	A19 from B1285 to A182
L4	A19 from A182 to Hall Walks
L5	A19 from Hall Walks to the south
L6	A1018 Stockton Road from St Benedict's Way roundabout to B1285 roundabout
L7	A1018 Stockton Road from A19 to B1285 roundabout (northbound)
L8	A1018 Stockton Road from B1285 roundabout to A19 (southbound)
L9	B1285 Stockton Road from roundabout to Lord Byron's Walk
L10	B1404 Seaton Lane west of A19 slips
L11	B1404 Seaton Lane East of A19 slips
L12	Westlea Road (B1285) from Lord Byron's Walk to Graham Way roundabout
L13	Westlea Road (B1285) from Graham Way roundabout to B1432 Stockton Road
L14	B1285 between Stockton Road junction and A19 slips signal junction
L15	B1285 Church Street from B1285 (signal junction) to Briar Glen
L16	B1285 Church Street from Briar Glen to the West
L17	B1285 from B1285 Church Street to A182
L18	A182 from A19 roundabouts to the east
L19	A182 link road between A19 slips / B1285 Link Road
L20	Access Road from A182 to Jade Business Park
L21	B1432 Stockton Road from A182/B1285 junction to West Lane
L22	West Lane
L23	A19 Slip
L24	Jade Access Road 1
L25	Jade Access Road 2
L26	Footpath 9 north and south of the A182
L27	Bridleway 16 north and south of the A182
L28	Footpath 28 crossing Jade Access Road
L29	Bridleway 29 crossing of Jade Business Park entrance road (Jade Access Road 2) and in proximity of Jade Access Road
L30	National Cycle Route 1: South Hetton to Ryhope crossing of Jade Business Park entrance road (Jade Access Road 2) and in proximity of Jade Access Road and A182 link road between A19 slips / B1285 Link Road

5.4.4 Baseline Data Sources

Desk study

- 5.4.4.1 To establish the existing baseline traffic and transport conditions within the Traffic and Transport Study Area, relevant data sources were reviewed and assessed. The relevant data was obtained from the associated sources as detailed in **Table 5.6**.

Table 5.7: Summary of baseline transport data sources

Topic	Source	Year accessed
Identification of sensitive receptors	Google Maps and Google Earth Pro	2026
Adopted highways	DCC – Adopted Highways Map	2026
Existing publicly available traffic survey / traffic flow data	DfT Road Traffic Statistics NHs WebTRIS	2026
Railway network and services information	National Rail – Timetable Information	2026
Bus service information	GoNorthEast – Timetables and Maps Arriva – North East	2026
Navigable waterways information	Inland Waterways Association – Map of the UK Inland Waterways	2026
Active travel routes (including National Cycle Network and National Trail routes) and PRow	Walk Wheel Cycle Trust – The National Cycle Network DCC - Definitive Public Rights of Way map online SCC Public rights of Way National Trails – The Trails	2026
PIC data	DfT MAVRIC tool DfT average road accident statistics	2026
Traffic growth forecasts	National Trip End Model (NTEM) background traffic growth factors derived from the Trip End Model Presentation Programme (TEMPro) v8.1 National Road Traffic Projections (NRTP) 2022	2026

Site specific surveys

- 5.4.4.2 To establish existing background traffic conditions on the local highway network within the Traffic and Transport Study Area, where no suitable data sources were available, a total of 12 ATC and 2 Radar surveys were undertaken in November 2025 and July 2026. This included locations where no existing data was available and those where existing data was no longer considered sufficiently robust due to the age of the data (see **Section 5.3.2**) and changes in traffic levels associated with the COVID-19 pandemic, new transport infrastructure or development / construction projects. This includes the recently completed traffic signalisation of the A19 / Access Road to Jade Business Park junction, Eastern Green Link substation and Hawthorn Pit Battery Energy Storage System at Jade Business Park. Details of the ATC survey locations, which have been discussed and agreed with DCC, can be found in **Table 5.10** and **Figure 5.2**.
- 5.4.4.3 The surveys recorded traffic flows at 15-minute intervals over a continuous seven-day period from Monday 3 November 2025 to Sunday 9 November 2025 or between 9 July 2026 and 16 July 2026. Five-day and seven-day average traffic flows recorded at each ATC have been converted to 24-hour AADT for use in this assessment. The completion of seven-day traffic surveys is considered to be robust as it records all the movements over a week, taking account of daily variations in traffic volume, thereby providing a representative basis for assessing the average traffic conditions and network performance.
- 5.4.4.4 This traffic data also informs **Volume 3, Chapter 6: Onshore Noise and Vibration, of the PEIR** and **Volume 3, Chapter 7: Onshore Air Quality, of the PEIR**.

Baseline data limitations and assumptions

- 5.4.4.5 This chapter has been developed using the best available data at the time of PEIR preparation, informed by desk-based review, consultation feedback received to date, and industry-standard assessment methodologies.
- 5.4.4.6 The following limitations should be considered with the data presented here:
- Traffic surveys may not account for short-term network changes, including recent developments, highway works or changes in regulation which have occurred since the survey period;
 - PIC data relates only to incidents that have been reported to the police and may therefore under-represent the actual number of slight injury collisions, with damage-only collisions also not captured;
 - Public transport (bus and rail) routes and timetables are correct at time of preparation, but are subject to regular review and change, particularly as new developments (currently under construction) within the area are completed. New proposals will be considered as part of the Cumulative Assessment in **Section 5.9**;
 - Walking and cycling routes and PRoW are based on existing mapping material, but may not reflect recent changes or expansion. New proposals will be considered as part of the Cumulative Assessment in **Section 5.9**;
 - Future baseline traffic conditions have been established by applying the DfT's TEMPro growth factors which reflect regional trends, but do not account for changes in travel behaviour or future policy interventions.

5.4.5 Overview of baseline environment

Overview

- 5.4.5.1 This section describes the existing transport network within the defined Traffic and Transport Study Area. The baseline has been established through desktop review of highway mapping, aerial imagery, and site reconnaissance, supported by the identification of representative links forming the assessment network.

Highway Network

- 5.4.5.2 The road network within the Traffic and Transport Study Area comprises a mixture of A, B and local classified roads, offering connectivity between local towns and villages (including Seaham, Murton

and Dawdon), links to Sunderland and Durham and access to the SRN for long distance journeys. Local roads within the Traffic and Transport Study Area are managed by DCC and SCC as the highway authorities (and therefore do not include the A19 which is discussed below).

- 5.4.5.3 The roads set out in **Table 5.8** form the primary routes within the Traffic and Transport Study Area (see **Figure 5.1**).

Table 5.8: Primary routes within the Traffic and Transport Study Area

Route	Description
A1018 Stockton Road	A dual carriageway link, with a 50mph speed limit connecting Seaham to the A19 and north to Sunderland.
A182	A key local distributor linking the A19 to Murton and Seaham, comprising a mix of 30mph, 40mph and 50mph sections.
B1285 Stockton Road and Church Street	Local distributor roads with a 30mph speed limit linking the A182, Murton and Seaham town centre.
B1404 Seaton Lane	An east to west route through Seaton Village with a 30mph limit (reducing to 20mph near local schools).
B1432 Stockton Road/Sunderland Road	Linking Hawthorn to the B1285 to the north and A182 to the south and comprising a mixture of 30mph residential and 60mph rural sections.

- 5.4.5.4 Other roads within or adjacent to the Traffic and Transport Study Area include Westlea Road and West Lane. These generally serve local residential areas, schools, and community facilities and are characterised by 20mph to 30mph limits and street lighting.
- 5.4.5.5 Traffic associated with the MHPGC Project is expected to utilise a combination of the A19, A182, A1018 and selected B roads (notably B1285, B1432 and B1404) to reach construction access points and temporary compounds. Detailed access arrangements will be confirmed as part of the Outline Highways Access Management Plan (CoT10).
- 5.4.5.6 The onshore export cable corridor and AC connection cable corridor are expected to cross several roads, including the A19 and B1432..
- 5.4.5.7 The Onshore Crossing Schedule (CoT51) will be produced to identify the crossing of roads, railways and other features. At the A19, B1432 and railway trenchless techniques will be used to avoid any potential traffic and transport impacts associated with construction of the onshore cable corridor crossing this infrastructure.

SRN (A19)

- 5.4.5.8 The SRN within the Traffic and Transport Study Area is managed by National Highways and is formed by the A19, a key north to south route providing strategic connectivity between Newcastle upon Tyne, Middlesbrough, and York. As shown in **Figure 5.1** the A19 also serves as the main access corridor to Seaham and surrounding settlements, linking with the highway network via a series of grade-separated junctions. It is assumed most traffic related to the MHPGC Project will use the A19 to access the Traffic and Transport Study Area.
- 5.4.5.9 The A19 passes to the west of Seaham and provides direct connections to the A182, A1018 (Stockton Road) and B1285 (Stockton Road), each of which link the SRN to the local road network and the wider coastal area. These junctions facilitate high-capacity access to Seaham Grange Industrial Estate, Jade Business Park, and the residential areas of Seaton and Westlea, and are expected to form the primary traffic connection points associated with the MHPGC Project.
- 5.4.5.10 To the northwest of the Traffic and Transport Study Area, the A19 links to the A690 providing a connection to the A1(M) motorway.

Traffic flows

- 5.4.5.11 To establish the baseline traffic conditions for the Traffic and Transport Study Area, a combination of publicly available data and project-specific surveys have been used (see **Table 5.7**). The purpose of these datasets is to provide robust AADT estimates for the key highway links likely to be affected by MHPGC Project-related traffic within the Traffic and Transport Study Area.
- 5.4.5.12 Existing baseline traffic data has been obtained from the DfT Road Traffic Statistics (2024 release) Traffic Counts site. These datasets provide verified AADT estimates derived from manual and ATC conducted across the national road network.
- 5.4.5.13 DfT count locations used in this assessment are situated on A-class and B-class roads within or immediately surrounding the Traffic and Transport Study Area. These include sections of the A19, A182, and B1285 (Stockton Road) and West Lane.
- 5.4.5.14 The DfT AADT data details counts for all motor vehicles, together with disaggregated classifications, total vehicles and HGVs. These datasets have been used to define existing traffic composition and proportions of HGV activity across the Traffic and Transport Study Area.
- 5.4.5.15 In areas where no recent or representative DfT traffic count data were available, ATC surveys were undertaken to fill these baseline data gaps. The ATCs were commissioned specifically for the MHPGC Project and are described in detail in **Section 5.4.4**. These were installed at key highway links where MHPGC Project-related vehicle activity is expected to occur and where DfT coverage was absent.
- 5.4.5.16 The combined use of DfT AADT data and project-specific ATC results provides a comprehensive baseline of traffic conditions across both the SRN and key road links, ensuring full coverage of all routes relevant to traffic routing and subsequent EIA assessment.
- 5.4.5.17 Where the source base year is prior and post to 2025, TEMPro growth factors have been applied to present 2025 data, the TEMPro growth factors are presented in **Table 5.9** based on the different road type.

Table 5.9: TEMPro Growth Factors

	2022-2025	2023-2025	2024-2025	2026-2025
Minor	1.02	1.01	1.01	0.99
A-Road	1.02	1.01	1.01	0.99
Trunk	1.03	1.02	1.01	0.99
Motorway	1.03	1.02	1.01	0.98

- 5.4.5.18 The locations of all DfT count sites, ATC and Radar survey points used in this assessment are detailed in **Table 5.10** and illustrated in **Figure 5.2**.

Table 5.10: Baseline traffic data

ID No.	Road Name / Route	Description	2025 AADT		Source	Source Base Year
			Total vehicles	HGVs		
E1	A19	Strategic north–south trunk road connecting Teesside and Tyneside.	62,172	3,566	DfT	2024
E2	A182	A-road off A19 that provides access to Dawdon and south Seaham.	9,185	353	DfT	2022
E3	West Lane	Rural road south of MHPGC Project PEIR Red Line Boundary: Onshore, connecting B1432 to A182.	794	0	DfT	2024
E4	A19 (North)	Northern extent of A19 beyond the MHPGC Project PEIR Red Line Boundary: Onshore.	53,604	3,390	DfT	2024

ID No.	Road Name / Route	Description	2025 AADT		Source	Source Base Year
			Total vehicles	HGVs		
E5	A19 (South)	Southern section of A19 within MHPGC Project PEIR Red Line Boundary: Onshore.	66,476	3,907	DfT	2023
E6	A19 (South)	Southern section of A19 outside of MHPGC Project PEIR Red Line Boundary: Onshore.	68,550	3,358	DfT	2024
A1	St. Benedict's Way (West)	To West of A1018/Stockton Road Roundabout	6,110	814	ATC	2025
A2	Stockton Road (North)	To North of A1018/Stockton Road Roundabout	10,407	1,203	ATC	2025
A3	A1018 (East)	To East of A1018/Stockton Road Roundabout	11,494	1,690	ATC	2025
A4	A1018	In between A1080/B1285 Roundabout and A1018/Stockton Road Roundabout.	20,870	2,979	ATC	2025
A5	A1018	A1018 to South of Roundabout with B1285.	16,445	3,241	ATC	2025
A6	B1285 (North)	Between B1285 to South and A1018 Roundabout to North.	6,594	758	ATC	2025
A7	B1404 / Seaton Lane (East)	To West of B1404/B1285 Junction.	11,315	1,389	ATC	2025
A8	B1404 / Seaton Lane (West)	To West of A19.	5,608	698	ATC	2025
A9	B1285 (Seaham)	To south of Station Road.	9,881	1,179	ATC	2025
A10	B1285 (Morton)	To west of Morrisons Roundabout.	16,323	1,600	ATC	2025
A11	B1432 (Stockton Road)	Between B1285 to North and West Lane to South.	5,893	759	ATC	2025
A12	B1285 (West)	To West of Murton Lane.	7,168	878	ATC	2025
A13	A182 (West)	A182 to West of Salter's Lane (Just Before Easington Lane)	10,487	1,664	ATC	2025
A14	A182 (West)	A182 to East of Salter's Lane (In South Hetton)	8,310	1,255	ATC	2025
A15	Salter's Lane	To South of junction with A182	3,596	642	ATC	2025
A16	A182	Between West Lane to North and Roundabout to South	6,377	1,047	ATC	2025
A17	Durham Road	To South of Roundabout with A182	4,248	763	ATC	2025
A18	B1283	Between A19 SB On-Slip to West and Stockton Road to East	7,968	1,043	ATC	2025
A19	Stockton Road	Stockton Road A19 Southbound On-Slip	1,607	234	ATC	2025
A20	Jade Business Park Access Road	Between A19/A182 junction and Jade Business Park	798	40	ATC	2026
A21	B1285	Between B1285/A19 junction and A182/A19	15,705	3,990	Radar	2026
A22	A19 slip road	Northbound slip road to A19 at A19/B1285 junction	4,576	509	Radar	2026

ID No.	Road Name / Route	Description	2025 AADT		Source	Source Base Year
			Total vehicles	HGVs		
A23	Jade Access Road 1	Between Jade Business Park northern roundabout and Jade Business Park entrance road.	470	12	ATC	2026
A24	Jade Access Road 2	Between Jade Business Park southern roundabout and Jade Business Park entrance road.	798	40	ATC	2026

5.4.5.19 The data for A24 Jade Access Road 2, has been applied to A20: Jade Business Park Access Road, as all current traffic on Jade Business Park Access Road would utilise Jade Access Road 2.

Figure 5.2: Baseline traffic data locations

Rail network

- 5.4.5.20 The nearest railway station, Seaham Station, is managed by Northern Trains and is located 2.5km from the MHPGC Project PEIR Red Line Boundary: Onshore, outside the Traffic and Transport Study Area. The station provides regional connections with approximately hourly services to Newcastle, Sunderland, Hartlepool, and Middlesbrough, forming part of the Durham Coast Line. The station includes a small car park (nine spaces) and cycle parking facilities.
- 5.4.5.21 The MHPGC Project PEIR Red Line Boundary: Onshore crosses the Durham Coast railway line to the south of Seaham Station. Seaham station and surrounding rail intersections are shown in **Figure 5.1**.
- 5.4.5.22 An Outline Onshore Schedule (CoT51) will be submitted with the DCO application detailing the trenchless techniques to be used for crossing the Durham Coast railway line.

Navigable waterways

- 5.4.5.23 The MHPGC Project PEIR Red Line Boundary: Onshore does not cross any navigable waterways. The nearest navigable waterway is the River Wear, located approximately 6km north of the MHPGC Project PEIR Red Line Boundary: Onshore between Chester-le-Street and Sunderland, where it discharges into the North Sea.

Bus network

- 5.4.5.24 The local bus network provides regular connections between Seaham, Sunderland, Peterlee, Easington, and Hetton-le-Hole. Services are primarily operated by Go North East and Arriva North East, running along key local routes including the A1018 (Stockton Road), A182, and B1285 corridors.
- 5.4.5.25 An overview of the key services operating within the Transport and Traffic Study Area is provided in **Table 5.11**.

Table 5.11: Key local bus services and local stops within the Traffic and Transport Study Area

Operator / Source	Route	Key local stops	Frequency (Monday to Friday)	First service	Last service
Arriva North East https://www.arrivabus.co.uk/ Accessed 8th July 2026	22: Durham to Sunderland (via Peterlee)	Dalton Park Cold Hesledon Hawthorn Road Dalton-le-Dale Seaham Grange Ryhope	Every 30 minutes (each direction) in daytime; hourly evening service	07:03	21:48
	ED2: Peterlee to Blackfell	Murton South Hetton Easington Lane Hetton-le-Hole	1 service daily each direction	07:12	17:35
	ED4: Peterlee to North Hylton	Seaham New Seaham Ryhope	1 service daily each direction	07:12	17:35
Go North East https://www.gonortheast.co.uk/ Accessed 8th July 2026	61: Pennywell and Sunderland to Murton and Peterlee	Murton Dalton Park Dalton-le-Dale Seaham Grange Ryhope	Every 30 minutes (each direction) in daytime; hourly evening service	06:35	17:23
	861: Murton to New Seaham	Dalton Park	1 service daily each direction	07:39	15:11

Operator / Source	Route	Key local stops	Frequency (Monday to Friday)	First service	Last service
	Prince Bishops 65: Seaham to Durham	New Seaham Dalton Park Murton Hetton-le-Hole	Every 30 minutes (each direction) in daytime; hourly evening service	06:36	20:48
	60: Parkside to Sunderland	Parkside Dawdon Seaham New Seaham Ryhope	Every 30 minutes (each direction) in daytime; hourly evening service	04:43	23:07
	X1(A): Newcastle - Dalton Park	Hetton-le-Hole Murton	Hourly service each direction	05:52	19:49
	X-lines X6: Sunderland to Peterlee	Seaham Spectrum Business Park Dalton Park	Every 30 minutes (each direction) in daytime; hourly evening service	06:51	19:11
	X-lines X10: Newcastle to Middlesbrough	Dalton Park	Hourly service each direction	06:00	22:05
	X62: Peterlee - Durham	Easington South Hetton Easington Lane	1 service daily each direction	07:35	16:10
Gateshead Central Buses https://bustimes.org/services/71-chester-le-street-seaham Accessed 8th July 2026	71: Chester-le-Street to Seaham	Seaton New Seaham	Hourly service each direction	07:35	20:52

Cycle network

5.4.5.26 Two National Cycle Network (NCN) routes are located with the Traffic and Transport Study Area:

- NCN Route 1 (North Sea Cycle Route) – running north–south along the coastline through Seaham, connecting Sunderland to Hartlepool;
- NCN Route 70 (The Walney to Wear Trail) – connecting to Route 20 near Doxford Park.

5.4.5.27 NCN Route 1 has been considered within the assessment of traffic and transport effects. NCN Route 70 is excluded from further assessment given only 600m of the route on Hangman's Lane falls within the Traffic and Transport Study, with this link not being a link identified as being used by construction traffic associated with the Project. The NCN routes are illustrated in **Figure 5.3**.

PRoW network

5.4.5.28 An extensive PRoW network is present in the vicinity of the Traffic and Transport Study Area, spanning the administrative areas of DCC and SCC.

5.4.5.29 PRoWs that may be affected by the MHPGC Project include those that are crossed by the onshore export cable corridor, located within or adjacent to construction access corridors, or otherwise intersected by construction traffic routes. The PRoW network in the Traffic and Transport Study Area is illustrated in **Figure 5.2**.

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- 5.4.5.30 The nearest National Trail is the King Charles III England Coast Path (North East section), which follows the coastline between Bridlington and Filey Brigg, passing through Middlesbrough, Seaham, and Sunderland.
- 5.4.5.31 In addition, the Hetton Warden Law Trail, a local recreational walking and cycling route located north of Hetton-le-Hole and east of Houghton-le-Spring, is intersected by the MHPGC Project PEIR Red Line Boundary: Onshore.
- 5.4.5.32 PRoW which could potentially be affected by changes in traffic and transport on highway links include footpaths, bridleways and cycle routes in close proximity to highway links or require the need to cross highway links. The following PRoWs which meet this criteria are:
- Footpath 9, which is present north and south of the A182;
 - Bridleway 16, which is present north and south of the A182;
 - Footpath 28, which is present north and south of Jade Access Road;
 - Bridleway 29 which is in close proximity of Jade Access Road and requires the crossing of the entrance road to Jade Business Park.

Figure 5.3: Map of local cycle network and PRow network

Collision analysis

- 5.4.5.33 PIC data has been obtained from DfT's STATS19 national collision database, which provides verified records of all police-reported road traffic collisions in Great Britain. The dataset includes details of the location, date, severity of injury (slight, serious, or fatal), vehicle type, and whether vulnerable road users (pedestrians or cyclists) were involved.
- 5.4.5.34 Data covering the five-year period from January 2021 to December 2025 have been extracted for all roads and junctions forming part of the Traffic and Transport Study Area. The dataset has been analysed to identify patterns in collision frequency, severity, and road user type to inform the baseline safety conditions.
- 5.4.5.35 A summary of recorded PICs by severity is provided in Error! Reference source not found.. The corresponding PIC locations are illustrated in **Figure 5.3**.

Table 5.12: Summary of PICs within the Traffic and Transport Study Area by severity (2021-2025)

Severity	Total PICs (2020-2025)
Fatality	6
Serious injury	29
Slight injury	58

- 5.4.5.36 Collision clusters are typically defined as areas where four or more PICs have occurred within 25m of the same location within a five-year period. There have been no collision clusters identified on the routes within the Traffic and Transport Study Area.
- 5.4.5.37 Of the six fatalities recorded, one occurred on Jade Access Road, four occurred on the A19, and one occurred on Westlea Road. The B1285 between the junction with the A1018 and edge of the Traffic and Transport Study Area to the East of Easington Lane had the highest number serious injury collisions with thirteen and the A19 had seven.

Figure 5.4: Map of PICs within the Traffic and Transport Study Area by severity (2020-2024)

5.4.6 Future baseline conditions

- 5.4.6.1 During the 35 year operational lifetime of the MHPGC Project, the Traffic and Transport baseline can be expected to evolve both on a natural basis and in response to global trends. The Infrastructure Planning (EIA) Regulations 2017 require that "an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge" is included. Therefore, an assessment of future baseline conditions, in the absence of the MHPGC Project, has been undertaken and is described within this section.
- 5.4.6.2 Ahead of the anticipated construction start of the MHPGC Project in 2033, notable changes in existing baseline traffic within the Traffic and Transport Study Area are to be expected, reflecting new developments within the wider area, changes in housing and employment and changes in travel behaviour. This is taken account of through provision of an assessment of future baseline conditions, in the absence of the MHPGC Project, which has been undertaken and is described within this section.
- 5.4.6.3 To derive a baseline estimate of traffic flows in 2033, traffic growth factors have been applied to the baseline traffic flow data detailed in **Section 5.4.5** and presented in Table 5.13. These growth factor values have been determined using the DfT's TEMPro software which is able to extract growth factors for the Seaham District from the NTEM. These growth factors include forecast changes in local population, employment, housing, car ownership and trip rates, including committed developments identified at the time of the most recent software update. The analysis has been based on the Core Scenario in TEMPro v8.1 (released in 2023). These values are applied to observed traffic counts.
- 5.4.6.4 As TEMPro factors relate only to total traffic volume changes, figures for HGV traffic growth have been derived using 'Core Scenario' from the latest version of the DfT NRTP published in 2022. These are also based on growth factors for the North East Region. The TEMPro factors used to growth the 2025 baseline flows to 2033 is presented in **Table 5.13**.

Table 5.13: TEMPro growth factors 2025-2033

Road Type	Growth Factor
Minor Road	1.0892
A-Road	1.0879
Trunk	1.1053
Motorway	1.1263

- 5.4.6.5 The future baseline will also include traffic associated with relevant cumulative developments identified at this stage and agreed with stakeholders as part of this PEIR. Trips generated by these schemes will be added to the future baseline traffic flows. This ensures that any additional growth in trips, which is not already included in the growth factor for traffic in the Seaham District (including additional construction traffic associated with these developments), is considered as part of the assessment of the impact of the MHPGC Project on the highway network. The cumulative schemes and associated assumptions are presented in **Section 5.9**.

5.5 Impact assessment methodology

5.5.1 Overview

- 5.5.1.1 **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information. This section describes the technical methods used to determine the sensitivity of the receptors and magnitude of effects and sets out the significance criteria that have been used for the traffic and transport assessment. The methodologies for assessing sensitivity, magnitude and significance for traffic and transport are described in more detail below.

Methodology

- 5.5.1.2 The methodology for assessing the likely significant effects of the traffic generated by the MHPGC Project has been developed in accordance with:
- The ISEP (formerly IEMA) guidelines for the Environmental Assessment of Traffic and Movement (2023);
 - The DMRB LA104: Environmental Assessment and Monitoring (2020);
 - The DMRB LA112: Population and Human Health Revision 1 (2020).
- 5.5.1.3 The significance of traffic and transport environmental effects has been assessed by considering the interaction between the magnitude of the impacts and the sensitivity of the receptors in the vicinity of transport corridors (including local and strategic roads, PRoW and cycle routes) within the Traffic and Transport Study Area.
- 5.5.1.4 The ISEP (formerly IEMA) guidelines state that the perceptible impact of changes in traffic flow on the environment is less sensitive than changes in traffic flow at junctions on the surrounding network. The ISEP Guidelines suggest that the following criteria are adopted to assess whether public road links are to be the subject of environmental assessment:
- “Rule 1 – Include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%)”;*
- “Rule 2 – include highway links of high sensitivity where traffic flows have increased by 10% or more”.*
- 5.5.1.5 The ISEP (formerly IEMA) guidelines state that projected changes in traffic of less than 10% over the course of a day creates no discernible environmental impact, given that daily variations in background traffic flow may fluctuate by this amount, and that a 30% change in traffic flow represents a reasonable threshold for including a public road link within the assessment. Although construction traffic movements are temporary in duration, an increase in traffic could adversely affect the users of road links. Consequently, the receptors that have been assessed are the public road links which would be used by the MHGPC Project at each project phase.

5.5.2 Receptor sensitivity

- 5.5.2.1 When defining sensitivity, reference has been made to the criteria levels set out in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR**. To determine sensitivity of the receptor, the vulnerability of the receptor to the specific impact and its ability to recover and adapt were also considered.
- 5.5.2.2 Network links represent distinct sections of the strategic and local roads, PRoW and cycle routes identified within the Traffic and Transport Study Area. A total of 30 network links have been identified reflecting changes in character/land use, the layout, size and the use of the road. A single road may therefore be formed of multiple network links.
- 5.5.2.3 Details of the links included within this analysis are provided in **Volume 3, Annex 5.1: Description of Network Links and Sensitivity, of the PEIR**. Each link description includes consideration of the following attributes:
- Link type;
 - Typical carriageway width;
 - Forward visibility;
 - Provision of footways;
 - Presence of street lighting;
 - On-street parking;
 - Posted speed limit;
 - Nature of frontage access.
- 5.5.2.4 In accordance with the ISEP (formerly IEMA) guidelines, each link has been assigned a sensitivity level. This is based on the susceptibility of users and receptors to changes in traffic, movement and accessibility. These include pedestrians, cyclists, equestrians, public transport users, local residents and businesses.

5.5.2.5 The assessment of the impact of traffic is dependent upon a wide range of factors, including the volume of traffic, traffic speeds and traffic composition (such as percentage of HGVs of total traffic). Additionally, the ISEP (formerly IEMA) guidelines states that the perception of changes in traffic can vary according to factors such as:

- Existing traffic levels;
- The location of traffic movements;
- The time of day;
- Temporal and seasonal variation of traffic;
- Design and layout of the road and pavement;
- Crossing points;
- Landscape/townscape character, designated status, land use activities adjacent to the route;
- Ambient conditions of adjacent land uses.

5.5.2.6 Each link has been assigned a sensitivity score (ranging from high to negligible sensitivity). This assessment has been based on professional judgement, guided by the ISEP (formerly IEMA) guidelines. The criteria used in this assessment are set out in **Table 5.14**.

Table 5.14: Definition of terms relating to the sensitivity of the receptor

Sensitivity	Definition
High	Links with a high sensitivity to changes in traffic flows. These include links within highly built-up areas; links with high levels of pedestrian, cyclist or other vulnerable road user activity (including routes with schools, colleges or playgrounds); narrow roads with high numbers of pedestrian/cycle users, but with narrow/no existing footway provision; links which are already subject to congestion, delay or stress; and links with accident blackspots.
Medium	Links with a medium sensitivity to changes in traffic flows. These include links with congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreation facilities, roads with accident rates close to the national average.
Low	Links with a low sensitivity to changes in traffic flows. These include those which are sufficiently distant from affected roads and junctions or where no receptors are present. Examples include roads with good pedestrian infrastructure (e.g. wide pavements, crossings and traffic calming) and relatively low numbers of pedestrians and cyclists.
Negligible	Links with negligible sensitivity to changes in traffic flows. These include routes with no sensitive receptors and very few land uses alongside them (or where these land uses have no direct access or sufficiently set back from the carriageway); links with no/very limited pedestrian/cyclist uses; and/or links which can easily accommodate changes in traffic flow with no impact on congestion, delay or stress.

5.5.2.7 Sensitivity of links for Severance, Non-motorised User Delay, Non-motorised User Amenity and Fear and intimidation have utilised the criteria set out above in Table 5.14. Sensitivity for Driver Delay, however, is based on junction capacity and for Road Safety, collision risk factors and PICs are taken into account.

5.5.2.8 Sensitivities for the PRoW and National Cycle Route 1 have utilised Table 3.11 within DMRB LA 112 Guidance for the category of Severance and Fear and Intimidation, as this table provides sensitivities for walkers, cyclists and horse riders crossing roads. A summary of the Table 3.11 of DMRB LA 112 is provided in **Table 5.15**.

Table 5.15: Definition of terms relating to the sensitivity of the receptor

Sensitivity	Walking, Cycling and Horse Riding Routes Definition
Very High	National trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient walking, cycling and horse-riding route. Little / no potential for substitution.

Sensitivity	Walking, Cycling and Horse Riding Routes Definition
	Routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. Rights of way of walking, cycling and horse-riding crossing roads at grade with >16,000 vehicles per day.
High	Regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution. Rights of way for walking, cycling and horse-riding crossing roads at grade with >8,000-16,000 vehicles per day.
Medium	Public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer recreational journeys. Rights of way for walking, cycling and horse-riding crossing roads at grade with >4,000-16,000 vehicles per day.
Low	Routes which have fallen into disuse through severance or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes. Rights of way for walking, cycling and horse-riding crossing roads at grade with <4,000 vehicles per day.

5.5.2.9 The ISEP (formerly IEMA) guideline Rules 1 and 2 are applied to determine what links are taken forward for the assessment. Where predicted changes in traffic flow fall beneath these levels, an assessment of effects is not required, as there would be no discernible impact on the baseline environment.

5.5.3 Magnitude of impact

- 5.5.3.1 The magnitude of an impact that could affect traffic and transport is influenced by several key factors, including the scale of the change, the spatial extent the impact is likely to occur and the duration and frequency of the impact. When defining the magnitude of the impact, the guidance for traffic and transport impact assessment set out in the ISEP (formerly IEMA) 2023 guidelines has been followed.
- 5.5.3.2 The ISEP (formerly IEMA) guidelines set out considerations, and in some cases thresholds, in respect to changes in the volume and composition of traffic.
- 5.5.3.3 The assessment methodology for defining the magnitude of traffic and transport impacts has been derived from the ISEP (formerly IEMA) guidelines and is set out below. Where no guidance is available, commonly agreed thresholds for judging the magnitude of traffic and transport impacts and professional judgement, supported by data/quantified information has been applied.
- 5.5.3.4 Where there are no predicted changes in traffic flows, the magnitude of impact is no change and no effect would arise. Dependent on the magnitude of impact, the effect on receptors can be beneficial or adverse or neutral if there is no change. An impact may also be classed as temporary or permanent.
- 5.5.3.5 The assessment undertaken to determine the magnitude of impact of each assessment category is discussed below.

Severance of Communities

- 5.5.3.6 The ISEP (formerly IEMA) guidelines defines severance as *"a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure"*.
- 5.5.3.7 Several factors can cause changes in severance ranging from road width, traffic volume, traffic speeds and the availability of pedestrian crossing facilities.

- 5.5.3.8 The ISEP (formerly IEMA) guidelines set out a range of indicators for determining the magnitude of impact on pedestrian and cyclist severance. Changes in total traffic flow of 30% are regarded as producing 'slight', 60% as 'moderate' and 90% as 'substantial' changes in severance. Therefore, this has been interpreted to be 'low', 'medium' and 'high' magnitude levels, with <30% being 'negligible'. The ISEP guidelines also state that *"caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic."*

Non-Motorised User (NMU) Delay

- 5.5.3.9 The ISEP guidelines states that: *"Pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site"*.
- 5.5.3.10 As there is no formal or published guidance for the assessment of pedestrian and cyclist delay, the ISEP (formerly IEMA) guidelines recommend assessors use their professional judgement to determine the significance of effects.

Driver Delay

- 5.5.3.11 The ISEP guidelines state that values for delay can be determined by junction modelling software such as Junctions 10 and LinSig. However, as construction traffic movements will be limited during peak traffic periods, noting construction workers would arrive and depart outside of typical network peak times, it is considered that junction modelling is not appropriate for assessment of driver delay.
- 5.5.3.12 Therefore, professional judgement has been used to determine the significance of traffic and transport effects associated with of the MHPGC Project, on the local and strategic highway network in the Traffic and Transport Study Area. The junctions which are most likely to be used by the MHPGC Project have been reviewed qualitatively to assess the likelihood of significant effects, based on factors such as traffic flow increase and traffic composition.
- 5.5.3.13 Driver delay is only likely to be significant where junctions are operating at or beyond capacity.

Non-Motorised User Amenity

- 5.5.3.14 NMU amenity can be defined as the relative pleasantness of a journey which could be affected by traffic flow, traffic composition, pavement width / separation from traffic, and are specific to local conditions. The 1993 'Guidelines for the Environmental Assessment of Road Traffic' (IEMA, 1993), referenced in the ISEP (formerly IEMA) guidelines, suggests a tentative threshold of doubling or halving of traffic flow or the HGV component to judge significance of changes in amenity. This has been applied as a starting point and professional judgement has been used to determine the magnitude of impact based on elements defined above.

Fear and Intimidation on and by Road Users

- 5.5.3.15 The ISEP guidelines sets out in paragraph 3.33 that the extent of fear and intimidation is dependent on:
- *"The total volume of traffic;*
 - *The heavy vehicle composition of traffic;*
 - *The speed at which vehicles are passing; and*
 - *The proximity of traffic to people – and/or the feeling of the inherent lack of protection created by factors such as a narrow pavement median, a narrow path or a constraint (such as a wall or fence) preventing people stepping further away from moving vehicles"*.
- 5.5.3.16 However, it is noted that *"there are no commonly agreed thresholds for estimating these levels of danger – hence of fear and intimidation – from known traffic and physical conditions"* and therefore a weighting system is provided within the guidance to establish the degree of hazard on highway links.

5.5.3.17 The scoring system used is set out below in **Table 5.16**.

Table 5.16: Degree of Hazard weighting system

Average traffic flow over 18-hour day – all vehicles/hour 2-way (a)	Total 18-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
+1,800	+3,000	>40	30
1,200 to 1,800	2,000 to 3,000	30 to 40	20
600 to 1,200	1,000 to 2,000	20 to 30	10
<600	<1,000	<20	0

5.5.3.18 The total score from all three elements is combined to provide a 'level' of fear and intimidation for all three elements as shown below in **Table 5.17**.

Table 5.17: Level of fear and intimidation

Level of fear and intimidation	Total hazard score (a) + (b) + (c)
Extreme	71+
Great	41 to 70
Moderate	21 to 40
Small	0 to 20

5.5.3.19 The magnitude of impact is approximated with reference to the changes in the level of fear and intimidation from baseline conditions as shown in **Table 5.18**.

Table 5.18: Magnitude of impact for fear and intimidation

Magnitude of impact	Change in step/(AADT) from baseline conditions
High	Two step changes in level
Medium	One step change in level, but with >400 vehicle increase in average 18hr All Vehicle two-way all vehicle flow; and/or >500 Heavy Vehicle increase in total 18hr Heavy Vehicle flow
Low	One step change in level, but with <400 vehicle increase in average 18hr All Vehicle two-way all vehicle flow; and/or <500 Heavy Vehicle increase in total 18hr Heavy Vehicle flow
Negligible	No change in step changes

Road User and Pedestrian Safety

5.5.3.20 To determine the traffic and transport impact of the MHPGC Project, PIC data along links that development traffic are likely to utilise, have been reviewed and professional judgement has been used to determine the likely magnitude of impact, based on existing accident trends, increase in traffic flow, traffic composition and if any new accesses are required.

5.5.3.21 **Table 5.19** presents a summary of the various magnitude of impacts, as detailed above.

Table 5.19: Summary of magnitude of an impacts for each category

Assessment Category	Magnitude			
	Negligible	Low	Medium	High
Severance	Change in traffic flow of less than 30%.	Change in traffic flow of 30% to 60%.	Change in traffic flow of >60% to 90%.	Change in traffic flow of >90%.
Driver delay	Based upon professional judgement taking account of the existing operation of the junction and estimated traffic flow increases as a result of the MHPGC Project			
Non-motorised user delay	Based upon professional judgement taking account of traffic flow increases as a result of the MHPGC Project and existing crossing facilities / demand for such			
Non-motorised user amenity	Less than doubling of traffic flow (or HGV) component affecting small number of people.	Less than doubling of traffic flow (or HGV) component affecting significant number of people.	Doubling of traffic flow (or HGV) component affecting a small / moderate number of people.	Doubling of traffic flow (or HGV) component affecting a significant number of people.
Fear and intimidation	No change in step changes	One step change in level, with <400 veh increase in average 18hr AV two-way all vehicle flow; and/ or <500 HV increase in total 18hr HV flow	One step change in level, but with >400 veh increase in average 18hr AV two-way all vehicle flow; and/ or >500 HV increase in total 18hr HV flow	Two step changes in level
Road safety	Based upon professional judgement taking account of existing accident trends, increase in traffic flow, traffic composition, access points and extreme weather events.			

5.5.4 Significance of effect

5.5.4.1 The significance of the effect upon traffic and transport is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The significance of effect matrix employed for this assessment is presented in **Table 5.20**. Where a range of significance levels is presented, the final assessment for each effect is based upon professional judgement.

Table 5.20: Matrix used for the assessment of the significance of the effect

Sensitivity of receptor	Magnitude of impact			
	Negligible	Low	Medium	High
Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
Low	Negligible or minor	Negligible or minor	Minor	Minor or moderate
Medium	Negligible or minor	Minor	Moderate	Moderate or major
High	Minor	Minor or moderate	Moderate or major	Major
Very high	Minor	Moderate or major	Major	Major

5.5.4.2 Following the classification of an effect using this methodology, a clear statement will then be made as to whether that effect is significant or not significant. Major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. Where a range of significance levels is presented, the final assessment for each effect is based upon professional judgement.

5.5.5 Assumptions and limitations of the assessment

- 5.5.5.1 At this stage in the assessment, there is some uncertainty in relation to the detailed volume, timing and make-up of traffic associated with the MHPGC Project. This includes the peak volume and the origin of MHPGC Project related traffic travelling to the Traffic and Transport Study Area and the destination of these vehicles when leaving the Traffic and Transport Study Area. For the purposes of the assessment covered within this chapter, a series of key assumptions have been made which are used to identify a likely worst-case scenario.
- 5.5.5.2 For the purposes of this assessment, it is assumed that 50% of MHPGC Project related traffic will enter/exit the Traffic and Transport Study Area via the A19 from the north and 50% will enter/exit via the A19 from the south. Vehicles are assumed to exit/access the A19 by the nearest junction to the construction compound.
- 5.5.5.3 HGV traffic is expected to include a mixture of movements to and from the SRN and intra-project movement between the different construction accesses and compounds. As detail on the split of movements is yet to be fully determined, it is assumed at this stage that all HGV movements to each construction compound are made to and from the SRN.
- 5.5.5.4 The origin and mode of travel of the workforce will also become clearer at a later stage of the MHPGC Project, as details on workforce requirements and likely suppliers are developed. For the purposes of this assessment, it is assumed that the workforce will originate from the local area, reflecting existing local commuting patterns. 2011 Census data has been used to estimate the origin of trips, based on the current split of commuters (by geographical 'Middle layer Super Output Area² (MSOA)') travelling to work at destinations adjacent to the MHPGC Project PEIR Red Line Boundary. Onshore, with an assumed maximum commuting time of approximately one hour. The 2011 Census data has been used instead of the 2021 Census data due to COVID-19 pandemic having a significant impact on the travel to work data at the time of the 2021 Census

5.6 Key parameters for assessment

5.6.1 Key receptors

- 5.6.1.1 30 links have been identified within the Traffic and Transport Study Area as within the scope of this assessment and are listed in Error! Reference source not found.. These relate to the highway links within the Traffic and Transport Study Area shown in **Figure 5.1** and listed in Table 5.6. These represent professional judgement of the links which could feasibly accommodate traffic linked to the MHPGC Project. This therefore excludes C roads, residential and minor access roads. These are the potential roads to which traffic can be assigned.
- 5.6.1.2 Sensitivities are qualified using the criteria set out in **Section 5.5.2** and professional judgement. Full details on the links and the assessment of their sensitivity can be found in **Volume 3, Annex 5.1: Description of Network Links and Sensitivity, of the PEIR**.

Table 5.21: Key receptors taken forward to assessment

Link Ref	Link	Sensitivity	Qualification
L1	A19 from Burdon Lane to Seaton Lane	Negligible	70mph dual carriageway with no frontage or pedestrian facilities.
L2	A19 from Seaton Lane to B1285	Negligible	70mph dual carriageway with no frontage or pedestrian facilities.

² A Middle Layer Super Output Area is a medium-sized geographical statistical unit used in England and Wales to report small-area census and geographical data. Size of MSOAs range from 5,000-15,000 residents or 2,000-6,000 households.

Link Ref	Link	Sensitivity	Qualification
L3	A19 from B1285 to A182	Negligible	70mph dual carriageway with no frontage or pedestrian facilities.
L4	A19 from A182 to Hall Walks	Negligible	70mph dual carriageway with no frontage or pedestrian facilities.
L5	A19 from Hall Walks to the south	Negligible	70mph dual carriageway with no frontage or pedestrian facilities.
L6	A1018 Stockton Road from St Benedict's Way roundabout to B1285 roundabout	Low	50mph dual carriageway distributor road with limited frontage, footway separated from highway and low likelihood of pedestrian activity.
L7	A1018 Stockton Road from A19 to B1285 roundabout (northbound)	Negligible	50mph distributor road with limited frontage, no footways.
L8	A1018 Stockton Road from B1285 roundabout to A19 (southbound)	Negligible	50mph one-way strategic link road, with no frontage access, no footways.
L9	B1285 Stockton Road from roundabout to Lord Byron's Walk	Medium	40mph single carriageway road, with frontage, footways, small section of cycleway and on-street parking.
L10	B1404 Seaton Lane west of A19 slips	Medium	Residential corridor with frontage and footways; moderate sensitivity.
L11	B1404 Seaton Lane East of A19 slips	Medium	Residential corridor with frontage and footways; moderate sensitivity.
L12	Westlea Road (B1285) from Lord Byron's Walk to Graham Way roundabout	High	30mph residential street with direct frontage, parking and pedestrian activity.
L13	Westlea Road (B1285) from Graham Way roundabout to B1432 Stockton Road	Low	Low density residential context with frontage.
L14	B1285 between Stockton Road junction and A19 slips signal junction	Low	Mixed-use corridor with footway.
L15	B1285 Church Street from B1285 (signal junction) to Briar Glen	High	30mph single carriageway road in residential setting with frontage, lighting and footways.
L16	B1285 Church Street from Briar Glen to the West	Low	60mph single carriageway road in rural/edge-of-settlement, with some frontage and footways.
L17	B1285 from B1285 Church Street to A182	Low	30mph single carriageway in mixed-use location with pedestrian routes and moderate receptors.
L18	A182 from A19 roundabouts to the east	Low	50mph semi-strategic single carriageway road with limited frontage, footways, lighting and pedestrian presence.
L19	A182 link road between A19 slips / B1285 Link Road	Low	50mph single carriageway distributor link with lighting. Cycling and pedestrian facilities on a separated bridge.
L20	Access Road from A182 to Jade Business Park	Low	50mph single carriageway employment access road with separated shared use path, limited lighting and no frontage.
L21	B1432 Stockton Road from A182/B1285 junction to West Lane	Low	30mph single carriageway with low density residential frontage and pedestrian facilities.

Link Ref	Link	Sensitivity	Qualification
L22	West Lane	High	30mph narrow residential street with direct frontage, footways and parking
L23	A19 Slip	Negligible	70mph, one-way strategic link; no frontage, no footways.
L24	Jade Access Road 1	Low	30mph employment access road. Footways and lighting.
L25	Jade Access Road 2	Low	30mph employment access road. Footways and lighting.
L26	Footpath 9 north and south of the A182	High	Public Right of Way where crossing road at grade with >8,000 to 16,000 vehicles a day
L27	Bridleway 16 north and south of the A182	High	Public Right of Way where crossing road at grade with >8,000 to 16,000 vehicles a day
L28	Footpath 28 crossing Jade Access Road	Low	Public Right of Way where crossing road at grade with <4,000 vehicles a day
L29	Bridleway 29 crossing of Jade Business Park entrance road in proximity of Jade Access Road	Low	Public Right of Way where crossing road at grade with <4,000 vehicles a day
L30	National Cycle Route 1: South Hetton to Ryhope crossing of Jade Business Park entrance road and in proximity of A182 link road between A19 slips / B1285 Link Road	Low	Public Right of Way where crossing road at grade with <4,000 vehicles a day

5.6.2 Scope of the assessment

- 5.6.2.1 The approach to assessment was presented in the MHPGC Project Scoping Report and has been refined in consultation with relevant statutory and non-statutory consultees as detailed in **Section 5.3** and through the MHPGC Project Scoping Opinions received. Table 5.22 summarises the impacts considered as part of the assessment, while a summary of the effects scoped out of the assessment is presented in **Table 5.20**.
- 5.6.2.2 The MHPGC Project Scoping Report proposed that the assessment for traffic and transport included impacts at the construction and decommissioning stage. Impacts during the O&M phase were proposed to be scoped out of the assessment, on the basis that O&M traffic would be minimal, limited to infrequent on-site inspections and maintenance activities.. The rationale for this is provided in **Table 5.23**. The rationale for this is provided in **Table 5.23**.

Table 5.22: Effects scoped into the assessment

Impact	Effects scoped into the assessment
Construction phase and Decommissioning phase	
Impact of increases in traffic flows or changes in traffic composition on the key road links, SRN and other transport receptors (e.g., PRow) and sensitive users (e.g., driver and pedestrians) as a result of construction traffic associated with the MHPGC Project.	Effect on community severance. Effect on driver delay for users of the key road links and SRN. Effect on non-motorised user delay for users of the key road links and SRN. Effect on non-motorised user amenity for users of the key road links and SRN. Effect on fear and intimidation for users of the key road links and SRN. Effect on road safety for users of the key road links and SRN. Effects as described above on users of key road links as a result of AIL movements.

Table 5.23: Impacts scoped out of the assessment

Impact	Justification for scoping out of the assessment
Construction phase	
Hazardous loads	The MHPGC Project would not generate hazardous movements in association with its construction and this impact has therefore not been considered as part of this assessment. Should the need for hazardous movements be identified, the need to scope this impact into the assessment will be reconsidered.
O&M phase	
All impacts	On the basis that there will be no workforce permanently employed on site during the O&M phase and that much of the required monitoring is to be undertaken remotely, O&M traffic is anticipated to be minimal. The O&M phase of the onshore components of the MHPGC Project will be limited to infrequent on-site inspections and maintenance activities of the onshore export cables and AC connection cables, with monitoring largely anticipated to be undertaken remotely. As maintenance will be undertaken only as required and potential corrective activities will be limited, it is anticipated that the MHPGC Project O&M phase will generate a small number of additional two-way vehicle movements due to infrequent staff trips and occasional maintenance activities. For days when staff are required, a maximum of 80 daily traffic movements is assumed, based on 20 employees using their own vehicle and making four vehicle movements per day. HGV traffic is expected to be low and infrequent, linked largely to planned shut-down/maintenance visits. All traffic levels are expected to be significantly lower than the peak of the construction phase and are not anticipated to exceed the thresholds for traffic growth set by the ISEP (formerly IEMA) Rule 1 and Rule 2 criteria described in Section 5.5. Accordingly, due to the absence of likely significant effects, impacts related to traffic and transport during the O&M phase have been scoped out the assessment.

5.6.2.3 The assessment of construction- and decommissioning related traffic is based at this stage on a worst-case scenario. The following sets out in more detail how transport movements relating to the construction phase of the MHPGC Project have been identified and how they are assigned to the links within the Traffic and Transport Study Area.

Compounds and potential accesses

5.6.2.4 The Traffic and Transport assessment is based on the impact of transport movements relating to four main construction compounds (which are covered in more detail in **Table 5.24**):

- Compound 1 – which is proposed to be accessed from the A182 (L18) and relates to the landfall construction);

- Compound 2 – which is proposed to be accessed from the B1432 Stockton Road (L21) and relates particularly to onshore export cable corridor and AC connection cable corridor east of the A19;
- Compound 3 – which is proposed to be accessed from the Jade Business Park Access Road (L20) and relates particularly to onshore export cable corridor and AC connection cable corridor to west of the A19 and to the potential blue LSS;
- Compound 4 – which is proposed to be also accessed by the Jade Business Park Access Road (L20) and relates to LSS.

- 5.6.2.5 The location of the LSS is yet to be confirmed, access could be taken via either Compound 3 or 4. For this PEIR, both scenarios have been assessed, while the final ES will include one scenario whereby access is assigned to a single compound.
- 5.6.2.6 All construction-related traffic within this assessment is currently assigned to one of these four compounds and related potential accesses as detailed in the maximum design scenario (MDS) set out in Table 5.20. The MDS has been selected as the scenario with the greatest potential to result in significant effects on an identified receptor or receptor group, based on the assumption of simultaneous peak construction activity across compounds, as described in paragraph 5.6.2.6.
- 5.6.2.7 The estimates of construction vehicle movements associated with the construction of the MHPGC Project has been undertaken by the Applicants' consultant engineers using a first principles approach based upon estimates of construction materials, construction and engineering requirements and construction programme. The estimates use the maximum design scenario set out in Table 5.25 and assumes concurrent construction peaks at the LSS, onshore export cable corridor and AC connection cable corridor.

Construction phasing and construction peaks

- 5.6.2.8 As set out in **Volume 1, Chapter 2: Project Description, of the PEIR**, the overall construction phase programme for the MHPGC Project is anticipated to be 4.5 years in duration. However, for the purposes of collating the modelled construction traffic flows, those attributed to the MHPGC Project, a shorter construction phase programme duration has been assumed that is approximately 33 months in duration and commencing in 2033. Assuming a shorter period for construction phase duration affords a more robust assessment as the approach includes for higher peaks i.e. condensed traffic flows, where the assumed total number of movements are spread across a shorter period. In reality, the traffic flows associated with the construction will be spread out across the longer period of time (4.5 years), resulting in a lower peak scenario than is assessed.
- 5.6.2.9 Modelled construction traffic flows have been estimated for each of two construction scenarios which are described in detail in **Volume 1, Chapter 2: Project Description, of the PEIR**. These relate to the:
- Green LSS Option Area Scenario;
 - Blue LSS Option Area Scenario.
- 5.6.2.10 The modelled construction traffic flows use the same construction phase programme for each construction scenario.
- 5.6.2.11 For the purposes of this assessment, it is assumed that each of the construction compounds will operate independently, with all traffic estimates based on the number of vehicle movements to and from each individual construction access and compound. This presents a worst-case traffic scenario, with all HGV movements between construction accesses and compounds considered as two movements (i.e. trips that may be between compounds are assessed as being wholly separate journeys, with the vehicle leaving the Traffic and Transport Study Area and returning again).
- 5.6.2.12 Modelled construction traffic flows have been estimated for each quarter (yearly quarter) and compound. These estimates are based on the MHPGC Project construction schedule, with works scheduled to be undertaken and completed at different points. Vehicle movements at each compound will therefore peak at different stages, with works linked to landfall occurring at earlier stages in the construction schedule and the construction of the onshore export cable corridor, AC connection cable and LSS undertaken over a longer period, with a peak later in the programme.

5.6.2.13 To ensure the assessment considers the impact of the highest peak construction traffic flows for each network link, separate peak quarters have been determined for each of the construction compounds (**Table 5.24**). As Compounds 3 and 4 are both accessible via the Jade Business Park Access Road (L20) from the public highway network, vehicle movements related to these compounds have been combined to ensure the assessment considers the highest peak possible for all of the compounds combined to ensure that the worst case assessment is undertaken for the links especially those in the vicinity of the A19 junction.

Table 5.24: Peak construction-related vehicle movements for each compound and scenario

Scenario	Compound	Peak quarter	Average total daily vehicle movements (during peak quarter)	Average daily HGV movements (during peak quarter)
Green LSS Option Area Scenario	1	Q2 2033	194	93
	2	Q1 2033	315	102
	3 and 4	Q4 2034	515	164
Blue LSS Option Area Scenario	1	Q2 2033	194	93
	2	Q1 2033	303	90
	3 and 4	Q4 2034	584	151

5.6.2.14 Based upon the current construction programme and as presented in **Table 5.24**, the peak modelled construction traffic flows for Compounds 1 and 2 are expected to occur in 2033 while the peak modelled construction traffic flows for Compounds 3 and 4 are expected in 2034. For the purposes of the Traffic and Transport assessment, the peak year to be used for the assessment of each link has been determined based on when the highest average daily movements (AADT) will occur. The future baseline traffic flows for assessment will be taken from 2033 even though the peak construction flows for Compounds 3 and 4 are expected to occur in 2034, as this will provide higher impact of assessment and as such the assessment can be considered worst-case.

Origin and route assignment of construction HGV movements

5.6.2.15 As set out in **Section 5.5.5**, it is assumed that all HGV construction traffic flows will enter and exit the Traffic and Transport Study Area via the A19. HGVs have been routed based on the most direct suitable route between each compound and the A19. On the basis that the likely origin of vehicles and onward destination cannot yet be finalised, it is assumed that 50% of construction-related traffic will enter/exit the Traffic and Transport Study Area via the A19 from the north and 50% will enter/exit via the A19 from the south. The routes to each of the Compounds from the A19 for HGV movements which are detailed below:

- Compound 1 – A19 – A182 – Compound 1;
- Compound 2 – A19 - B1285 – B1285 (East) – B1432 Stockton Road – Compound 2;
- Compound 3 & 4 – A19 – A182 – Access Road to Jade Business Park.

5.6.2.16 HGV traffic is assumed to be evenly distributed throughout the working day for each compound (between 0700 to 1900 Monday to Friday, and 0700 to 1300 on Saturdays).

Origin and route assignment of staff movements

5.6.2.17 As stated in **Section 5.5.5**, 2011 Census data has been utilised to establish the distribution of construction worker movements (comprising car and van trips). The number of people 'Driving a car or van' who commute to the project destination (MSOAs County Durham 017 (Seaham), County Durham 018 (Dalton-le-Dale), and County Durham 021 (Murton)), and who have a journey time of up to an hour, have been selected utilising the Journey to Work dataset (WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)). This data allowed car and van trips to be assigned to links within the Traffic and Transport Study Area. Construction workers

are assumed to follow the most expedient route to and from the related compound based upon Google Maps, with vehicles assigned to related links accordingly.

- 5.6.2.18 For construction worker movements, it has been assumed that, for the purposes of a robust assessment that there will be, one operative per vehicle arriving to the compounds, and each vehicle will make three movements per day. This assumes one car trip for the arrival ahead of a shift, one at departure and an average of one additional movement per vehicle (e.g. to other compound sites) during the working day.

5.6.3 Maximum design scenario

- 5.6.3.1 The maximum design scenario (MDS) for each impact identified in **Section 5.6.1** has been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The MDS presented in **Table 5.25** have been selected from the parameters provided in **Volume 1, Chapter 2: Project Description, of the PEIR** and methodology outlined in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR**.

Table 5.25: MDS relevant for the assessment of potential impacts on traffic and transport

Impact	Maximum Design Scenario	Explanation
Construction		
The impact of increases in traffic flows as a result of construction traffic upon community severance for users of the key road links and SRN	<i>Landfall</i>	
The impact of increases in traffic flows as a result of construction traffic upon driver delay for users of the key road links and SRN.	General: Duration: 33 months Working hours: 7am-7pm, Mon-Fri and 7am - 1pm on Saturday, no activity on Sundays or bank holidays.	The MDS defines the worst-case impact on users of the public highway network as a result of the maximum construction traffic increases associated with the construction phase.
The impact of increases in traffic flows as a result of construction traffic upon non-motorised user amenity for users of the key road links and SRN.	Landfall Number of main compound(s): 1 (48,000 m ²)	The duration of construction has been assumed to be 33 months instead of programmed 4 ½ years to increase traffic flows in both the Blue and Green Scenario.
The impact of increases in traffic flows as a result of construction traffic upon non-motorised user delay for users of the key road links and SRN.	Access Blue Scenario Number of access tracks: 2. Located from the A192 to landfall compound Abnormal loads: HGV low loader with extendable trailer (70t maximum load) - movement order required. 6 AILs Total daily construction traffic movements (HGV): 93 Total daily construction traffic movements (Vehicles): 101 Number of employees working on site: 48	The traffic flows presented are for the Green and Blue LSS scenarios, these are the peak quarter traffic flows for Compound 1 which occurs in Q2 2033 to provide a robust assessment.
The impact of increases in traffic flows as a result of construction traffic upon fear and intimidation for non-motorised users of the key road links and SRN.		
The impact of increases in traffic flows as a result of construction traffic upon accidents and safety for	Access Green Scenario Number of access tracks: 2. Located from the A192 to landfall compound	The AILs presented are assumed to the highest across all of the construction for the Landfall element, these will be assessed separately.

Impact	Maximum Design Scenario	Explanation
users of the key road links, SRN and other transport receptors.	Abnormal loads: HGV low loader with extendable trailer (70t maximum load) - movement order required. 6 AILs Total daily construction traffic movements (HGV): 93 Total daily construction traffic movements (Vehicles): 101 Number of employees working on site: 48	
	<i>Onshore Export Cable and AC Connection Cable</i>	
	Construction period for Onshore Export Cable: 3.5 years Infrastructure Number of haul roads: 1 Haul road construction: geogrids and 500mm stone Haul road widths: 8m Haul road depth: 0.5 Dimensions of temporary culvert/bridge crossings for the haul road: 10 x 6 x 5 Number of main compounds: 2 Main compound dimensions: 7ha Total area of main compounds: 14ha Number of secondary construction compounds: 6 Dimensions per secondary construction compound: 10,000m² Total area of secondary construction compounds: 6ha. Access Blue LSS Scenario Abnormal loads (Number): 450 Abnormal loads (Type): Cable drums on tractor trailers - low loaded lorry's may be suitable for transport also.	The Duration of construction has been assumed to be 33 months instead of programmed 4 ½ years to increase traffic flows in both the Blue and Green Scenario. The traffic flows presented are for the Green and Blue scenarios, these are the peak quarter traffic flows for Compound 2 which occurs in Q1 2033 to provide a robust assessment. The AILs presented are assumed to the highest across all of the construction for the Onshore Export Cable and AC Connection Cable element, these will be assessed separately.

Impact	Maximum Design Scenario	Explanation
	Total daily construction traffic movements (HGV): 90 Total daily construction traffic movements (Vehicles): 213 Number of employees working on site: 120 Access Green LSS Scenario Abnormal loads (Number): 450 Abnormal loads (Type): Cable drums on tractor trailers - low loaded lorry's may be suitable for transport also. Total daily construction traffic movements (HGV): 102 Total daily construction traffic movements (Vehicles): 213 Number of employees working on site: 120 Trenchless Drill Crossings Number of trenchless drill compounds: 6 (3 entry and 3 exit trenchless drill compounds) Dimensions of trenchless drill compounds: 6,000m² Total trenchless drill compound area: 36,000m² Construction Access Number of construction access tracks (excluding existing tracks): 6	
	<i>Onshore Landfall Substation</i>	
	Onshore Land Substation (LSS) Construction period for LSS: 4.5 years Area of temporary construction footprint: 7ha Area of temporary works (laydown and storage): 3.5ha LSS Construction	The Duration of construction has been assumed to be 33 months instead of programmed 4 ½ years to increase traffic flows in both the Blue and Green Scenario. The traffic flows presented are for the Green and Blue scenarios, these are the

Impact	Maximum Design Scenario	Explanation
	Description of foundations: raft or pile caps (suspended structure) or piled foundations and suspended structures Volume of excavation for foundations: 20,000m³ Cut and fill balance: 50,000m³ Material types and quantities associated to excavation: 14,000m³ topsoil, 65,000m³ other materials Estimated waste quantities: 50,000m³ Access Blue LSS Scenario Temporary width of access including passing bays: 15m Number of temporary accesses: 2 Total daily construction traffic movements (HGV): 150 Total daily construction traffic movements (Vehicles): 333 Number of employees working on site: 350 Access Green LSS Scenario Temporary width of access including passing bays: 15m Number of temporary accesses: 2 Total daily construction traffic movements (HGV): 164 Total daily construction traffic movements (Vehicles): 351 Number of employees working on site: 350	peak quarter traffic flows for Compound 3 & 4 which occurs in Q4 2034 to provide a robust assessment. The AILs presented are assumed to the highest across all of the construction for the Onshore Landfall Substation element, these will be assessed separately.
Decommissioning		
Onshore Land Substation - Deconstruction in the inverted sequence of installation, after the Land Substation (LSS) has been decommissioned. All equipment and materials including foundations will be demolished and disposed of, in accordance with the latest relevant guidance. The site will be reinstated.		
Onshore Export Cables - Leave cables in place, to minimise/ avoid environmental disturbance. Leaving the cables in place has little or no environmental impact, whilst recovering them would disturb the local environment.		

5.7 Commitments adopted as part of the MHPGC Project

- 5.7.1.1 As set out in **Volume 1, Chapter 4: Approach to Environmental Impact Assessment, of the PEIR** and **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR**, several measures have been adopted as part of the MHPGC Project to reduce the potential for impacts on traffic and transport.
- 5.7.1.2 Embedded mitigation includes the following measures as identified in the ISEP (formerly IEMA) Guide to Shaping Quality Development (IEMA, 2015):
- Primary mitigation - measures included as part of the project design. ISEP (formerly IEMA) describes these as *"modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken"*. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and marine licence, or both;
 - Tertiary mitigation - ISEP (formerly IEMA) describes these as *"actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects"*.
- 5.7.1.3 Embedded mitigation measures that will form part of the final design (and are established legislative requirements/good practice, or both) have been taken into account as part of the initial assessment presented in **Section 5.8** (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicant is committed to are considered in the assessment of effects.
- 5.7.1.4 Where an assessment identifies likely significant adverse effects, secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by ISEP (formerly IEMA) as *"actions that will require further activity to achieve the anticipated outcome"* and may be imposed as part of the planning consent, or through inclusion in the ES. These include measures required to reduce the significance of environmental effects and may be secured through an environmental management plan. For secondary mitigation measures both pre-mitigation and residual effects are presented.
- 5.7.1.5 The measures relevant to traffic and transport are outlined in **Table 5.26**. As there is a secured commitment to implementing these measures, they are considered inherently part of the design of the MHPGC Project and have therefore been considered in the assessment presented in **Section 5.8**.

Table 5.26: Embedded commitments relevant to traffic and transport implemented as part of the MHPGC Project

Commitment number	Measure adopted	How the measure will be secured
CoT18	An Outline Code of Construction Practice (CoCP) will be prepared and submitted with the application for development consent. A Detailed CoCP will be developed in accordance with the Outline CoCP. The Outline CoCP will include (but is not limited to) measures to maintain and address: • flood protection and control measures; • water environment and drainage; • noise and vibration management measures; • air quality and dust management; • pollution prevention and management; • geology and ground conditions; • soil and materials management; • land use, tourism and recreational assets; • waste management.	Will be secured via DCO Schedule &/or Requirement
CoT51	As detailed in the Onshore Crossing Schedule submitted with the development consent application, the following features will be crossed using trenchless techniques: • A, B and Classified unnumbered roads (known as C roads) (including the A19 and B1432); • All railway lines (including the section of railway line which runs between Seaham and Horden); • In addition the following the following, watercourses would also be crossed using trenchless techniques: • (Details to be added post assessment)	Will be secured via DCO Schedule &/or Requirement
CoT35	A Detailed PRoW Management Plan will be developed in accordance with the Outline PRoW Management Plan. The Outline PRoW Management Plan will: • set out the measures needed to keep PRoWs safe and usable during construction, such as clear signage, pre and post-work condition surveys; • commit to reopening or reinstating any affected route as soon as reasonably practicable, thereby minimising the duration of closures; • specify that, where full closure cannot be avoided, a temporary diversion or gated crossing will be provided unless demonstrably impracticable.	Will be secured via DCO Schedule &/or Requirement

Commitment number	Measure adopted	How the measure will be secured
CoT41	An Outline Construction Traffic Management Plan (CTMP) will be prepared and submitted with the application for development consent. A Detailed CTMP will be developed in accordance with the Outline CTMP prior to construction. The Detailed CTMP will set out measures to include (but not limited to): - managing the numbers, timing and routeing of HGVs during the construction phase; - managing the movement of construction worker traffic during the construction phase; - details of any traffic management measures necessary to ensure the safe passage of construction traffic via the local highway network; - details of localised road improvements if and where these may be necessary to facilitate safe use of the existing road network.	Will be secured via DCO Schedule &/or Requirement
CoT10	The Outline Highways Access Management Plan (OHAMP) will be prepared and submitted with the application for development consent. It will include details regarding temporary access points from the public highway will be installed to facilitate vehicular access to the onshore export cable corridor, AC connection cable corridor and the Onshore Land Substation, during construction. A Detailed Highways Access Management Plan will be developed in accordance with the outline plan.	Will be secured via DCO Schedule &/or Requirement

5.8 Assessment of impacts

5.8.1 Overview

5.8.1.1 This section describes the outputs of the assessment of the impacts to traffic and transport receptors arising from the construction and decommissioning phases of the MHPGC Project. The assessment follows the methodology which is described in **Section 5.5**. A summary of the effects is presented **Table 5.38**.

5.8.2 Construction phase

5.8.2.1 A review has been undertaken of the peak construction period on each link within the Traffic and Transport Study Area, based on the route assignment methodology described in **Section 5.5.5**. In keeping with the ISEP (formerly IEMA) rules, described in **Section 5.5**, any link that meets the threshold for assessment, has been identified and taken forward for assessment.

5.8.2.2 The review of traffic flows assigned within the Green LSS Option Area Scenario and the Blue LSS Option Area Scenario are presented in **Table 5.27** and in **Table 5.28** respectively.

5.8.2.3 The future baseline traffic flows relate to two-way annual average daily traffic flows over a 24- hour period (AADT) without the MHPGC Project construction traffic. The construction traffic peak flows relate to the average daily total number of vehicles relating to the MHPGC Project construction during the peak construction quarter for the related link (based on the key parameters for assessment described in **Table 5.25**. This is then added to the baseline traffic flows, as per the distribution, to calculate the percentage increase. Construction traffic peak flows are two-way daily traffic flows.

5.8.2.4 In both scenarios, the figures for the future baseline traffic flows for each link are shown for the peak construction year. Construction traffic peak flows have been derived from the peak construction period (quarter) for each of the compounds.

Table 5.27: Green LSS Option Area Scenario Peak Construction Trips (Two-Way, 24 hour)

Link ID	Link description	Future baseline traffic flows (AADT)		Construction peak daily traffic		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
L1	A19 from Burdon Lane to Seaton Lane	56,499	3,475	731	359	1%	10%	No
L2	A19 from Seaton Lane to B1285	65,541	3,655	837	359	1%	10%	No
L3	A19 from B1285 to A182	68,253	3,837	388	98	1%	3%	No
L4	A19 from A182 to Hall Walks	70,965	4,018	718	359	1%	9%	No
L5	A19 from Hall Walks to the south	72,283	3,442	718	359	1%	10%	No
L6	A1018 Stockton Road: from St Benedict's Way roundabout to B1285 roundabout	21,744	3,024	106	0	0%	0%	No
L7	A1018 Stockton Road: from A19 to	8,696	1,872	53	0	1%	0%	No

Link ID	Link description	Future baseline traffic flows (AADT)		Construction peak daily traffic		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
	B1285 roundabout (northbound)							
L8	A1018 Stockton Road: from B1285 roundabout to A19 (southbound)	8,410	1,418	53	0	1%	0%	No
L9	B1285 Stockton Road from roundabout to Lord Byron's Walk	6,880	774	0	0	0%	0%	No
L10	B1404 Seaton Lane west of A19 slips	11,804	1419	0	0	0%	0%	No
L11	B1404 Seaton Lane East of A19 slips	5850	713	0	0	0%	0%	No
L12	B1285 Westlea Road: from Lord Byron's Walk to B1432 Stockton Road	10,309	1,204	239	0	2%	0%	No
L13	Westlea Road (B1285) from The Graham Way to B1432 Stockton Road	10,309	1,204	239	0	2%	0%	No
L14	B1285 between Stockton Road junction and A19 slips signal junction	14,385	794	677	204	5%	26%	No
L15	B1285 Church Street: from B1285 (signal junction) to Briar Glen	17039	1,634	133	0	1%	0%	No
L16	B1285 Church Street: from Briar Glen to the West	7,478	897	93	0	1%	0%	No
L17	B1285: from B1285 Church Street to A182	17,106	1,118	943	363	6%	32%	Yes
L18	A182: from A19 roundabout to the east	9,866	364	480	186	5%	51%	Yes
L19	A182: link road between A19 slips / B1285 Link Road	16,660	Data not available	908	Data not available	5%	Data not available	Yes – Rule 1 for HGVs assumed

Link ID	Link description	Future baseline traffic flows (AADT)		Construction peak daily traffic		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
L20	Access Road: from A182 to Jade Business Park	869	43	1030	328	118%	762%	Yes
L21	B1432 Stockton Road: from A182/B1285 junction to West Lane	6,147	775	630	204	10%	26%	No
L22	West Lane	838	0	0	0	0%	0%	No
L23	A19 Slip	5,153	234	418	180	8%	77%	Yes
L24	Jade Access Road 1	512	13	515	164	101%	1,270%	Yes
L25	Jade Access Road 2	869	43	515	164	59%	381%	Yes
L26	Footpath 9 north and south of the A182 crossing the A182	9,866	364	480	186	5%	51%	Yes
L27	Bridleway 15 and 16 north and south of the A182 crossing the A182	9,866	364	480	186	5%	51%	Yes
L28	Footpath 28 crossing Jade Access Road	869	43	1030	328	118%	762%	Yes
L29	Bridleway 29: alongside Jade Access Road	869	43	1030	328	118%	762%	Yes
	Bridleway 29: Crossing Jade Access Road 2	869	43	515	164	59%	381%	Yes
L30	NCR - South Hetton to Ryhope alongside Jade Access Road	869	43	1030	328	118%	762%	Yes
	NCR - South Hetton to Ryhope Crossing Jade Access Road 2	869	43	515	164	59%	381%	Yes

Table 5.28: Blue LSS Option Area Scenario Peak Construction Trips (Two-Way, 24 hour)

Link No.	Link description	Future baseline traffic flows (AADT)		Construction traffic peak flows		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
L1	A19: from Burdon Lane to Seaton Lane	56,499	3,475	751	333	1%	10%	No
L2	A19: from Seaton Lane to B1285	65,541	3,655	870	333	1%	9%	No
L3	A19: from B1285 to A182	68,253	3,837	354	70	1%	2%	No
L4	A19: from A182 to Hall Walks	70,965	4,018	736	333	1%	8%	No
L5	A19: from Hall Walks to the south	72,283	3,442	736	333	1%	10%	No
L6	A1018 Stockton Road: from St Benedict's Way roundabout to B1285 roundabout	21,744	3,024	119	0	1%	0%	No
L7	A1018 Stockton Road: from A19 to B1285 roundabout (northbound)	8,696	1,872	60	0	1%	0%	No
L8	A1018 Stockton Road: from B1285 roundabout to A19 (southbound)	8,410	1418	60	0	1%	0%	No
L9	B1285 Stockton Road from roundabout to Lord Byron's Walk	6,880	774	0	0	0%	0%	No
L10	B1404 Seaton Lane west of A19 slips	11,804	1419	0	0	0%	0%	No
L11	B1404 Seaton Lane East of A19 slips	5850	713	0	0	0%	0%	No
L12	B1285 Westlea Road: from Lord Byron's Walk to B1432 Stockton Road	10,309	1,204	269	0	3%	0%	No

Link No.	Link description	Future baseline traffic flows (AADT)		Construction traffic peak flows		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
L13	Westlea Road (B1285) from The Graham Way to B1432 Stockton Road	10,309	1,204	269	0	3%	0%	No
L14	B1285 between Stockton Road junction and A19 slips signal junction	14,385	794	682	179	5%	23%	No
L15	B1285 Church Street: from B1285 (signal junction) to Briar Glen	17,039	1,634	149	0	1%	0%	No
L16	B1285 Church Street: from Briar Glen to the West	7,478	897	105	0	1%	0%	No
L17	B1285: from B1285 Church Street to A182	17,106	1,118	981	256	6%	23%	Yes
L18	A182: from A19 roundabout to the east	9,866	364	496	186	5%	51%	Yes
L19	A182: link road between A19 slips / B1285 Link Road	16,660	No data available	989	No data available	6%	No data available	Yes – Rule 1 for HGVs assumed
L20	Access Road: from A182 to Jade Business Park	869	43	1166	301	134%	699%	Yes
L21	B1432 Stockton Road: from A182/B1285 junction to West Lane	6,147	775	605	179	10%	23%	No
L22	West Lane	838	0	0	0	0%	0%	No
L23	A19 Slip	5,153	234	435	167	8%	71%	Yes
L24	Jade Access Road 1	512	13	583	150	114%	1,166%	Yes
L25	Jade Access Road 2	869	43	583	150	67%	350%	Yes
L26	Footpath 9 north and south of the A182 crossing the A182	9,866	364	496	186	5%	51%	Yes

Link No.	Link description	Future baseline traffic flows (AADT)		Construction traffic peak flows		% increase		Link meeting Rule 1 or 2?
		Total Vehicles	Of which HGVs	Total Vehicles	Of which HGVs	Total Vehicles	% HGVs	
L27	Bridleway 16 north and south of the A182 crossing the A182	9,866	364	496	186	5%	51%	Yes
L28	Footpath 28 crossing Jade Access Road	869	43	1,166	301	134%	699%	Yes
L29	Bridleway 29: alongside Jade Access Road	869	43	1,166	301	134%	699%	Yes
	Bridleway 29: Crossing Jade Access Road 2	869	43	583	150	67%	350%	Yes
L30	NCR - South Hetton to Ryhope alongside Jade Access Road	869	43	1,166	301	134%	699%	Yes
	NCR - South Hetton to Ryhope Crossing Jade Access Road 2	869	43	583	150	67%	350%	Yes

5.8.2.5 Based on the screening rules defined in **Section 5.5.1**, links that meet the 'Rule 1' or 'Rule 2' criteria which are brought forward to be included in the assessment are presented in **Table 5.29**. Link 17 has been taken forward for Driver Delay only and Link 19 has been taken forward on the basis that this link is likely to meet the 'Rule 1' for HGVs.

Table 5.29 Highway links for environmental assessment

Link	Sensitivity	% Increase Green LSS Option Area Scenario		% Increase Blue LSS Option Area Scenario	
		Total vehicles	HGVs	Total vehicles	HGVs
L17: B1285 from B1285 Church Street to A182 (For Driver Delay only)	Low	6%	23%	6%	32%
L18: A182 from A19 roundabouts to the east	Low	5%	51%	5%	51%
L19: A182 link road between A19 slips / B1285 Link Road	Low	5%	n/a*	6%	n/a*
L20: Access Road: from A182 to Jade Business Park	Low	134%	699%	118%	762%
L23: A19 Slip	Negligible	8%	77%	8%	71%

Link	Sensitivity	% Increase Green LSS Option Area Scenario		% Increase Blue LSS Option Area Scenario	
		Total vehicles	HGVs	Total vehicles	HGVs
L24: Jade Access Road 1	Low	114%	1,166%	101%	1,270%
L25: Jade Access Road 2	Low	59%	381%	67%	350%
L26: Footpath 9 north and south of the A182 crossing the A182	High	Associated with L18: A182 from A19 roundabouts to the east			
L27: Bridleway 16 north and south of the A182 crossing the A182	High	Associated with L18: A182 from A19 roundabouts to the east			
L28: Footpath 28 crossing Jade Access Road	Low	Associated with L20 Jade Access Road			
L29: Bridleway 29 Crossing Jade Access Road 2; & alongside Jade Access Road	Low	Associated with L20 Jade Access Road and L25 Jade Access Road 2			
L30: NCR 1 South Hetton to Ryhope Crossing Jade Access Road 2 & alongside Jade Access Road	Low	Associated with L20 Jade Access Road and L25 Jade Access Road 2			

*No baseline HGV traffic flow available

Impact on Severance and NMU Delay

- 5.8.2.6 Changes in traffic (flow, speed, or composition) can physically or psychologically divide communities (for instance by affecting access between community facilities, or making road crossing harder). Severance is only likely to occur on highly trafficked roads and result from the perceived division the road and traffic create between communities on either side. The ISEP (formerly IEMA) Guidelines (outlined in **Section 5.5.1**) sets out the increases in total traffic volumes that can directly influence magnitude of severance.
- 5.8.2.7 NMU Delay has been assessed alongside severance and uses professional judgement to consider how changes in traffic flow and composition may affect the ability of NMUs to cross roads and lead to the potential for severance. In doing so, it should be noted that severance is more likely than NMU delays to be impacted by changes in traffic composition. For example, a significant increase in HGV traffic may deter NMUs from using a route to access facilities but not lead to a significant delays particularly where controlled crossing facilities are available.

Receptor sensitivity

- 5.8.2.8 Details on the individual links and the sensitivity of receptors are set out in **Table 5.27** and **Table 5.28**.
- 5.8.2.9 The majority of links taken forward for assessment are considered to be of low sensitivity. Links L26 (Footpath 9), L27 (Bridleway 16), L28 (Footpath 28), and L29 (Bridleway 29) are PRow links and L30 (NCR 1) is a cycle route where users are required to cross highway links (see **Figure 5.3**). Link 26 and Link 27 are considered to be of high sensitivity, and Links L28, L29 and L30 are considered to be of low sensitivity. These levels are based on DMRB LA 112's Table 3.11 which categorises sensitivity based on the level of traffic flows on links which walkers, cyclists and horse riders cross. L23 is not assessed as NMUs would not cross this link as it is a motorway slip road.

Magnitude of impact

- 5.8.2.10 The magnitude of impact ranges from negligible to high, for both scenarios. Link 20 (Jade Access Road) and Link 24 (Jade Access Road 1) with modest traffic flows currently, is assessed as having a **high** magnitude of impact, with total traffic increasing in traffic by over 100% in both scenarios. As Link 28 (Footpath 28) crosses Link 20, this link is also assessed as having a **high** magnitude of

impact. The magnitude of impact for Link 25 (Jade Access Road 2), Link 29 (Bridleway 29) and Link 30 (NCR 1) is assessed as **low** under the Green LSS Option Area Scenario and medium with the Blue LSS Option Area Scenario. The magnitude of impact of all other links is **negligible** under both scenarios, with increases in total vehicles of less than 10%.

Significance of effect

5.8.2.11 A summary of effects with the Green LSS Option Area Scenario is set out in **Table 5.30** and the impact with the Blue LSS Option Area Scenario in **Table 5.31**.

Table 5.30: Summary of severance and non-motorised user delay effects (Green LSS Option Area Scenario)

Link	% vehicle increase – total vehicles	Sensitivity of receptor	Magnitude of impact	Significance of effect	
				As per Significance Matrix	Significance chosen and justification
L17	6%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L18	5%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L19	5%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L20	118%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L24	101%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L25	59%	Low	Low	Negligible or minor adverse	Minor adverse based on AADT flow
L26	5%	High	Negligible	Minor adverse	Minor adverse
L27	5%	High	Negligible	Minor adverse	Minor adverse
L28	118%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L29	59%	Low	Low	Negligible or minor adverse	Minor adverse based on AADT flow
L30	59%	Low	Low	Negligible or minor adverse	Minor adverse based on AADT flow

Table 5.31: Summary of severance and non-motorised user delay effects (Blue LSS Option Area Scenario)

Link	% vehicle increase – total vehicles	Sensitivity of receptor	Magnitude of impact	Significance of effect	
				As per Significance Matrix	Significance chosen and justification
L17	6%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L18	5%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L19	6%	Low	Negligible	Negligible or minor adverse	Negligible adverse based on AADT flow
L20	134%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L24	114%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L25	67%	Low	Medium	Minor adverse	Minor adverse
L26	5%	High	Negligible	Minor adverse	Minor adverse
L27	5%	High	Negligible	Minor adverse	Minor adverse
L28	134%	Low	High	Minor or Moderate adverse	Minor adverse based on AADT flow and low pedestrian usage
L29	67%	Low	Medium	Minor adverse	Minor adverse
L30	67%	Low	Medium	Minor adverse	Minor adverse

5.8.2.12 Overall, for severance and NMU delay, within the Traffic and Transport Study Area there are three **Negligible adverse** effects and eight **Minor adverse** effects, for both Option Area Scenarios.

5.8.2.13 All likely impacts are temporary, direct, short-term and reversible.

5.8.2.14 Impacts on Link 20 (Jade Access Road), Link 24 (Jade Access Road 1) and Link 28 (Footpath 28) are **Minor adverse** on the basis of the low pedestrian usage and limited crossing demand on Jade Access Road and Footpath 28. These are therefore **Not Significant** in EIA terms for both scenarios.

Additional mitigation and residual effect

5.8.2.15 It is not currently expected that additional mitigation measures will be required beyond those to be set out in the Outline CTMP (CoT41) and the Outline PRow Management Plan (CoT35) (described in **Section 5.7**). Measures included within the Outline CTMP and PRow Management Plan will provide controls and embedded mitigation during the construction phase of the Project to ensure adverse effects on users of the highways and transport network are minimised.

5.8.2.16 The residual effect is expected to remain **Negligible to Minor adverse (Not Significant)**.

Impact on driver delay

5.8.2.17 Driver delays during the construction phase can result from an increase in the traffic flows, particularly during peak hours resulting in increased queues on links and at junctions.

- 5.8.2.18 As set out in **Section 5.3**, National Highways have identified the A19 and junctions with the key road links as being particularly sensitive to changes in traffic flows, specifically:
- A19 / A182 / B1283 (Easington) Junction;
 - A19 / A182 / B1285 (Hawthorn) Junction;
 - A19 / B1404 (Seaton Lane) Junction.
- 5.8.2.19 The distribution of construction HGVs and worker vehicles has established that Hawthorn Junction is likely to be the main junction used to access the A19. Construction HGVs and worker vehicles have not been assigned to utilise the Easington and Seaton Junctions.
- 5.8.2.20 The junctions in the vicinity of the development which construction HGVs and worker vehicles will utilise include:
- Roundabouts within Jade Business Park (L24: Jade Access Road 1 and L25: Jade Access Road 2);
 - Hawthorn Junction (L20: Access Road: from A182 to Jade Business Park, L17: B1285 from B1285 Church Street to A182, L18: A182 from A19 roundabouts to the east, and L19: A182 link road between A19 slips / B1285 Link Road);
 - Roundabout along the A182 opposite Taylor Wimpey Seaham Garden Village development (L18: A182 from A19 roundabouts to the east);
 - A182 / Admiralty Way roundabout (L18: A182: from A19 roundabouts to the east);
 - Signal junction B1285 Church Street / B1285 / A19 slip (L14: B1285 between Stockton Road junction and A19 slips signal junction, L15: B1285 Church Street / Church Lane / Station Road from B1285 (signal junction) to Briar Glen, and L23: A19 Slip);
 - Priority junction B1285 / B1432 Stockton Road (L14: B1285 between Stockton Road junction and A19 slips signal junction and L21: B1432 Stockton Road: from A182/B1285 junction to West Lane).

Receptor sensitivity

- 5.8.2.21 Junction sensitivities are presented below in **Table 5.32**.

Table 5.32: Junction sensitivities

Junction	Sensitivity	Justification
Roundabouts within Jade Business Park	Low	Assumed to be within capacity currently, based on Google Traffic
Hawthorn Junction	Medium	Key junction on the A19 within Traffic and Transport Study Area, which construction vehicles will utilise
Roundabout along the A182 opposite Taylor Wimpey	Low	Assumed to be within capacity currently based on Google Traffic
A182 / Admiralty Way roundabout	Low	Assumed to be within capacity currently based on Google Traffic
Signal junction B1285 Church Street / B1285 / A19 slip	Low	Assumed to be within capacity currently based on Google Traffic
Priority junction B1285 / B1432 Stockton Road	Low	Assumed to be within capacity currently based on Google Traffic

Magnitude of impact

- 5.8.2.22 **Table 5.27** and **Table 5.28** show that the peak daily construction vehicle movements may be approximately 1,166 (in the Blue LSS Option Area scenario) or 1,030 (in the Green LSS Option Area scenario), on Link 20: Access Road: from A182 to Jade Business Park. This represents a 134% increase in daily vehicle movements (in the Blue LSS Option Area Scenario) or a 118% increase in daily vehicle movements (in the Green LSS Option Area Scenario). Despite this large percentage

increase in traffic, this is partially due to relatively low baseline flows, with the absolute increase in vehicular traffic on this link considered modest (based on professional judgement).

- 5.8.2.23 Construction workforce trips typically arrive before 7am and depart after 7pm and therefore are unlikely to contribute to typical traffic peaks such as 8-9am and 5-6pm within the locality. Over the course of a twelve-hour day the peak daily construction vehicle movements on Jade Access Road would equate to an additional 1-2 vehicle movements a minute, and of these, HGVs would equate to an additional 25-27 an hour. HGVs would either go south on the A19, utilising Link 19 (A182 link road between A19 slips / B1285 Link Road) or go north utilising Link 17 (B1285: from B1285 Church Street to A182) and Link 23 (A19 Slip). Link 17 and Link 23 are predicted to increase by less than 10% in daily vehicle movements and Link 19 is predicted to increase by less than 5%.
- 5.8.2.24 Link 24 and Link 25, within Jade Business Park, are expected to be utilised by construction vehicles one way only (access only). Peak daily construction vehicle movements may be approximately 583 (in the Blue LSS Option Area scenario) or 515 (in the Green LSS Option Area scenario), on both links. This represents a 67-114% increase in daily vehicle movements (in the Blue LSS Option Area Scenario) or a 59-101% increase in daily vehicle movements (in the Green LSS Option Area Scenario). Again, low baseline flows contribute to this large percentage increase, and construction workforce trips would typically arrive before the morning peak. Over the course of a twelve-hour day the peak daily construction vehicle movements on Jade Access Road would equate to an additional 1 vehicle movement a minute, and of these, HGVs would equate to an additional 13 an hour.
- 5.8.2.25 All other links that are part of junctions identified in Table 5.32, are predicted to have an increase in daily vehicle movements of less than 10%, for both scenarios.
- 5.8.2.26 Based on the above, the magnitude of impact on Hawthorn Junction is considered to be **low**, reflecting the modest increase in peak daily construction vehicle movements, for both scenarios.
- 5.8.2.27 The magnitude of impact on all other links is considered to be **negligible**, for both scenarios.

Significance of effect

- 5.8.2.28 Hawthorne Junction has been determined to have **Minor adverse** effects, for both scenarios.
- 5.8.2.29 All other junctions set out in **Table 5.32** have been determined to have **Negligible adverse** effects, for both scenarios.
- 5.8.2.30 All likely impacts are temporary, direct, short-term and reversible and are **Not Significant** in EIA terms.

Additional mitigation and residual effect

The residual effect is considered to remain **Negligible to Minor adverse (Not Significant)**

Impact on NMU amenity

- 5.8.2.31 NMU amenity is the relative pleasantness of a journey that is considered to be affected by traffic volumes and composition, along with pavement width, segregation from traffic, and pedestrian activity.
- 5.8.2.32 The ISEP Guidelines (see **Section 5.5.1**) suggest that a tentative threshold for judging the significance of changes in NMU amenity would be where the traffic flows (or its HGV component) are halved or doubled. Other factors as stated above are also taken in consideration when making a judgement on changes in amenity level.

Receptor sensitivity

- 5.8.2.33 Details on the individual links and the sensitivity of receptors is set out in Table 5.28.
- 5.8.2.34 Link 23 is not assessed as NMUs would not utilise this link as it is a motorway slip road. All the other traffic links are considered to be **low** sensitivity, based on the general level of pedestrian activity, visibility and physical conditions such as traffic flow, traffic composition, crossing points and pavement width / separation from traffic. For amenity, DMRB LA112 is not utilised for sensitivity for PRow users, as it is more applicable to severance and NMU delay. The criteria above has been applied to Link 26, Link 27, Link 28, Link 29 and Link 30.
- 5.8.2.35 Therefore, it is considered that the receptor sensitivity for all links are considered to be **low**.

Magnitude of impact

- 5.8.2.36 Link 20 (Access Road from A182 to Jade Business Park) and Link 24 (Jade Access Road 1) are the only links to experience a doubling of traffic flows and a doubling of HGV traffic under both the Green LSS Option Area and Blue LSS Option Area scenarios. The magnitude of impact is assessed as being **medium**. As PRow Link 28 (Footpath 28), Link 29 (Bridleway 29) and Link 30 (NCR 1) are associated with Link 20 (Access Road from A182 to Jade Business Park) due to their proximity to this link, it is considered that the magnitude of impact on these PRow Links is also assessed as being **medium**. All other links experience only very modest increases in traffic flows, well below this level and therefore are assessed as being **low**. The magnitude of impact is therefore **low to medium**.

Significance of effect

- 5.8.2.37 Link 20 (Access Road from A182 to Jade Business Park), Link 24 (Jade Access Road 1), Link 28 (Footpath 28), Link 29 (Bridleway 29) and Link 30 (NCR 1, alongside Jade Access Road) have been determined to have **Minor adverse** effects, for both scenarios.
- 5.8.2.38 All other links have been determined to have **Negligible adverse** effects, for both scenarios.
- 5.8.2.39 All likely impacts are temporary, direct, short-term and reversible and are **Not Significant** in EIA terms.

Additional mitigation and residual effect

- 5.8.2.40 It is not currently expected that additional mitigation measures will be required beyond those to be set out in the Outline CTMP and the Outline PRow Management Plan (described in **Section 5.7**). The residual effect is expected to remain **negligible to minor adverse (Not Significant)**.

Impact on fear and intimidation

- 5.8.2.41 Fear and intimidation are a recognised environmental effect associated with changes in traffic conditions, particularly affecting pedestrians, cyclists and other non-motorised road users. In accordance with the ISEP (formerly IEMA) guidance, this effect relates to the perceived danger and discomfort experienced by individuals due to the presence and behaviour of motorised traffic. Factors such as traffic volume, vehicle speeds, the proportion of HGVs and the proximity of vehicles to pedestrians or cyclists can influence the level of fear and intimidation experienced. These values create a weighting system which is the first approximation of the likelihood of pedestrian fear and intimidation. There is still an element of judgement to be exercised with special consideration given to particular problems such as high-speed sections of road, locations of turning points and accesses and inherent lack of protection. Details on the criteria used in this assessment are provided in **Section 5.5**.

Receptor sensitivity

- 5.8.2.42 Details on the individual links taken forward for environmental assessment and the sensitivity of receptors is set out in **Table 5.29**.
- 5.8.2.43 Link 23 is not assessed as NMUs would not utilise this link as it is a motorway slip road. PRow Links 26 and 27 are considered to be **high** based on DMRB LA 112 criteria. All other links are considered to be **low** sensitivity, based on the general level of pedestrian activity, visibility and physical conditions such as traffic flow, traffic composition, crossing points and footway width / separation from traffic. Receptor sensitivity is therefore considered to be **negligible to high**.

Magnitude of impact

- 5.8.2.44 Data related to the scoring is presented in **Table 5.33** and **Table 5.34**.

Table 5.33: Summary of fear and intimidation Hazard Scores (Green LSS Option Area Scenario)

Link	Baseline (hourly flow in 18hr) (a)	Baseline (HGV 18hr) (b)	Baseline speed - (c)	Baseline Degree of Hazard Score	Project (hourly flow in 18hr) (a)	Project (HGV 18hr) (b)	Project speed - (c)	Project Degree of Hazard Score
L17	991	1,280	35 mph	40	1,003	1,481	35 mph	40
L18	548	364	40 / 50 mph	30	575	550	40 / 50 mph	30
L19	926	n/a	40 / 50 mph	40	976	n/a	40 / 50 mph	40
L20	63	56	31 mph	20	106	371	31 mph	20
L24	37	18	34 mph	20	57	177	34 mph	20
L25	63	56	31 mph	20	77	207	31 mph	20
L26	548	364	40 / 50 mph	30	575	550	40 / 50 mph	30
L27	548	364	40 / 50 mph	30	575	550	40 / 50 mph	30
L28	63	56	31 mph	20	106	207	31 mph	20
L29	63	56	31 mph	20	106	371	31 mph	20
L30	63	56	31 mph	20	106	371	31 mph	20

Table 5.34: Summary of fear and intimidation Hazard Scores (Blue LSS Option Area Scenario)

Link	Baseline (hourly flow in 18hr) (a)	Baseline (HGV 18hr) (b)	Baseline speed - (c)	Baseline Degree of Hazard Score	Project (hourly flow in 18hr) (a)	Project (HGV 18hr) (b)	Project speed - (c)	Project Degree of Hazard Score
L17	991	1,280	35 mph	40	1,005	1,374	35 mph	40
L18	548	364	40 / 50 mph	30	576	550	40 / 50 mph	30
L19	926	n/a	40 / 50 mph	40	981	n/a	40 / 50 mph	40
L20	63	56	31 mph	20	113	344	31 mph	20
L24	37	18	34 mph	20	61	163	34 mph	20
L25	42	56	31 mph	20	81	194	31 mph	20
L26	548	364	40 / 50 mph	30	576	550	40 / 50 mph	30
L27	548	364	40 / 50 mph	30	576	550	40 / 50 mph	30
L28	63	56	31 mph	20	113	344	31 mph	20
L29	63	56	31 mph	20	113	344	31 mph	20
L30	63	56	31 mph	20	113	344	31 mph	20

5.8.2.45 Following ISEP Guidance, five links have a degree of hazard of 30 or 40 and are classed as having a moderate level of fear and intimidation, for the baseline and both project scenarios. Six links have a degree of hazard of 20 and are classed as having a small level of fear and intimidation, for the baseline and both project scenarios. As there is no step change between the degree of hazard for the baseline compared to the project scenarios, for each of the links assessed, the magnitude is determined to be **negligible**.

Significance of effect

- 5.8.2.46 Overall, the significance of the effect of fear and intimidation is deemed to be of **Negligible adverse** significance on all links for both scenarios and are expected to be local, temporary, short-term and reversible. This is considered to be **Not Significant** in EIA terms.

Additional mitigation and residual effect

- 5.8.2.47 It is not currently expected that additional mitigation measures will be required beyond those to be set out in the Outline CTMP and the Outline PRow Management Plan (described in **Section 5.7**). The residual effect is expected to remain **Negligible adverse**.

Impact on road safety

- 5.8.2.48 A review of PICs is provided in **Section 5.4.5**, with mapping of PIC locations provided in Collision analysis
- 5.8.2.49 PIC data has been obtained from DfT's STATS19 national collision database, which provides verified records of all police-reported road traffic collisions in Great Britain. The dataset includes details of the location, date, severity of injury (slight, serious, or fatal), vehicle type, and whether vulnerable road users (pedestrians or cyclists) were involved.
- 5.8.2.50 Data covering the five-year period from January 2021 to December 2025 have been extracted for all roads and junctions forming part of the Traffic and Transport Study Area. The dataset has been analysed to identify patterns in collision frequency, severity, and road user type to inform the baseline safety conditions.
- 5.8.2.51 A summary of recorded PICs by severity is provided in Error! Reference source not found.. The corresponding PIC locations are illustrated in **Figure 5.3**.

Table 5.12: Summary of PICs within the Traffic and Transport Study Area by severity (2021-2025)

Severity	Total PICs (2020-2025)
Fatality	6
Serious injury	29
Slight injury	58

5.8.2.52

- 5.8.2.53 Collision clusters are typically defined as areas where four or more PICs have occurred within 25m of the same location within a five-year period. There have been no collision clusters identified on the routes within the Traffic and Transport Study Area.
- 5.8.2.54 Of the six fatalities recorded, one occurred on Jade Access Road, four occurred on the A19, and one occurred on Westlea Road. The B1285 between the junction with the A1018 and edge of the Traffic and Transport Study Area to the East of Easington Lane had the highest number serious injury collisions with thirteen and the A19 had seven.

5.8.2.55 Figure 5.4. This is based on PIC figures up to 2024.

Receptor sensitivity

5.8.2.56 ISEP Guidelines state that collision clusters and routes with road safety concerns should be considered when assigning sensitive receptor based upon the geographic locations. The analysis set out in **Section 5.4.5** has not identified any clusters of four or more PICs within a 100m radius on the links brought forward for assessment, this is seen as the significant marker as this accounts for on an average a single collision per year. In addition, no specific safety concerns have been raised by stakeholders as part of the consultation and engagement (see **Section 5.3**). **Table 5.35** presents the sensitivity of links, considering collision risk factors and PICs.

Table 5.35: Safety sensitivities

Link	Sensitivity	Risk factors	PICs in last 5 years
L17: B1285: from B1285 Church Street to A182	Low	500m of straight road.	One slight – one driver and one car occupant.
L18: A182 from A19 roundabouts to the east	Low	Footpath 9 and Bridleway 16 intersect highway. No formal crossings are present.	Two slight and two serious – car drivers or passengers.
L19: A182 link road between A19 slips / B1285 Link Road	Low (based on new configuration, including separated footway and cycle bridge)	Changing lanes before signal junction.	Three slight, prior to new configuration and signalisation – two car drivers and one cyclist.
L20: Access Road: from A182 to Jade Business Park	Low	PIC located close to Footpath 28 which intersects highway. No formal crossing is present.	One fatal - Motorcyclist. Collision with pedestrian.
L23: A19 Slip	Negligible	One way road with national speed limit.	None
L24: Jade Access Road 1	Negligible	Informal crossing at roundabout arm entering Jade Business Park. NCR 1 follows crossing.	None
L25: Jade Access Road 2	Negligible	Pedestrians crossing roundabout arms.	None
L26: Footpath 9	Negligible	Crossing Link 18	None involving pedestrians.
L27: Bridleway 16	Negligible	Crossing Link 18	None involving pedestrians, cyclists or horse-riders.
L28: Footpath 28	Low	Crossing Link 20	One collision with pedestrian.
L29: Bridleway 29	Negligible	Crossing Link 25	None involving pedestrians, cyclists or horse-riders.
L30: NCR 1 South Hetton to Ryhope	Negligible	Crossing Link 25	None involving cyclists.

Magnitude of impact

- 5.8.2.57 Changes in peak daily construction vehicle movements are presented in **Table 5.27** and **Table 5.28**. Links with changes of less than 10% are considered to be of **negligible** magnitude, for both scenarios. The remainder of the links which are expected to experience a change of over 50% are considered to be of **low** magnitude, due to the relative low vehicle flow which would be spread over a 12-hour working day, for both scenarios. The working day on a Saturday is between 7am and 1pm, and as such construction traffic flows will be lower than weekdays and as such the no individual assessment is required.

Significance of effect

- 5.8.2.58 For both scenarios, L20 (Access Road: from A182 to Jade Business Park), Link 24 (Jade Access Road 1), Link 25 (Jade Access Road 2), Link 28 (Footpath 28), L29 (Bridleway 29) and L30 (NCR 1 South Hetton to Ryhope) are determined to have **Minor adverse effects**. All other links are determined to have **Negligible** effects for both scenarios. This is **Not Significant** in EIA terms.

Additional mitigation and residual effect

- 5.8.2.59 It is not currently expected that additional mitigation measures will be required beyond those to be set out in the Outline CTMP and the Outline PRow Management Plan (described in **Section 5.7**). The residual effect is expected to remain **Negligible to Minor adverse (Not Significant)**.

5.8.3 Decommissioning Phase

- 5.8.3.1 The decommissioning phase is not anticipated to exceed the number of vehicles forecast during the construction phase, and the likely duration will be shorter than the construction phase. Overall, the decommissioning phase will include similar activities to the construction phase, but in reverse. It is currently assumed that the onshore export cables and AC connection cables will be left in place to minimise/ avoid environmental disturbance. Furthermore, the baseline traffic data is likely to have increased based on TEMPro growth factors, thereby reducing the impact of the decommissioning phase traffic flows. As such, less of an impact is expected during the decommissioning compared to the construction phase and will be subject to changes in technology and construction techniques.
- 5.8.3.2 The largest traffic volumes are expected to relate to the decommissioning of the LSS. This will require the demolition of the LSS (including foundations) and removal/ disposal of all related equipment and materials. The site will then be reinstated.
- 5.8.3.3 With daily vehicle movements linked to the LSS decommissioning not anticipated to exceed the amount of vehicle movements associated with construction of the LSS, the impacts of traffic and transport during the decommissioning phase are determined to be insignificant..
- 5.8.3.4 It is considered that the effects of the MHPGC Project during the decommissioning phase will be no worse than during the construction period.

Additional Mitigation Measures

- 5.8.3.5 No additional mitigation measures are proposed.

Residual Effects

- 5.8.3.6 The residual effects will align with those presented in the construction phase for the effected links.

5.9 Cumulative effects

5.9.1 Cumulative effects assessment methodology

- 5.9.1.1 The Morven Programme comprises four distinct projects: Morven North, Morven South, Morven Hawthorn Pit Grid Connection Project (MHPGC Project), and Morven Branxton Area Grid Connection Project (MBAGC Project). As the largest Zone of Influence (ZOI) for the onshore CEA does not overlap with Morven North, Morven South or MBAGC, the onshore Cumulative Effects Assessment (CEA) has been undertaken to assess the MHPGC Project alone with relevant projects, plans and activities using a tiered approach. The CEA has been undertaken in accordance with the methodology described in Volume 1, Chapter 4: Approach to Environmental Impact Assessment.
- 5.9.1.2 The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see **Volume 1, Annex 4.4: Cumulative Screening and Location Plan, of the PEIR**). Each project or plan has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.
- 5.9.1.3 In undertaking the CEA for MHPGC Project, it should be noted that other projects and plans under consideration will have differing potential for proceeding to an operational stage and hence a differing potential to ultimately contribute to a cumulative impact alongside MHPGC Project. Therefore, a tiered approach has been adopted, whereby all third-party projects and plans considered have been allocated into 'tiers' reflecting their current stage within the planning and development process. This provides a framework for placing relative weight upon the potential for each project/plan included in the CEA to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the project/plan's parameters. The tiered approach utilised within the MHPGC Project CEA employs the following tiers:
- Tier 1 assessment – Existing developments either built (operational) or under construction³; approved developments awaiting implementation; and permitted/submitted application(s), but not yet determined, plus Morven North and Morven South.
 - Tier 2 assessment – All plans/projects assessed under Tier 1, plus plans/projects where a scoping report has been submitted and is in the public domain.
 - Tier 3 assessment – All plans/projects assessed under Tier 1 and 2, plus MBAGC Project, and plans/projects that are reasonably foreseeable (e.g. projects identified in development plans, projects in other plans and programmes, offshore renewable energy projects that have a Crown Estate Scotland Lease Option Agreement).
- 5.9.1.4 The ZOI for this Traffic and Transport is based on the Traffic and Transport Study Area. The specific projects and plans screened into the CEA for Traffic and Transport are outlined in **Table 5.36**. The developments screened into the assessment are of a size and location which may have a material impact on traffic flows within the study area and therefore require assessment as part of the CEA. Other developments are excluded on the basis that traffic flow increases are accounted for by Temprow growth factors applied to future year assessments.
- 5.9.1.5 All potential impacts from the MHPGC Project alone assessment have been scoped into to the CEA (listed in **Table 5.36**).

³ Note that existing developments are included in Tier 1 CEA long list but are generally screened out of the CEA assessments, aside from the following exceptions:

1) Existing developments which were not present at the time of baseline characterisation, where a potential cumulative impact-receptor pathway has been identified.

2) Existing developments are screened into tier 1 assessments for specific topics where there is a large conceptual, temporal and spatial overlap between project impacts. In these instances, the potential for ongoing effects through cumulative impact-receptor pathways throughout project lifetime, across the development phases, means that they are considered within quantitative assessment for these topic CEAs (e.g., offshore ornithology assessments consider the cumulative effects of operational offshore wind farms).

- 5.9.1.6 Similarly, some of the potential impacts considered within the MHPGC Project alone assessment are specific to a particular phase of development (e.g. construction, O&M or decommissioning). Where cumulative effects with other plans or projects only have potential to occur where there is spatial or temporal overlap with MHPGC Project during certain phases of development, impacts associated with a certain phase may be omitted from further consideration where no plans or projects have been identified that have the potential for cumulative effects during this period.

Table 5.36: List of other projects and plans considered within the Cumulative Effects Assessment for Traffic and Transport

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicable)	Overlap with MHPGC Project
Tier 1					
DCC6 - Seaham Garden Village	Consented	0km	Garden village of up to 1500 dwellings, integrated community health and wellbeing village, commercial and leisure uses, business innovation hub, primary school, public open space, community allotments and associated infrastructure, including new pedestrian and vehicular access from A182.	Under construction, due to be complete 2030	Project is within the applicable ZOI for construction traffic.
DCC7 - Phase 2 Jade Business Park	Consented	0km	Application for reserved matters comprising the construction of 3 industrial units with associated access, parking, landscaping and drainage (Phase 2) pursuant to outline planning permission DM/21/002901/OUT (B2/B8 industrial development).	Detail not available	Project is within the applicable ZOI for construction traffic.

Project/plan	Status	Distance from MHPGC Project (km)	Description of project/plan	Estimated dates of construction (If applicable)	Overlap with MHPGC Project
DCC12 - 81 homes and a convenience store	In Planning - Application submitted	0km	Erection of 81 no. homes, a convenience store (use class E) and associated infrastructure and landscaping	Detail not available	Project is within the applicable ZOI for construction traffic.
DCC13 - 149 homes, Land East of Seaham Garden Village	In Planning - Application submitted	0km	Demolition of existing farm buildings and dwellings and erection of 149 dwellings (use class C3) with vehicle access, open space, landscaping, SUDS, and associated infrastructure works	Detail not available	Project is within the applicable ZOI for construction traffic.
Tier 2					
<i>None identified</i>					
Tier 3					
<i>None identified</i>					

5.9.2 Maximum Design Scenario –Cumulative Effects Assessment

- 5.9.2.1 The MDS identified in **Table 5.36** has been selected as those having the potential to result in the greatest potential effect on an identified receptor or receptor group in relation to the CEA. The MDS have been based on the MHPGC Project alone assessment MDS (**Table 5.25**), as well as publicly available information on other third-party projects and plans that have been screened into the CEA (**Table 5.36**).

5.10 Cumulative Effects Assessment

5.10.1 Overview

- 5.10.1.1 A description of the significance of cumulative effects upon traffic and transport receptors arising from each identified impact is given below. The CEA for MHPGC Project is presented in **Table 5.37**.

5.10.2 Construction and Decommissioning Traffic

- 5.10.2.1 There is potential for cumulative construction traffic effects associated with the MHPGC Project and other projects that are, or could be, under construction and/or in operation within the 4.5 years of the MHPGC Project construction period. It is noted from the MDS assessment the construction period would be shorter but for the cumulative effects assessments 4.5 years has been chosen as it would likely overlap with more projects. If the construction period for the MHPGC Project and cumulative projects overlaps, then there is the potential for sensitive receptors within the ZOI to be affected by cumulative traffic generated during construction.
- 5.10.2.2 There are no cumulative traffic impacts anticipated during operation and decommissioning phases. The assessment of cumulative traffic from the O&M phase of the MHPGC Project has been scoped out. In-combination impacts during decommissioning are unlikely given the nature of the projects and the expected decommissioning period.
- 5.10.2.3 The summary of the Cumulative Effects Assessment is presented in **Table 5.37**.

Table 5.37: MHPGC Project CEA for Construction Traffic

	Cumulative Effects Assessment
	Tier 1
Construction phase	
Magnitude of impact	Tier 1 cumulative projects overlap with the MHPGC Project PEIR Onshore Red Line Boundary or are within the ZOI. At the time of writing, timescales for the construction phases of the Tier 1 projects are currently unknown. To ensure a conservative assessment, it has been assumed that Tier 1 project construction timescales overlap with the MHPGC Project construction period of 2033 to 2037. It has been assumed that the Tier 1 construction phase works would only overlap with the MHPGC Project during core working hours, i.e. the weekday daytime period. Cumulative impacts from construction traffic are expected to have a local special extent, temporary, short-term and reversible. Tier 1 project DCC7 is industrial in nature and the DCC6, DCC12 and DCC13 proposals are residential developments, and as such will have the potential to introduce sensitive receptors which may require consideration in the construction phase assessment once constructed. This chapter has assessed impacts from construction traffic from the MHPGC Project. If the construction phase activities of the MHPGC Project and Tier 1 projects were to overlap, the cumulative impacts are likely to be no greater than that presented in the preliminary assessment for the MHPGC. <u>Tier 2 and Tier 3</u> No relevant cumulative projects have been identified
Sensitivity of receptor	The majority of highway links within the ZOI are classed as negligible to low sensitivity, whilst two PRowS have high sensitivity.
Significance of effect	At most sensitive receptors within the ZOI, the magnitude of the cumulative impact is deemed to be negligible to low, and the sensitivity of the receptor is High. The cumulative effect will therefore be of negligible to minor adverse significance (not significant).
Further mitigation and residual significance	No mitigation measures for traffic and transport receptors is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined in Table 5.25), is not significant in EIA terms.

5.10.3 Proposed monitoring

- 5.10.3.1 An Outline Construction Traffic Management Plan (CoT41) for the MHPGC will be prepared as part of the outline CoCP and submitted as part of the application for the development consent. An Outline PRoW Management Plan (CoT35) will also be developed and included with the application.

5.11 Transboundary effects

- 5.11.1.1 A screening of transboundary impacts has been carried out and any potential for significant transboundary effects with regard to traffic and transport from the construction, O&M and decommissioning phases of the MHPGC Project upon interests of other states has been assessed as part of the PEIR.
- 5.11.1.2 The potential transboundary impacts are screened within **Volume 1, Annex 4.3: Transboundary Screening, of the PEIR**. There are no identified pathways through which either direct or indirect impacts could result in significant transboundary effects on the traffic and transport of a European Economic Area (EEA).

5.12 Inter-related effects

- 5.12.1.1 Inter-related effects are the combined impact of multiple aspects of the MHPGC Project on a single receptor. These are as follows:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the MHPGC Project (construction, O&M and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases;
 - Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor.
- 5.12.1.2 For Traffic and Transport, the following potential impacts have been considered within the inter-related assessment:
- the relationships between increases in traffic and noise upon local residents.
the relationship between increases in traffic and air quality upon local residents.
- 5.12.1.3 Inter-related effects are assessed within **Volume 4, Chapter 5: Inter-related Effects, of the PEIR** with (no) likely significant inter-related effects anticipated.

5.13 Summary

5.13.1 Summary of effects

- 5.13.1.1 This chapter has assessed the potential impacts on traffic and transport from the MHPGC Project.
- 5.13.1.2 **Table 5.38** presents a summary of impacts and confirms the residual effects for the Construction and Decommissioning phases of the MHPGC Project. The impacts associated with the decommissioning phase will not exceed the impacts of the construction phase.

5.13.2 Summary of secondary mitigation and monitoring

- 5.13.2.1 It has been concluded at this stage that, based on the information available, there will be no significant effects on traffic and transport and that no further mitigation will be required beyond the embedded measures described in **Section 5.7**.
- 5.13.2.2 As such, no secondary mitigation is proposed as detailed in **Table 5.38**.

Table 5.38: Summary of potential impacts and residual effects

Impact	Sensitivity of receptor	Magnitude of impact	Significance of impact	Secondary mitigation and monitoring	Residual effect
Construction phase					
Impact on severance and non-motorised user delay	Low to high	Negligible to high	Negligible to minor adverse (Not Significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not Significant)
Impact on driver delay	Low to medium	Negligible to low	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)
Impact on non-motorised user amenity	low	Low to medium	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)
Impact on fear and intimidation	Negligible to high	Negligible	Negligible adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible adverse (Not significant)
Impact on road safety	Negligible to low	Negligible to Low	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)
Decommissioning Phase					
Impact on severance and non-motorised user delay	Low to high	Negligible to high	Negligible to minor adverse (Not Significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not Significant)
Impact on driver delay	Low to medium	Negligible to low	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)

Impact	Sensitivity of receptor	Magnitude of impact	Significance of impact	Secondary mitigation and monitoring	Residual effect
Impact on non-motorised user amenity	low	Low to medium	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)
Impact on fear and intimidation	Negligible to high	Negligible	Negligible adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible adverse (Not significant)
Impact on road safety	Negligible to low	Negligible to Low	Negligible to minor adverse (Not significant)	No further mitigation is considered to be required beyond existing embedded mitigation.	Negligible to minor adverse (Not significant)

5.14 Next Steps

5.14.1.1 Following the submission of this PEIR chapter, further work would be undertaken on the following elements which would be completed and submitted as part of the Traffic and Transport Chapter within the ES that accompanies the application for development consent:

- Refining construction vehicle estimates as the design of the scheme is developed, including estimates for the preferred LSS location.
- Completion of an AIL Study, to fully assess the routes to site from the A19. This will identify any mitigation measures which may be needed to facilitate access by AILs.
- Completion of preliminary designs for all highway access locations, based upon anticipated construction vehicle requirements at each compound. This will include completion of Road Safety Audits and submission of these to DCC for review and discussion.
- Further meetings with the EWG Stakeholders. This engagement will seek to continue collaboration with LHAs and National Highways on the Project, to guide refinement of assessments and provide the necessary highway and transport information to support agreement of key topics as soon as possible.
- Preparation of the Outline CTMP, Outline PRoW MP and Outline HAMP for submission alongside the application for development consent.

5.15 References

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