

Appendix 1B

Glossary

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Revision 1

Volume 0001

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Term	Definition
Annual Average Daily Traffic (AADT)	Annual Average Daily Traffic (AADT) is the total volume of vehicle traffic on a highway or road for a year divided by 365 days.
Abnormal Indivisible Loads	Loads or vehicles that exceed maximum vehicle weight, axle weight or dimensions as set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
Abstraction Licensing Strategy (ALS)	The Environment Agency strategy for managing water resource in the catchment area.
Acoustic environment	Sound from all sources as modified by the environment.
Agricultural Land Classification (ALC)	ALC categorises land into five different grades based on the extent to which physical or chemical characteristics inflict long term limitations on an agricultural site.
Air Quality Management Area (AQMA)	An Air Quality Management Area is an area declared by a local authority which has been determined will exceed the relevant air quality strategy objective.
Air Quality Objective (AQO)	Air Quality Objective Target date on which exceedances of an AQS must not exceed a specified number
Air Quality Standard (AQS)	Pollutant concentrations recorded over a given time period which are considered to be acceptable in terms of what is scientifically known about the effects of each pollutant on health and on the environment.
ALC Grade 1	Land within this grade has little to no limitations to agricultural use. This land can support a very wide range of agricultural and horticultural crops including top fruit, soft fruit/salad crops and winter harvested vegetables. Yields are consistently high.
ALC Grade 2	Grade 2 indicates very good quality agricultural land with only minor limitations that affect crop yield, cultivations or harvesting and potential to grow a wide range of agricultural and horticultural crops. The level of yield is generally high but may be lower or more variable than Grade 1.
ALC Grade 3	The Grade 3 ALC classification indicates good to moderate agricultural land, meaning land with moderate limitations affecting choice of crops, timing, type of cultivation, harvesting and level of yield. Grade 3 land is divided into two subgrades designated as 3a and 3b. Grade 3a (good quality agricultural land) is defined as best and most versatile (BMV) land, while Grade 3b (moderate quality agricultural land) is not BMV.

Term	Definition
ALC Grade 4	Grade 4 indicates poor quality agricultural land, meaning land with severe limitations on the range of viable crops and level of yields, which is mainly suited to grass with occasional arable crops such as cereals and forage crops. Grade 4 can also include arable land that is very dry because of drought.
ALC Grade 5	Grade 5 land has severe limitations which restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.
Ambient sound	The totally encompassing sound in a given situation at a given time. This is usually comprised of sound from all sources in the environment both near and far.
Ambient sound level	The ambient sound level is the equivalent continuous A-weighted sound pressure level deemed to represent the environment ($L_{Aeq,T}$) at the assessment location over a given time interval T.
AR5	Fifth Assessment Report
AR6	Sixth Assessment Report
Archaeological Interest	A heritage asset with value from the potential to hold evidence about the past that can be retrieved through specialist investigation.
Architectural/Artistic Interest	A heritage asset with value from contemporary appreciation of a heritage asset's aesthetics.
Asbestos Containing Materials	Asbestos is a mineral that was frequently used as a building material in the UK between 1940 and 1999, although it was most common in materials made in the 60s, 70s and 80s. For this reason, any structure or product manufactured before the year 2000 (when the material was banned in the UK due to the risks to human health) has the potential to contain asbestos. Materials that commonly contain asbestos include: Loose asbestos in ceiling or floor cavity, Lagging, Sprayed coatings on ceilings, walls and beams/columns, Asbestos insulating board, Floor tiles, textiles and composites, Textured coatings, Asbestos cement products, Roofing felt, Rope seals and gaskets.
Atmospheric dispersion modelling	Mathematical simulation of how air pollutants disperse in the ambient atmosphere.

Term	Definition
Authorised Landfill	Authorised Landfill sites are facilities that local authorities and industry take waste to be disposed of in the ground, and that are currently authorised by the Environment Agency under Environmental Permitting Regulations.
Artificial Water Body (AWB)	The WFD defines an artificial water body as a 'body of surface water created by human activity'. For the Project, this would include Manchester Ship Canal, Bridgewater Canal, and Trent and Mersey Canal, etc.
Background sound level	The A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels. This represents the underlying sound level in the absence of contributions from the sound source under assessment relating to the residual sound level but characterised by $L_{A90,T}$.
Beneficial or Adverse Types of Landscape Effect	The landscape effects may be beneficial, neutral, or adverse. In landscape terms – a beneficial effect would require development to add to the landscape quality and character of an area. Neutral landscape effects would include very low or negligible changes that may be considered as part of the 'normal' landscape processes such as maintenance or harvesting activities. An adverse effect may include the loss of landscape elements such as mature trees and hedgerows as part of construction leading to a reduction in the landscape quality and character of an area.
Beneficial or Adverse Types of Visual Effect	The visual effects may be beneficial, neutral, or adverse. In visual terms – beneficial or adverse effects are less easy to define or quantify and require a subjective consideration of a number of factors affecting the baseline view. In visual terms – a beneficial effect would require development to make a positive contribution to the view e.g. by the removal and/or screening of incongruous features. Neutral visual effects would include very low or negligible changes that may be considered as already visible in baseline views such as maintenance or harvesting activities and movement of vehicles on a main road. An adverse effect may include the introduction into the views of construction activity including plant, buildings, infrastructure and/or vehicles or views of above ground infrastructure as part of the operational phase.
Best and Most Versatile (BMV)	The term BMV refers to the Best and Most Versatile agricultural land value from a soils and agriculture perspective.

Term	Definition
Birds of Conservation Concern (BoCC)	A periodic review of the conservation status of regularly occurring breeding, passage and wintering bird species in the UK, which assigns species green, amber or red list status; indicating increasing level of conservation concern.
Block Valve Installations (BVI)	These sites are separate facilities to the HAGIs and are required to control the flow and pressure of hydrogen at key points along the proposed pipeline.
Bronze Age	-2,600 BCE to -700 BCE
Carbon	'Carbon' is used as shorthand to refer to the basket of six greenhouse gases (GHGs) recognised by the Kyoto Protocol. GHGs are converted to CO ₂ e based on their global warming potential per unit as compared to one unit of CO ₂ .
Carbon dioxide equivalent (CO₂e)	Carbon dioxide equivalent (CO ₂ e) is a term for describing different GHGs in a common unit. For any quantity and type of GHG, CO ₂ e represents the amount of CO ₂ which would have the equivalent global warming impact.
Climate change	The UNFCCC, in its Article 1, defines climate change as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". While climate change can be attributable to natural causes, the UNFCCC distinguish climate change as related to human activities altering the atmospheric composition and climate variability.
Climate change impact	An impact from a climate trend which affects the ability of the receptor or asset to maintain its function or purpose.
Climate trend	A change in weather or climate related parameters which has potential to do harm to environmental or community receptors or assets, for example increased winter precipitation.
Concentrations	Concentrations of pollutants normally reported as micrograms per cubic metre of air.
Conceptual Model	A conceptual model represents the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors.
Consequence (climate change)	Any effect on the receptor or asset as a result of the climate trend having an impact.
Conservation Area	Area of special architectural or historic interest; the character or appearance of which it is desirable to preserve or enhance.

Term	Definition
Construction Environmental Management Plan (CEMP)	Sets out how the construction process will avoid, minimise or mitigate effects on the environment and surrounding area.
Construction Traffic Management Plan (CTMP)	A plan(s) managing construction traffic, personnel travel, measures for road cleaning and sustainable site travel measures relevant to those works.
Controlled waters	Rivers, streams, estuaries, lakes, canals, ditches, ponds and groundwater as far out as the UK territorial limit. The statutory definition is provided in Section 104 (1) of the Water Resources Act 1991 and Section 30A (d) of the Control of Pollution Act 1974.
Cumulative effects	Additional changes caused by a proposed development in conjunction with other similar developments or as a combined effect of a set of developments, taken together.
Cumulative landscape effects	Effects that can impact on either the physical fabric or character of the landscape, or any special values attached to it.
Cumulative visual effects: In combination In succession Sequentially	Effects that can be caused by combined visibility, which ‘occurs where the observer is able to see two or more developments from one viewpoint’ and/or sequential effects which occur when the observer has to move to another viewpoint to see different developments. • In combination: Where two or more developments are or would be within the observer’s arc of vision at the same time without moving his/her head (GLVIA3¹, Table 7.1). • In succession: Where the observer has to turn his/her head to see the various developments – actual and visualised (GLVIA3¹, Table 7.1). • Sequential cumulative effect: Occurs where the observer has to move to another viewpoint to see the same or different developments. Sequential effects may be assessed for travel along regularly used routes such as major roads or popular paths (GLVIA3¹, Table 7.1).
Decibel (dB)	A unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale.

¹ Landscape Institute and Institute of Environmental Management & Assessment (LI and IEMA). (2013). Guidelines for Landscape and Visual Impact Assessment. 3rd Ed. Third Edition. Routledge, London and New York

Term	Definition
Definition of Waste Code of Practice (DoWCoP)	The DoWCoP is an industry code of practice written by the independent research group Contaminated Land: Applications in Real Environments (CL:AIRE) to support and enhance the sustainability of development projects by providing a consistent and efficient process for the reuse of excavated materials. The DoWCoP requires a Materials Management Plan (MMP) to be in place.
Degree of change	A combination of the scale, extent and duration of an effect also defined as 'magnitude'.
Designated heritage asset	Listed Buildings, Scheduled Monuments, Protected Wrecks, Registered Battlefields, Registered Parks and Gardens and World Heritage Sites designated under the relevant legislation.
Designated Landscape²	Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans or other documents.
Designated Site	A site designated for the purposes of nature conservation, either statutorily or non-statutorily, at an international, European, national (UK) or local level.
Development Consent Order (DCO)	A Development Consent Order (DCO) is required for developments which are of national significance, under the Planning Act 2008.
Development Consent Order (DCO) Application	An application for development consent to undertake a Nationally Significant Infrastructure Project, under the Planning Act 2008, made to the Planning Inspectorate. The Planning Inspectorate will consider the application and make a recommendation to the Secretary of State for Energy Security and Net Zero, who will decide on whether development consent should be granted for the Project.
Diffuse Water Pollution Plans (DWPPs)	Diffuse water pollution plans are used to agree action and produce a plan to help reduce diffuse pollution at protected sites. The plans are created by the Environment Agency and Natural England.

² Description as per the terminology provided in the GLVIA3 glossary: Landscape Institute and Institute of Environmental Management & Assessment (LI and IEMA). (2013). Guidelines for Landscape and Visual Impact Assessment. 3rd Ed. Third Edition. Routledge; London and New York

Term	Definition
Direct, indirect and induced effects	Direct effects arise from project activities while indirect effects arise from activities in the supply chain (see definition of 'supply chain'). Induced effects arise from personal spending by employees working in the project or in the supply chain.
Discount rate	The percentage reduction in a future value (such as a promised payment) that an average person would accept in order to obtain the value now, and so not need to rely on promises and/or avoid effects of changes in circumstances. Discount rates are an important subject of general research on societal behaviour. Further information is available in the Green Book (and supplementary guidance) ³ .
District Level Licencing (DLL)	District level licensing (DLL) is an alternative approach to mitigation licensing from Natural England for developments which could affect great crested newts. Instead of delivering mitigation at a site-level, developers can apply to Natural England for an Impact Assessment and Conservation Payment Certificate (IACPC) and provide a conservation payment to compensate for any impacts on great crested newts. The conservation payment is proportionate to the level of impact assessed by Natural England and is used to off-set impacts by contributing to strategic conservation of great crested newts at a district level. If a developer uses DLL they do not need to include detailed baseline surveys or assessment of great crested newts in the Environmental Impact Assessment.
Driver Delay	Delays incurred to the driver of vehicles as they move along the highway network.
Dust	Dust includes solid particles of all sizes that are suspended in air or have settled onto a surface after having been suspended in air.
Dust deposition	The process of which dust deposits/settles onto a surface. A surface being either buildings or vegetation.
Early Medieval	Years 410 to 1066 CE
Ecological Feature	A defined environmental feature usually associated with population, fauna and flora with the potential to be affected by a project.

³ HM Treasury (2018). The Green Book Central Government Guidance on Appraisal and Evaluation. (Online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf (Accessed June 2024).

Term	Definition
Economic sector	A group of economic activities, often defined by statistical authorities, which share production or service delivery characteristics. Examples include the agriculture, manufacturing, energy and health services sectors.
EIA Regulations	These regulations apply the amended EU directive “on the assessment of the effects of certain public and private projects on the environment” (the EIA Directive). The regulations set out a procedure for identifying those projects which should be subject to an Environmental Impact Assessment.
Elements²	Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.
Embodied carbon	The embodied carbon describes the carbon footprint of a material, allowing for the sum of the energy required in resource extraction, and any processing required, as well as the transport and supply logistics to the factory gate (prior to transport to the Project for use), to be accounted for within the overall GHG estimation.
Emission factor	The GHG emissions factors relate a given level of activity, or amount of fuel, energy or materials used, to the mass of GHGs released as a consequence. It is measured in the amount of GHG emissions (in gCO ₂ e, tCO ₂ e, ktCO ₂ e, MtCO ₂ , etc.) relative to the activity unit (e.g. tonnes, km, kgs etc.).
Enhancement²	Proposals that seek to improve the landscape resource of the site and its wider setting beyond its baseline condition.
Environmental fit	The relationship of a development to identified environmental opportunities and constraints in its setting.
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or ‘baseline’).
Environmental measures	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible, remedy identified effects).
Environmental Statement (ES)	An Environmental Statement accompanies the application for a Development Consent Order (DCO). The ES provides a full assessment of the likely significant effects associated with the construction, operation and decommissioning phases of the development. It is the written output presenting the full findings of the Environmental Impact Assessment.

Term	Definition
European Protected Species (EPS)	European Protected Species are species of plants and animals (other than birds) protected by law throughout the European Union.
European Site	European sites are those that are designated through the Habitats Directive and Birds Directive (via national legislation as appropriate). Within England additional sites designated through international convention are given the same protection through policy – overall all of these are referred to as European sites. European sites in England are considered to be SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar sites (designated under international convention) and proposed Ramsar sites.
Exceedance	A period of time where the concentration of a pollutant is higher than that set out in the AQS.
Extreme weather event	A weather event that is as rare as or rarer than the 10 th or 90 th percentile of a probability density function estimated from observations for a specific place and time of year. By definition the characteristics of what is called extreme weather may vary from place to place in an absolute sense.
Façade level	A correction factor (addition of 3dB to the free field level when calculated using BS5228) to take into account reflections from a building.
Feature²	Particularly prominent or eye-catching elements in the landscape such as tree clumps, church towers or wooded skylines OR a particular aspect of the project proposal.
Free-field level	Resulting level from a measurement that is undertaken away from the acoustic influence of a reflective façade (i.e. at least 3.5 m away from any reflective source, not including the ground).
Frequency in Octave Bands	A range of frequencies where the upper frequency limit is twice that of the lower frequency limit. For example, the 1000 Hertz octave band contains acoustic energy at all frequencies from 707 to 1,414 Hertz.
Frequency in One Third Octave Bands	Octave bands that are sub-divided into three parts, equal to 23% of the centre frequency. Used when octave analysis does not provide sufficient detail. Divides the audio spectrum into 33 or more equal parts where the cut-off frequencies have a ratio of 2 ^{1/3} , which is approximately 1.26. For example, a 1 kHz third-octave band filter has a centre

Term	Definition
	frequency of 1,000 Hz with lower and upper frequencies of 891 Hz and 1,112 Hz, respectively. ⁴
Geoarchaeological deposits	Evidence of how natural processes affect the survival and levels of preservation of archaeological remains. Geoarchaeological investigation focuses on understanding how archaeological remains were initially laid down and subsequently modified through time through understanding the physical and chemical properties they leave behind.
Geodiversity	Geodiversity is defined as ‘the range of rocks, minerals, fossils, soils and landforms’ and is the variety of rocks, fossils, minerals, landforms, soils and natural processes, such as weathering, erosion and sedimentation, that underlie and determine the character of our natural landscape and environment.
Geographical Information System (GIS)	A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.
Geotextile	Textile matting laid under aggregate to provide coherence and stability to a temporary road surface.
GLVIA 3	Guidelines for Landscape and Visual Impact Assessment, Third Edition, published jointly by the Landscape Institute and Institute of Environmental Management and Assessment, 2013.
GPA 2	Historic England Good Practice Advice in Planning Note 2: Managing Significance in decision-taking in the Historic Environment 2015.
GPA 3	Historic England Good Practice Advice in Planning Note 3: The Setting of Heritage Assets 2017.
Greenhouse gas (GHG) emissions	GHG emissions are determined by the Kyoto Protocol (1997) to include six gases: carbon dioxide, methane, nitrous oxide, F-gases (hydrofluorocarbons and perfluorocarbons), sulphur hexafluoride and nitrogen trifluoride. To provide consistent reporting of these gases, each is weighted by its global warming potential and converted to CO ₂ e.

⁴ Gracey & Associates (undated). Acoustic Glossary. (online) Available at: <https://www.acoustic-glossary.co.uk/definitions-o.htm> (Accessed June 2024).

Term	Definition
Gross Value Added (GVA)	A measure of economic value, often defined in detail by statistical authorities, which broadly represents the differences between the monetary value of outputs (e.g. sales revenues) and inputs (e.g. costs of materials) arising from an economic activity.
Growthed	The application of traffic growth rates to traffic flows.
Guidelines for Landscape and Visual Impact Assessment 3 (GLVIA, Third Edition)	Guidelines for Landscape and Visual Impact Assessment, Third Edition, published jointly by the Landscape Institute and Institute of Environmental Management and Assessment, 2013.
Habitat of Principal Importance (HPI)	Habitats of Principal Importance for conservation of biodiversity in England, listed by the Secretary of State pursuant to the requirements of Section 41 of the Natural Environment and Rural Communities Act 2006 (as amended).
Habitat Regulations	The Conservation of Habitats and Species Regulations 2017 (as amended) (Habitats Regulations) apply to UK land and territorial waters and act to ensure biodiversity of natural habitats and of wild flora and fauna through a range of measures including designation of SACs.
Habitat Regulations Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.
HDD Compound	Used to encompass all the Horizontal Directional Drilling (HDD) equipment/welfare facilities, entry and exit pit excavation (and soil storage), removal of drilled soil and storage of drilling fluids.
HDD stringing area	Used for storage, laying out and welding of drill string sections. These are non-intrusive works (i.e. there will be no breaking of ground in these areas).
Heavily Modified Water Body (HMWB)	A surface water body which has been subjected to physical alterations from human activity, resulting in a substantial change of character, designated by the Member State in accordance with Annex II of the Water Framework Directive.
Heavy Duty Vehicles (HDV)	Heavy Duty Vehicles are defined as vehicles with a gross weight greater than 3.5 tonnes.
Heavy Goods Vehicles (HGV)	Heavy Goods Vehicles (HGV) over 7.5 tonne gross vehicle weight

Term	Definition
Heritage Significance	The significance of a heritage asset is the product of the value it holds for this and future generations as a result of its historic, archaeological, architectural or artistic interests.
Hertz (Hz)	The number of waves per second. The unit of measurement for frequency of a sound wave.
Highway Link	Identified highways links used as basis for assessment.
Historic Environment Record (HER)	The term HER refers to Historic Environment Record which relates to unknown historic finds and features.
Historical Interest	A heritage asset with value from its association with past events or past people; or where a heritage asset is illustrative of a particular asset type, theme, or period.
Historical Landfill	Historical Landfill sites are former facilities that local authorities and industry took waste to be disposed of in the ground. The sites are now closed and there are no waste management or environmental permits in force.
Horizontal Directional Drill (HDD)	Horizontal Directional Drill (HDD) is a process whereby a tunnel is drilled under an obstacle and a cable duct is pulled through the drilled underground tunnel. It avoids the need for trenches, and enables minimal disruption to routing cables through rivers, roads, drains and other obstacles.
Hot spell	Hot spells are defined as maximum temperatures exceeding 30°C for two or more consecutive days.
Impulsive	A sound described as being impulsive will be characterised by a sudden onset rate of sound. In BS 4142:2014 the onset rate of a sound must exceed a slope gradient of 10 dB per second on the positive slope for a sound to be characterised as impulsive. A penalty of up to 9 dB can be applied to an impulsive sound dependant on impulse prominence.
In-combination Climate Change Impact	Results when a climate change impact increases or decreases the effect of the Proposed Development on an environmental receptor. For example, the biodiversity aspect may identify an effect on an environmental receptor (such as severance of semi-natural woodland) arising from the Proposed Development. In addition, the climate hazard (for example, drought) will lead to a climate change impact (for example, reduced vegetation growth), the ICCI is the exacerbation of the original effect identified by the environmental aspect. Any environmental measure in place to reduce the effect of the severance would therefore need to also consider the future climate conditions.

Term	Definition
Indirect effects²	Direct effects relate to the host landscape and concern both physical and perceptual effects on the receptor. Indirect effects relate to those landscapes and receptors which separated by distance or remote from the development and therefore are only affected in terms of visual or perceptual effects. The Landscape Institute also defines indirect effects as those which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
Intermittent	An intermittent sound will come from a source that has on and off conditions that are readily distinguishable against the residual acoustic environment. In BS 4142:2014 a penalty of 3 dB can be applied to a sound where it is determined to be intermittent.
Iron Age	Years -800 BCE to 43 CE
Iterative design process	The process by which project design is amended and improved by successive stages of refinement which respond to growing understanding of environmental issues.
Key characteristics	Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.
L_{A10, 18h}	The L _{A10, 18h} is the A-weighted sound pressure level that is exceeded for 10% of an 18-hour measurement.
L_{A90, T}	The A-weighted sound pressure level that is exceeded for 90% of a given time interval, T.
L_{Aeq, 16hr} / L_{Aeq, 8hr}	The L _{Aeq} over 16 hour and 8 hour periods respectively
L_{Aeq, 18hr} / L_{Aeq, 6hr}	The L _{Aeq} over 18 hour and 6 hour periods respectively.
L_{Aeq, T}	The A-weighted equivalent continuous sound level. It is the notional continuous level that, over the defined time period, T, contains the same sound energy as the actual fluctuating sound that occurred over the same time period.
L_{AFmax, T}	The maximum recorded sound level within a given time period, T, measured using a fast time weighting.
L_{AN, T}	The level of A-weighted noise exceeded for N% of the measurement time T. Note that the time weighting (usually Fast) is sometimes included, denoted by 'F' (e.g. LAFN, T).

Term	Definition
Land cover	The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.
Landscape and Visual Impact Assessment (LVIA)	A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity.
Landscape Character Assessment	The process of identifying and describing variation in the character of the landscape and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. The process results in the production of a Landscape Character Assessment.
Landscape character²	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape classification	A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape.
Landscape constraints	Components of the landscape resource such as views or mature trees recognised as constraints to development. Often associated with landscape opportunities.
Landscape effects²	Effects on the landscape as a resource in its own right. An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern here is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. (GLVIA3 ¹ , Para 5.1).
Landscape fit	The relationship of a development to identified landscape opportunities and constraints in its setting.
Landscape patterns	Spatial distributions of landscape elements combining to form patterns, which may be distinctive, recognisable, and describable e.g. hedgerows and stream patterns.
Landscape qualities	A term used to describe the aesthetic or perceptual and intangible characteristics of the landscape such as scenic quality, tranquillity, sense of wildness or remoteness. Cultural and artistic references may also be described here.

Term	Definition
Landscape quality (condition)²	A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.
Landscape receptors²	Defined aspects of the landscape resource that have the potential to be affected by a proposal.
Landscape resource	The combination of elements that contribute to landscape context, character, and value.
Landscape sensitivity	The sensitivity of the landscape to a particular development considers the susceptibility of the landscape and its value.
Landscape strategy	The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programmes or related documents.
Landscape value²	The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons. The value of the Landscape Character Types or Areas that may be affected, based on review of any designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value.
LAQM	The process of reviewing and assessing local air quality by local authorities.
LASmax,T	The maximum recorded sound level within a given time period, T, measured using a slow time weighting.
Level of effect	Determined through the combination of sensitivity of the receptor and the proposed magnitude of change brought about by the development.
Light Duty Vehicles (LDV)	Light Duty Vehicles are defined as vehicles with a gross weight less than 3.5 tonnes.
Light Goods Vehicles (LGV)	Light Goods Vehicles (LGV) under 7.5 tonne gross vehicle weight
Line pipe	A type of pipe through which liquid or gas is transported from one point to another.
Listed Building	A building or structure of special historical or architectural/artistic interest. Designated The list is compiled by the Secretary of State for Department Digital, Culture,

Term	Definition
	Media and Sport following advice by Historic England. All buildings built before 1700 which survive in anything like their original condition are likely to be listed, as are most buildings built between 1700 and 1850.
Local Wildlife Site (LWS)	A non-statutory site designated for nature conservation. Usually designated by a local authority or nature conservation partnership using criteria aligned with local or regional nature conservation priorities.
Locally Important Geological Site (LIGS)	These are equivalent to Sites of Borough or Local Importance for Nature Conservation and accorded equivalent protection.
Locally listed building	A building, structure or feature which, whilst not listed by the Department for Digital, Culture, Media and Sport for its national importance, is felt by the planning authority to be of local importance due to its architectural, historical or environmental significance.
Magnitude (of effect)²	A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short term or long term in duration.
Main rivers	A statutory type of watercourse in England and Wales, usually larger streams and rivers, but also some smaller watercourses, which are formally defined as follows: “main river means a watercourse or part of a watercourse designated as main river on the statutory main river map held by the Environment Agency”. Effectively, a main river is any watercourse over which the Environment Agency exercises its flood defence powers and flood risk activity permitting powers. All other watercourses are referred to as ‘ordinary watercourses’. The Lead Local Flood Authority or (where present) Internal Drainage Board are the responsible authorities for consenting engineering works liable to affect ordinary watercourses.
Materials Management Plan (MMP)	A MMP is a mechanism by which those who are developing a site can comply with the Environment Agency regulations for excavated ground materials. A MMP can be used to show that excavated ground materials are not a waste under the Waste Management Regulations and can therefore be reused onsite in line with the Definition of Waste: Code of Practice.
Maximum Design Scenario	The maximum traffic generating scenario used to inform assessment.

Term	Definition
Mean (average)	The arithmetic average of a set of numbers, e.g. add up the numbers and divide by the number of numbers.
Medieval	Years 1066 to 1540 CE
Mesolithic	Years -10,000 to -4,000 BCE
Metres Above Ordnance Datum (mAOD)	This gives the actual elevation of the level referenced to the mean sea level at the UK Ordnance datum at Newlyn, Cornwall. All elevations in the UK are derived from this datum. ⁵
Ministry of Agriculture Fisheries and Food (MAFF)	The former Ministry of Agriculture, Fisheries and Food (MAFF) was a United Kingdom government department created by the Board of Agriculture Act 1889, now Department for Environment, Food & Rural Affairs (Defra).
Mitigation	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible, remedy identified effects. (GLVIA3 ¹ , Para 3.37).
Modal (average)	The mode is the number in a dataset that is repeated more often than any other number in the same set.
Modern	Years 1901 to present
National Planning Policy Framework (NPPF)	Sets out the government's planning policies for England and how they should be applied.
National Policy Statement (NPS)	Sets out the government's policy on national significant infrastructure development, and are the primary policy used by the Secretary of State in examining and determining applications for Nationally Significant Infrastructure Projects (NSIPs).
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects (NSIPs), under the Planning Act 2008, are major infrastructure developments in England and Wales which are consented by DCO.
Neolithic	Years -4,000 to -2,200 BCE

⁵ Department for Environment Food & Rural Affairs (2023). Groundwater - What Does MAOD Mean? [online]. Available at <https://support.environment.data.gov.uk/space/DPK/10354703/Groundwater+-+What+Does+MAOD+Mean%3F> [Accessed July 2024].

Term	Definition
Net zero GHG emissions	Reduction in net GHG emissions by at least 100% below 1990 levels by 2050 (the 'UK carbon target', often referred to as 'net zero').
Noise	A term used to describe 'unwanted sound' or any sound that is undesired by the recipient.
Non-designated heritage asset	Buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets.
Palaeoenvironmental deposits	Environmental evidence that can help us understand the relationship between humans and the natural environment over time. Evidence comes in the form of plant, insect and mollusc remains, along with soils and sediments.
Palaeolithic	Years -1,000 000 to -10,000 BCE
Pedestrian Amenity	The convenience or comfort of movement on foot.
Pedestrian Delay	Delay incurred to pedestrians moving from one side of a road to another.
Perception	Combines the sensory (that we receive through our senses) with the cognitive (our knowledge and understanding gained from many sources and experiences).
Perceptual Aspects	A landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity. (GLVIA3 ¹ , Box 5.1)
Photomontage²	"A visualisation which superimposes an image of the proposed development upon a photograph or series of photographs."
Post Medieval	1540 to 1901
Preliminary Environmental Information Report (PEIR)	The Preliminary Environmental Information Report (PEIR) is the written output of the Environmental Impact Assessment undertaken to date for the Proposed Development. It is developed to support formal consultation. The PEIR presents the preliminary findings of the assessment to allow an informed view to be developed of the Project. The PEIR provides an overview of the assessment approach that has been undertaken, along with the preliminary conclusions on the likely significant effects of the Project and environmental measures proposed. The original HyNet North West Hydrogen Pipeline Project PEIR (Wood, 2022) was published in September 2022 in

Term	Definition
	support of Section 42 consultation under the Planning Act 2008.
Preliminary Order Limits	The area within which the Project and associated infrastructure will be located, including the temporary and permanent construction and operational work areas.
Principal Aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers and aquifers previously designated as major aquifer.
Private Water Supply (PWS)	PWS refers to Private water supply” or “private supply of water” meaning a supply of water other than a supply provided directly by a water undertaker or licensed water supplier and which is comprised of all physical assets from the point of abstraction to the point of use, including associated pipes, fittings and tanks.
Protected Wreck	Protected areas likely to contain the remains of a vessel or its contents, which are of historical, artistic or archaeological interest. Designated by the Department for Digital, Culture, Media and Sport. These can be found offshore or in inland waters.
Public Rights of Way Management Plan (PRoWMP)	A plan(s) managing construction traffic, including protocols for delivery of Abnormal Indivisible Loads to site, personnel travel, measures for road cleaning and sustainable site travel measures relevant to those works.
Rarity	The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type. (GLVIA3 ¹ , Box 5.1).
Rating level, $L_{Ar, T}$	The specific sound level, plus any adjustments for the characteristic features of the sound, (such as tonality, impulsivity or intermittency).
RCP8.5	High/worst-case emissions scenario. This scenario uses a Representative Concentration Pathway defined by the Intergovernmental Panel on Climate Change’s latest 5th Assessment Report. Representative Concentration Pathway 8.5 specifies the concentration of greenhouse gases that would result in 8.5 W/m ² radiative forcing at the top of the atmosphere by 2100, relative to pre-industrial levels. The increase of global mean surface temperature by the end of

Term	Definition
	the 21 st century (2081–2100) relative to 1986–2005 is likely to be 2.6°C to 4.8°C under RCP8.5.
Receptor	Physical landscape resource, special interest, or viewer group that will experience an effect.
Recreation Value²	Evidence that the landscape is valued for recreational activity where experience of the landscape is important. (GLVIA3 ¹ , Box 5.1)
Regionally Important Geological Site (RIGS)	The most important places for geology and geomorphology outside statutorily protected land such as Sites of Special Scientific Interest. The designation of a Regionally Important Geological Site is one way of recognising and protecting important Earth science and landscape features for future generations to enjoy. Sites are selected according to their value for: educational fieldwork scientific study, historical significance and aesthetic qualities. In London Regionally Important Geological Sites are sites that are considered worthy of protection for their geodiversity importance at the London-wide level.
Registered Battlefield	Register of nationally significant military engagements maintained and designated by Historic England.
Registered Park and Garden	Register of historic parks, gardens, grounds, and planned open spaces maintained and designated by Historic England
Representative Concentration Pathway (RCP)	Future pathways based on emissions and concentrations of greenhouse gases. Each RCP provides only one of many possible scenarios that could lead to specific forcing mechanisms.
Representativeness²	Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.
Residual Sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.
Residual Sound Level $L_r = L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level of the residual sound at the assessment, T.
Residual effects	Likely environmental effects, remaining after mitigation.
Romano-British	Years 43 to 410 CE

Term	Definition
Root mean square (rms)	Root Mean Square of a time-varying quantity is obtained by squaring the amplitude at each instant, obtaining the average of the squared values over the interval of interest, and then taking the Square Root of this average.
Scale Indicators	Landscape elements and features of a known or recognisable scale such as houses, trees, and vehicles that may be compared to other objects, where the scale of height is less familiar, to indicate their true scale.
Scenic quality	Depends upon perception and reflects the particular combination and pattern of elements in the landscape, its aesthetic qualities, its more intangible sense of place or 'genius loci' and other more intangible qualities. (GLVIA3 ¹ , Box 5.1)
Schedule 1 birds	Those bird species listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), which along with their dependent young, receive increased protection from disturbance during breeding activities.
Scheduled Monument	Nationally important archaeological sites. Decisions on national importance are guided by principles of selection laid down by the Secretary of State for Digital, Culture, Media and Sport following consultation with Historic England. These can be above or below-ground and do not need to be ancient.
Scoping Opinion	Adopted by the Planning Inspectorate on behalf of the Secretary of State, to inform the assessment work and further design evolution.
Scoping Report	Contains conclusions made on whether an effect should be considered significant and requires assessment.
Secondary A Aquifer	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary B Aquifer	These are mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers.
Sensitivity²	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value associated to that receptor.

Term	Definition
Serious personal injury accident	An accident leading to serious injuries requiring hospital treatment.
Setting	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate an asset, or may be neutral.
Severance	Real or perceived difficulties moving between one part of a community to another.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Significant Effects	It is a requirement of the EIA Regulations to determine the likely significant effects of the development on the environment which should relate to the level of an effect and the type of effect. The significance of an effect gives an indication as to the degree of importance (based on the magnitude of the effect and the sensitivity of the receptor) that should be attached to the impact described. Whether or not an effect should be considered significant is not absolute and requires the application of professional judgement. Significant – ‘noteworthy, of considerable amount or effect or importance, not insignificant or negligible’. The Concise Oxford Dictionary. Those levels and types of landscape and visual effect likely to have a major or important/noteworthy or special effect of which a decision maker should take particular note.
Site of Biological Importance (SBI)	See Local Wildlife Site.
Site of Special Scientific Interest (SSSI)	Sites designated at the national level under the Wildlife & Countryside Act 1981 (as amended). They are a series of sites that are designated to protect the best examples of significant natural habitats and populations of species.
Slight accident	An accident leading to slight injuries which are defined as cuts, bruises or sprains requiring roadside attention but not normally requiring admission to hospital.
Sound level meter (SLM)	SLM is the instrument used for acoustic (sound that travels through air) measurements. It is commonly a hand-held instrument with a microphone. The diaphragm of the

Term	Definition
	microphone responds to changes in air pressure caused by sound waves.
Sound pressure level (Lp)	Sound pressure level is the RMS value of the Instantaneous Sound Pressures measured over a specified period of time, measured in decibels (dB) to a given reference pressure level.
Source	A substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
Source-Pathway-Receptor (SPR) Linkage	The linkage of a source of contamination on or under the land which has the potential to cause harm or pollution (such as a landfill) and a receptor (something that could be adversely affected by contamination such as groundwater or people) by means of a pathway (a route by which the receptor is exposed to, or affected by, the contamination such as direct contact). A land contamination risk only exists where a source, pathway and receptor are present. Without this complete linkage, there is no risk to people or the environment even if a source of contamination is present.
Special Area of Conservation (SAC)	International designation implemented under the Habitats Regulations for the protection of habitats and (non-bird) species. Sites designated to protect habitats and species on Annexes I and II of the Habitats Directive. Sufficient habitat to maintain favourable conservation status of the particular feature in each EU member state needs to be identified and designated.
Special Protection Area (SPA)	Sites designated under EU Directive (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive (The Conservation of Habitats and Species Regulations 2017)
Species of Principal Importance (SPI)	Species of Principal Importance for conservation of biodiversity in England, listed by the Secretary of State pursuant to the requirements of Section 41 of the Natural Environment and Rural Communities Act 2006 (as amended).
Specific sound level	An equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, Tr.

Term	Definition
Statutory Consultation	Statutory consultation is consultation required under Section 42 and Section 47 of the Planning Act 2008 with the relevant consultation bodies and the public on the preliminary environmental information.
Strategic Road Network	The national Strategic Road Network operated and maintained by National Highways.
Supply chain	The companies and sometimes other organisations which provide materials, equipment and services to the project being undertaken. ‘First tier’ suppliers directly serve the project but rely on tier 2 and their suppliers in an overall chain of provision.
Susceptibility²	The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.
Temporary or permanent effects	Effects may be considered as temporary (Construction phase) or permanent (Operational phase).
The Planning Inspectorate (PINS)	The Planning Inspectorate deals with planning appeals, national infrastructure planning applications, examinations of local plans and other planning-related and specialist casework in England and Wales.
The Project	Cadent Ltd is developing the HyNet North West Hydrogen Pipeline Project (‘the Project’) to construct and operate the UK’s first 100 percent hydrogen pipeline network at scale.
Time depth	Historical layering – the idea of landscape as a ‘palimpsest’, a much written-over asset of landscape.
Time weighting	Time weightings determine how quickly the sound level meter responds to changes in sound pressure level.
Tonal	A sound described as being tonal will be characterised as a sound that contains one or more distinct tones. In BS 4142:2014 a tone can be identified where a frequency band contains more energy and is shown to have a certain level difference over its neighbouring bands. A penalty of up to 6 dB can be applied to a tonal sound dependant on tonal prominence.
Townscape	The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces.

Term	Definition
Traffic growth rate	An estimate of the rate of change in traffic flows from one year to another year.
Trenchless Crossing	A Crossing of the highway/rail line/navigable watercourse by means of construction that does not result in surface impacts.
Trenchless Crossing Compound	Trenchless crossing compounds encompass all the trenchless equipment/welfare facilities associated with the construction of trenchless crossings such as construction materials and plant associated with the construction i.e. cable and ducting (as required). This area includes entry pit excavations and storage of drilling fluids (as required).
Trip Distribution	The proportion of vehicle trips between a site and other areas.
Trip Generation	The number of vehicle movements into and out of a development.
Type or Nature of effect	Whether an effect is direct or indirect, temporary or permanent, beneficial (positive), neutral or adverse (negative) solus or cumulative.
UK Carbon Budget	The UK Carbon budgets were introduced under the Climate Change Act (2008). Each carbon budget provides a five-year, statutory cap on total GHG emissions, which should not be exceeded, in order to meet the UK's emission reduction commitments. So far, six carbon budgets have been set in law, covering the period from 2008 to 2037.
UKCP18	UK Climate Change Projections 2018. UK Climate Projections 2018 is the most up-to-date assessment of how the climate of the UK may change over the 21st century, recently updated in 2018. UK Climate Projections 2018 uses climate science to provide observations and climate change projections for the UK and globally until 2100.
Viewpoints	Selected for illustration of the visual effects fall broadly into three groups: • Representative Viewpoints: selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ – for example certain points may be chosen to represent the view of users of particular public footpaths and bridleways;

Term	Definition
	• Specific Viewpoints: chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, such as landscapes with statutory landscape designations or viewpoints with particular cultural landscape associations. • Illustrative Viewpoints: chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations. (GLVIA3¹, Para 6.19)
Visual amenity	The overall views and surroundings, which provide a visual setting or backdrop to the activities of people living, working, participating in recreational activities, visiting or travelling through an area.
Visual effect²	Effects on specific views and on the general visual amenity experienced by people.
Visual Receptors²	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Visual sensitivity	The sensitivity of visual receptors such as residents, relative to their location and context, to visual change proposed by development.
Visualisation	Computer visualisation, photomontage, or other technique to illustrate the appearance of the development from a known location.
Vulnerability	The propensity or predisposition of a system or receptor to be adversely affected. This encompasses the sensitivity of the system or receptor and its capacity to cope and adapt.
Water Framework Directive (WFD)	The Water Framework Directive (WFD) is referred to in legislation as Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.
Weather	Short term variations in the state of the atmosphere at a particular place and time in regard to heat, cloudiness, dryness, sunshine, winds, rain, etc.
Weighting network	An electronic filter in a sound level meter, which approximates, under defined conditions, the frequency response of the human ear. The A-weighting network is most commonly used.

Term	Definition
Wireline/Wireframe	A computer-generated line drawing of the DTM (digital terrain model) and the proposed development from a known location.
World Heritage Site	A natural or man-made site, area, or structure recognised as being of outstanding international importance and therefore as deserving special protection. Sites are nominated to and designated by the World Heritage Convention.
Zone of Theoretical Visibility (ZTV)²	A map, usually digitally produced, showing areas of land within which, a development is theoretical visible.

HyNet North West Hydrogen Pipeline

Delivering clean growth

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