



A9 Dualling Programme: Pitlochry to Killiecrankie
DMRB Stage 3 Environmental Statement

Volume 1: Main Report
December 2017

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Glossary

'A' weighting dB(A)	The human ear does not respond uniformly to different frequencies. A-weighting is commonly used to simulate the frequency response of the ear.
Abutment	The structure that supports the end of the bridge or supports and retains the bridge approach.
Acid grassland	Grassland that occurs on acidic soils (pH less than 5.5).
Aggregate	Materials used in construction, including sand, gravel, crushed stone, slag, or recycled crushed concrete.
Air Quality Management Area (AQMA)	A non-permanent designation created if monitoring reveals that statutory air quality thresholds are being exceeded or will be exceeded in the near future.
Algae	Single or multi-cellular organisms that photosynthesise.
Alien species	A species that exists outside of its normal distribution.
Allocation	A proposal for land for housing, industry or other uses within a Local Plan that identifies a specific area of land to be developed within the time period of the plan.
Alluvial	Loose, unconsolidated soil or sediments, which has been eroded, reshaped by water in some form, and redeposited in a non-marine setting.
Amber list species	Species with unfavourable conservation status in Europe or showing moderate declines or rare or localised in their distribution.
Ambient Noise	The all-encompassing sound at any point in time.
Amenity grassland	Intensively managed and regularly mown grasslands that are typical of golf courses, sports pitches, playing fields and lawns. These grasslands are typically of low diversity and limited wildlife and landscape value.
Amenity value	Defined as the relative pleasantness of a journey and relates in particular to the exposure of pedestrians and others to traffic.
Ammocoete	Larval stage in the life cycle of lamprey.
Amphibian	Any cold blooded animal of the class Amphibia which includes frogs, toads and newts.
Ancient Woodland	Areas of land that appear as wooded on maps dated pre-1750 (in Scotland) and are considered likely to have been continuously wooded from this date.
Ancient Woodland Inventory	Aims to list all probable ancient semi-natural woodlands on a county basis together with those woodlands in other ancient categories of lesser woodland nature conservation interest.
Anthropogenic	Originating in human activity.
Appropriate Assessment	Determination by an identified competent authority (Scottish Government, informed by SNH) of likely significant effects associated with a development on a European Protected Site. Required by law under Regulation 48 of the Habitats Regulations (1994), implementing Article 6(3) of Habitats Directive (92/43/EEC).
Aquifer	A body of rock through which appreciable amounts of water can flow.

Arable land	Land that is or can be used for growing crops.
Assessment	An umbrella term for description, analysis and evaluation.
At-grade	At the same level.
Attenuation	Increase in duration of flow hydrograph with a consequent reduction in peak flow.
Attribute	Characteristics of an environmental receptor.
Authority area	The area administered by a local authority for example, District Council, City Council or Unitary Authority.
Average Score Per Taxon (ASPT)	Calculated by dividing the Biological Monitoring Working Party (BMWP) score of a sample by the number of scoring families that contributed to the BMWP score of that sample.
Barrier effects	Features such as roads which may impact ecological communities through restriction of movement and habitat alteration, sub-dividing populations with demographic and possibly genetic consequences.
Baseline	The existing conditions which form the basis or start point of the environmental assessment.
Basic Payment Scheme (BPS)	The largest of the European Union's rural grants and payments to help the farming industry.
Bedrock	Hard rock that lies beneath a superficial cover of soils and sediments.
Best Practicable Means	A feasible approach [to mitigation], having due regard for means, resources and conditions. Control of Pollution Act (1974) defines this as measures 'reasonably practicable having regard among other things to local conditions and circumstances, to the current stated of technical knowledge and to financial implications'.
Biodegradable	Capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution.
Biodiversity	Biological diversity, or richness of living organisms present in representative communities and populations.
Biodiversity Action Plan (BAP)	Sets objectives, along with measurable targets for the conservation of biodiversity.
Biological Monitoring Working Party (BMWP)	A scoring system for measuring water quality using species of macroinvertebrates as biological indicators, based on the variability in sensitivity of invertebrate groups to different pollutants/pollutant types. Pollution-sensitive taxa are assigned a higher score than pollutant tolerant taxa. The higher the sum of individual taxon scores, the better quality invertebrate communities and the better the water quality.
BoCC	Birds of Conservation Concern
Bog	An area of soft, wet, peaty ground.
Broadleaved woodland	An area of woodland with predominantly deciduous tree species (less than 10% coniferous trees in the canopy).
Buffer	A natural, undisturbed strip surrounding a development or land disturbance activity or bordering a stream or permanent water body.

Bund	An embankment, wall or dam that can be used to minimise noise or alternatively built around an oil tank to contain the contents in the event of spillage.
Burn	A small stream.
Calcareous	Refers to a sediment, sedimentary rock, or soil type which is formed from or contains a high proportion of calcium carbonate.
Cantilever	A rigid structural element, such as a beam or a plate, anchored at only one end to a support from which it is protruding.
Catchment	The area contributing flow to a point on a drainage system.
Channel morphology	Physical characteristics of stream channels, such as width/depth ratio and sinuosity, and types of pattern e.g. braided, meandering, straight. .
Community	Assemblage of interacting populations that occupy a given area.
Community Conservation Index (CCI)	A conservation indexing protocol for summarising aquatic macroinvertebrate data obtained from inland flowing and still water sites.
Community Severance	Community severance is defined here as the separation of residents from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows.
Compulsory Purchase Order (CPO)	A legal document giving the government (Scottish Ministers) power to compulsorily purchase the areas of land necessary for construction of the scheme.
Coniferous woodland	An area of woodland with predominantly coniferous tree species (less than 10% deciduous trees in the canopy).
Conservation	Preservation or restoration of the natural environment and wildlife.
Conservation Area	Area of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. Designated under section 61 Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.
Contaminated land	Land in such condition by reason of substances on or under the land that significant harm is being caused, there is a significant possibility of such harm being caused or pollution of controlled water is being, or likely to be caused'.
Contracting Parties	Partnership or organisation which enters into a binding agreement with one or more other contracting parties.
Core Path	A right of way designated by a Local Authority as being of importance to maintain access and leisure provision.
Couch	Above-ground otter shelter.
Culvert	A metal, wooden, plastic, or concrete conduit through which surface water can flow under or across roads.
Decibel (dB)	The range of audible sound pressures is approximately 0.00002 Pa to 00 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB.

Deciduous	Trees and shrubs that shed their leaves annually.
Demography	The studying/science of the characteristics of populations, such as size, growth rate etc.
Designed Landscape	A designed area of landscape which is identified in the Inventory of Gardens and Designed Landscapes (jointly compiled by SNH and Historic Scotland).
Detention basin	A dry area for temporarily storing water which delays its flow downstream. Includes some water quality benefits. Usually part of SuDS (drainage design).
Diffuse pollution	Contamination and pollution arising from many dispersed and different sources. These sources are often individually minor, but collectively may be significant.
Discharge regime	The rate of flow of a river at a particular moment in time, relative to volume and velocity.
Displacement	To move something from its natural environment.
Do-Minimum (DM)	The base scenario for assessment purposes, where there are no modifications to the existing road network. May also refer to the minimum modifications, which will necessarily take place in the absence of a proposed scheme.
Do-Something (DS)	The 'with proposed scheme' scenario for assessment purposes,
Drey	The most common squirrel nest type. Comprises a round ball of twigs, leaves and bark. Frequently built close to tree trunk or in branch forks to provide shelter.
Driven shooting	Involves birds being driven over guns by beaters. The guns are stationed in pre-determined positions.
Earthworks	Works created through the moving of quantities of soil or unformed rock.
Ecological Clerk of Works (ECoW)	A qualified ecologist who supervises construction sites, ensuring that ecological impacts are minimised and that the law relating to protected species etc. is complied with.
Ecological receptors	Living organisms, habitats, or natural resources that could be impacted by the construction or operation of the proposed scheme.
Ecology	The branch of biology concerned with the relations of organisms to one another and to their physical surroundings.
Ecosystem	A biological community of organisms interacting with one another and their physical environment.
Effect	The result of change or changes on specific environmental resources or receptors.
Element	A component part of the landscape or environment (e.g. roads, hedges, woodlands).
Environmental Impact Assessment (EIA)	The process by which information about the environmental effects of a project is evaluated and mitigation measures are identified.
Environmental Statement (ES)	Document provided by the Developer to the Competent Authority, containing environmental information required under Article 5 of Directive 85/337/EEC as amended.
Ephemeral flow	A flow that lasts a very short time.

Eutrophic	Waterbody that is rich in nutrients and so supporting a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.
Fen	A wetland that, like a bog, has organic soil. In contrast with bogs, fens receive most of their water from the surrounding groundwater, and consequently can be either acidic or alkaline, depending on the surrounding earth. They support a greater variety of plants than bogs, but are often still dominated by peat.
Fill	Material deposited by man in ground depression or excavated area.
Floodplain	Land adjacent to a river, which is subject to regular flooding.
Flora	Referring to plants of a particular region or habitat.
Flow regime	Combinations of river discharge and corresponding water levels and their respective (yearly or seasonally) averaged values and characteristic fluctuations around these values.
Fluvial geomorphology	The study of landforms associated with river channels and the sediment processes which form them.
Footprint	The geographical extent of an ecological impact.
Foraging	Searching for food or provisions.
ForestGALES	A computer based decision support tool which estimates the probability of wind damage o any conifer stand in Britain.
Fragmentation	Breaking up of an organisms habitat into smaller fragments that may vary in size.
Freshwater	Bodies of water such as ponds, lakes, rivers and streams containing low concentrations of dissolved salts and other total dissolved solids.
Gabion	A cage, cylinder, or box filled with rocks, concrete, or something sand and soil for use in civil engineering, road building, military applications and landscaping.
Geomorphology	The branch of geology concerned with the structure, origin and development of topographical features of the earth's crust.
Geophysical survey	Geophysical survey is a non-intrusive pre-construction archaeological evaluation technique that exploits a variety of physical or chemical characteristics of rocks and soils etc, in an attempt to locate underground features of archaeological interest. Types of geophysical survey include magnetometer survey, magnetic susceptibility survey and resistivity survey.
Glacial Till	Glacial till is that part of glacial drift which was deposited directly by the glacier. It may vary from clays to mixtures of clay, sand, gravel and boulders.
Glaciofluvial	Pertaining to streams fed by melting glaciers, or to the deposits and landforms produced by such streams.
Green list species	Bird species with no identified threat to their population status.
Gross Value Added (GVA)	The measure of the value of goods and services produced in an area, industry or sector of an economy, in economics.
Ground Investigation	Exploratory investigation to determine the structure and characteristics of the ground. The collected information is used to establish or predict ground and groundwater behaviour during, and subsequent to, construction.

Groundwater	Water below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities, as used, for example in a Phase 1 Habitat Survey.
Habitat fragmentation	Describes the breaking up of an organisms preferred environment/habitat. Occurs naturally through geological processes that alter the layout of the physical environment over long periods of time, or through human activities, such as land conversion.
Habitat Regulations Appraisal (HRA)	The process by which certain plans or projects are assessed which could affect the integrity of European sites. The report is used to inform an Appropriate Assessment (AA) under the requirements of the Habitats Directive.
Habitats Directive	EC Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.
Highways Agency Water Risk Assessment Tool (HAWRAT)	A Microsoft Excel application which assesses the effects of routine road runoff and accidental spillage risk to receiving water features.
Heathland	Uncultivated land with sandy soil and scrubby vegetation.
Heavy Duty Vehicle (HDV)	Vehicles greater than 3.5 tonnes gross (includes HGVs, as below).
Heavy Goods Vehicle (HGV)	Vehicles with 3 axles (articulated) or 4 or more axles (rigid and articulated).
Hibernacula	Structures used by animals to hibernate through the winter, such as log piles, rock piles, vegetation piles, old mammal burrows, tree root complexes and buildings.
Hibernation	Extended period of torpor undertaken during winter.
Holt	Deep underground otter shelter.
Hydraulic	Of, relating to, or operated by the force of liquid in motion.
Hydrocarbon	A chemical compound of hydrogen and carbon.
Hydrogeology	Branch of geology dealing with occurrence, distribution, and effect of groundwater.
Hydrological	The exchange of water between the atmosphere, the land and the oceans.
Hymenoptera	Taxonomic order of the Insects which includes ants, bees and wasps.
Impact	Any changes attributable to the proposed scheme that have the potential to have environmental effects (i.e. the causes of the effects).
Impermeable	Material that does not allow fluids to pass through it.
Improved grassland	Grasslands that have been so modified by fertilisers, drainage or grazing that they have lost most of the species expected in unimproved grassland.

Incidental sighting	Casual observation of a plant or animal of one or more species recorded by whilst performing a non-relevant ecological survey.
Infrastructure Investment Plan (IIP)	Scottish Government document which sets out why we need to invest, how we invest and what strategic, large scale investments we intent to take forwards within each sector over the next 10 to 20 years.
Inter-bedded	Alternating layers of different materials in a section of bedded rocks.
Interim Advice Note (IAN)	Guidance notes issued by Highways England which should only be used in connection with works on motorways and trunk roads.
Invertebrate	An animal without a backbone.
LAeq	Equivalent Continuous Sound Level. A notional steady sound level which would cause the same A-weighted sound energy to be received as that due to the actual, possibly fluctuating, sound level over a given period of time.
Landform	Combination of slope and elevation producing the shape and form of the land surface.
Landscape	Human perception of the land, conditioned by knowledge and identity with a place.
Land-take	Acquired land which is necessary to construct the proposed scheme and associated infrastructure and to undertake the essential environmental mitigation measures.
Lateral connectivity	Hydrologic connectivity is defined as the condition by which disparate regions on the hillslope are linked via subsurface water flow. Lateral refers to the spatial dimensions of riverine/riparian/floodplain habitats.
Latrine	Dung pit left by a badger.
Lichen	A group of complex organisms, which are formed from the symbiotic association of a fungus and an alga.
Listed Building	Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the 'Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997' and other planning legislation. Classified categories A-C.
Lithology	The study of rocks, with particular emphasis on their in terms of their color, texture, and composition.
Local Landscape Character Area (LLCA)	An area outlined as having distinct characteristics based on landscape features. Derived from regional landscape studies available from SNH.
Macroinvertebrate	An animal without a backbone that can be seen with the naked eye, for example, snails, waterfleas, shrimps or insects.
Macrophyte	An individual alga large enough to be seen easily with the unaided eye.
Made ground	Ground comprised of material deposited by man i.e. not natural.
Magnitude	Size, extent, scale and duration of an impact.
Marshland	Low-lying wet land with grassy vegetation; usually a transition zone between land and water.
Meadow	An area of grassland that has is normally grazed by livestock and/or used for growing hay.

Megoptera Families	An order of insects which contains alderflies, dobsonflies and fishflies.
Migration	The movement (of an animal) from one habitat to another according to the seasons.
Mineral extraction	The removal of a naturally occurring solid formed through geological process that has a characteristic chemical composition, a highly ordered atomic structure and specific physical properties.
Mire	General term for all peat-forming ecosystems; bog, fen, carr, muskeg, moor and peatland (does not include marshes as these are non-peat-forming and are seasonally flooded).
Mitigation	Measure to avoid, reduce or offset potential adverse impacts.
Moraine	Any glacially formed accumulation of unconsolidated glacial debris that occurs in both currently and formerly glaciated regions through geomorphological processes.
National Vegetation Classification (NVC)	A system to describe British vegetation types, whereby each vegetation type has a different 'code'.
Native	A species occurring in its normal geographic range (not introduced).
Non-motorised users	Pedestrians, cyclists and equestrians.
Non-prime land	Agricultural land of Land Capability for Agriculture (LCA) classes 3.2 to 7.
Notable species	Species which are below Red Data Book species in terms of threat status.
Odonata Families	An order of carnivorous insects, encompassing dragonflies and damselflies.
Offsetting	The process of compensating for something with something else.
Oligotrophic	Relatively poor plant nutrient and containing abundant oxygen in the deeper parts of a waterbody.
Open space	Any land laid out as public parks or used for the purpose of public recreation, or land which is a disused burial ground.
Outfall	The place of discharge e.g. where a sewage pipe discharges into a river.
Parr	Young salmon or trout with distinctive thumbprint markings on flanks.
Pasture	An area of grassland (or other suitable plants) used to feed grazing animals.
Peatland	Land where plant decomposes only partially and accumulates to form brown to black organic material called peat; the two main types are bogs and fens.
Perennial	A plant that continues to grow from year to year, sometimes undergoing several years of growth before seeds are produced.
Permeable	Something that can be penetrated/passed through by something else e.g. soil is permeable to water as the water can pass through it.

pH	A figure expressing acidity or alkalinity on a logarithmic scale of 0 to 14.
Phase 1 Habitat Survey	This identifies the different habitats that are contained within or make up a site, and the key plant species for each of those habitat types.
Phase 2 Habitat Survey	A detailed specialist survey or phytosociological (plant community) study of a habitat within a site. It may utilise analysis of sample vegetation plots (quadrats) following the UK National Vegetation Classification.
Photosynthesis	The process by which green plants and some other organisms use sunlight to synthesize nutrients from carbon dioxide and water. Photosynthesis in plants generally involves the green pigment chlorophyll and generates oxygen as a by-product.
Pile/Piling	A heavy stake or post made out of timber, steel, reinforced concrete or pre-tensioned concrete, driven into the ground to support foundations.
Planning Advice Note (PAN)	Supporting document to National Planning Policy Guidelines, which disseminates good practice and provides more specific design advice of a practical nature.
Plantation woodland	Woodland of any age that obviously originated from planting.
Podzol	An infertile acidic soil having an ash-like subsurface layer (from which minerals have been leached) and a lower dark stratum, occurring typically under temperate coniferous woodland
Poaching	Term used in river habitat survey (RHS) to mean the erosion of a watercourse bank by livestock.
Potential Impact	The impact on an aspect of the environment that may occur in the absence of mitigation.
Prime agricultural land	Agricultural land of Land Capability for Agriculture (LCA) classes 1, 2 and 3.1.
Priority habitat	Those which have been identified as being most threatened and requiring actions under the UK Biodiversity Action Plan.
Priority species	Those which have been identified as being most threatened and requiring actions under the UK Biodiversity Action Plan.
Proposed Scheme	The scheme design as reported in Chapter 4 of the ES, and used as the basis for environmental assessment and reporting.
Pyrrhic Victory	A victory that inflicts such a devastating toll on the victor that it is tantamount to defeat.
Qualitative	Concerned only with the nature of the organism/substance being investigated.
Quantitative	Concerned with the number, as well as nature of the organism/substance being investigated.
Ramsar sites	Internationally important wetland identified for conservation under the RAMSAR Convention 1971.
Receptor	In this context, an element that is susceptible to being affected (either directly or indirectly) by the proposed scheme. Examples include habitats, species, people, properties, landscape, archaeological remains etc.

Red Data List	The IUCN Red List of Threatened Species™ provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. Designed to determine the relative risk of extinction, and to catalogue and highlight those plants and animals that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable).
Red list species	Bird species in severe population decline. Or globally threatened.
Regionally Important Geological Sites (RIGS)	Sites designated by regional geological groups on locally developed criteria, currently the most important places for geology and geomorphology outside statutorily protected land such as SSSIs.
Residual impact	Residual impact means the environmental impact after the provision of mitigation measures, if any.
Retention Pond	A wet area for temporarily storing water which delays its flow downstream. Includes some water quality benefits. Usually part of SuDS (drainage design).
Riffle	A shallow section of a river/stream where the water is fast-flowing over a gravel/cobble substrate.
Right of way	A public right of way is a defined route which has been used by the general public for at least 20 years and which links two public places (usually public roads).
Riparian habitat	Natural home for plants and animals occurring in a thin strip of land bordering a stream or river.
River Basin District	The area of land and sea, made up of one or more river basins, together with the associated groundwater and coastal waters, identified by the Water Framework Directive as the main unit for the management of river basins.
River basin management plan	A plan setting out actions required within a river basin to achieve set environmental quality objectives, reviewed on a six yearly basis.
Rockhead	The surface representing the top of the solid geological strata, i.e. below any drift deposits.
Roost	Any resting site used by bats including maternity roosts which are used by females and their young, hibernacula which are used during winter hibernation and transitional roosts which may be used at any time.
Rough grassland	Rank or tussocky grassland. May have been drained, grazed, mown or treated with manure but not so improved by fertiliser or herbicides as to have altered the sward composition greatly. Associated with unenclosed uplands, lowlands with poor access or wet areas, and road verges.
Rough pasture	Rough pasture is non-intensive grazing pasture, commonly found on poor soils, especially in hilly areas.
Ruderal	A plant that colonizes disturbed ground. They are often weeds that have a high nutrient requirement and/or are intolerant of competition.
Runoff	Water that flows over the ground surface to the drainage system. This occurs if the ground is impermeable or if permeable ground is saturated.
Salinity	The saltiness or dissolved salt content of a body of water.
Salmonid	Pertaining or belonging to the family Salmonidae (salmon, trout and charr).
Scabbling	The process of reducing and/or shaping stone or concrete.

Scheduled Monument (SM)	A monument which has been scheduled by the Scottish Ministers as being of national importance under the terms of the 'Ancient Monuments and Archaeological Areas Act 1979'.
Scottish Planning Policy (SPP)	A statement of Scottish Government policy on nationally important land use.
Scour	A depression or hole left when sediment is washed away from the bottom of a river.
Scrub	Vegetation dominated by locally native shrubs, usually less than 5m tall.
Sediment	Material carried in particles by water or wind and deposited on the land surface or seabed.
Sedimentation	The deposition or accumulation of sediment.
Semi-improved grassland	Grassland that has been modified by fertilizers, drainage or intensive grazing. Contain less species diversity than unimproved grasslands.
Semi-natural woodland	Woodland that does not obviously originate from planting. The distribution of species will generally reflect the variations in the site and the soil. Planted trees must account for less than 30% of the canopy composition.
Sett	The burrow system of badgers comprising a series of underground tunnels and chambers. There are several categories of sett including a main sett, annexe sett, subsidiary sett and outlier sett.
Severance	The separation of communities from facilities and services used within their community. Alternatively, in relation to agricultural land, the division of land into separate areas, potentially affecting access or availability for agricultural use.
Side bar	Deposits of alluvium found on the inside bank of a meander, they form when alluvium is eroded from the outside bend (cut bank) and deposited on the inside bend of a meander.
Sinuuous	A river with many curves/ bends (meanders).
Site compound	A secure area close to the construction site which provides full site services including storage for equipment, materials and fuel, offices and amenity areas.
Sites of Special Scientific Interest (SSSI)	Designated areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species in the UK. The site network is protected under the provisions of Sections 28 and 19 of the Wildlife and Countryside Act 1981 as well as the Amendment Act 1985 and the Environmental Protection Act 1990.
Spawning	The process of egg release into the water by aquatic animals.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 74/409/EEC) to protect important bird habitats.
Specific impact	A forceful consequence or strong effect to something particular or unique.
Spraint	Otter faeces.
Stakeholder	A person or group that has an investment, share or interest in something.

Strategic Environmental Assessment (SEA)	The process by which information about the environmental effects of proposed plans, policies and programmes are evaluated.
Strategic Transport Project Review (STPR)	A two year review of the Scottish transport network being undertaken by Transport Scotland. It aims to identify and prioritise road, rail and other interventions of national significance, which will be taken forward to improve the network. Through selecting which transport projects of national significance should be progressed, the STPR would also affect regional and local transport networks.
Scottish Trip End Program (STEP)	A software application that has been developed by Transport Scotland to enable the derivation of population, employment, households by car ownership, trip ends and growth factors based on data from the National Transport, Demand and Land use Models.
Substrate	An underlying substance or layer.
Suckler cattle	The mother of a calf raised for beef production.
Superficial Deposits	The youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back 1.8 million years.
Susceptibility	The ability to accommodate change without adverse effect.
Sustainable Drainage Systems (SUDS)	A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.
Swamp	An area of wet spongy land that often supports some trees and vegetation but is too wet for cultivation.
Taxa	Plural of taxon.
Taxon	A taxonomic group of any rank.
Terrestrial	The environment above the mean high water spring
Threshold	The minimum intensity or value of a signal etc that will produce a response or specified effect.
Trapezoid	A quadrilateral with no sides parallel.
Turbid	High concentrations of suspended sediment and particulates in the water column.
Vascular plants	Higher plants, including flowering plants, conifers and ferns. They are characterised by the possession of specialized tissues (vascular tissue) for the translocation of substances around the plant.
Velocity	A measure of the speed and direction of an object.
Viaduct	A bridge that carries a road, railroad etc. over a valley.
Vulnerable groups	In environmental assessment, generally children, elderly and disabled.
Washland	Land that is periodically flooded by a river or stream.
Water Framework Directive (WFD)	European environmental legislation (2000/60/EC) relating to inland surface waters, estuarine and coastal waters and groundwater. Fundamental objective to maintain "high status" of waters where it exists, preventing any deterioration in the existing status of waters and achieving at least "good status" in relation to all waters by 2015.

Water quality	The chemical and biological status of various parameters within the water column and their interactions, for example dissolved oxygen, indicator metals such as dissolved copper, or suspended solids (the movement of which is determined by hydrological process and forms geomorphological landforms).
Windthrow	The uprooting and overthrowing of trees by the wind.
Zone of Theoretical Visibility (ZTV)	The process of determining the visibility of an object in the surrounding landscape. The process is objective in which areas of visibility or non-visibility are determined by computer software using a digital elevation dataset.

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Abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
AAWT	Average Annual Weekday Traffic
ACO	Artificial Cover Object
ADS	Advanced Direction Signs
AEP	Annual Exceedance Probability
ALG	Green Filamentous Algae
AOD	above Ordnance Datum
APIS	Air Pollution Information System
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
AQS	Air Quality Strategy
ASPT	Average Score Per Taxon
ATC	Automatic Traffic Count
AWI	Ancient Woodland Inventory
B&B	Bed and Breakfast
BAP	Biodiversity Action Plan
BBS	Breeding Bird Survey
BCT	Bat Conservation Trust
BFI	Base Flow Index
BGS	British Geological Survey
BMWP	Biological Monitoring Working Party
BPpN	Bat Passes per Night

BPS	Basic Payment Scheme
BRE	Building Research Establishment
BS	British Standard
BST	British Summer Time
BTO	British Trust for Ornithology
CA	Conservation Area
CAR	Water Environment (Controlled Activities) (Scotland) Regulations 2005
CC	Correlation coefficient
CCI	Community Conservation Index
CD&E	Construction, Demolition and Excavation Waste
CEH	Centre for Ecology and Hydrology
CEMP	Construction Environmental Management Plan
ch	Chainage
CIEEM	Chartered Institute for Ecology and Environmental Management
CIEH	Chartered Institute of Environmental Health
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLEA	Contaminated Land Exposure Assessment
CMS	Carbon Management System
CNAP	Cairngorm Nature Action Plan
CNPA	Cairngorms National Park Authority
CNPLDP	Cairngorms National Park Local Development Plan
CNPPP	Cairngorms National Park Partnership Plan
CO	Coloeptera Families
CO₂	Carbon Dioxide
CO₂e	Carbon Dioxide Equivalent

CoCP	Code of Construction Practice
COPCs	Contaminants of Potential Concern
CoS	Community Score
CP	Crossing Point
CPO	Compulsory Purchase Order
CROW	Catalogue of Rights of Way
CRTN	Calculation of Road Traffic Noise
CS	Conservation Score
CSM	Conceptual Site Model
CWS	Critical Wind Speed
D&B	Design and Build Type Contract
D2AP	Dual Carriageway Rural All Purpose
DAMS	Detailed Aspect Method of Scoring
dB	Decibel
DEFRA	Department of the Environment, Food and Rural Affairs
DM	Do-Minimum
DMP	Dust Management Plan
DMRB	Design Manual for Roads and Bridges
DMU	Dry Mammal Underpass
DS	Do-Something
DSFB	District Salmon Fisheries Board
DTM	Digital Terrain Model
DVC	Deer Vehicle Collision
DWPA	Drinking Water Protected Area
EA	Environment Agency
EC	European Commission

EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EFT	Emissions Factors Toolkit
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
EPS	European Protected Species
EQI	Ecological Quality Indices
EQR	Ecological Quality Ratio
EQS	Environmental Quality Standards
ES	Environmental Statement
ESG	Environmental Steering Group
EU	European Union
FB	Fractional bias
FEH	Flood Estimation Handbook
FRM	Flood Risk Management (Scotland) Act 2009
FWPM	Freshwater Pearl Mussel
GAC	Generic Assessment Criteria
GBR	General Binding Rules
GCR	Geological Conservation Review
GDL	Gardens and Designed Landscape
GEP	Good Ecological Potential
GES	Good Ecological Status
GHG	Greenhouse Gases
GI	Ground Investigations
GIS	Geographic Information System

GLVIA3	Guidelines for Landscape and Visual Impact Assessment 3rd Edition (2013)
GPPs	Guidance for Pollution Prevention
GVA	Gross Value Added
GDWTE	Groundwater Dependent Terrestrial Ecosystems
ha	Hectare
HAWRAT	Highways Agency's Water Risk Assessment Tool
HDV	Heavy Duty Vehicle
HDPE	High-Density Polyethylene
HEL	Heritage Environment Ltd.
HER	Historic Environment Record
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HLA	Historic Landscape Assessment
HLT	Historic Landscape Type
HMWB	Heavily Modified Waterbodies
HRA	Habitat Regulations Appraisal (or Assessment)
HRA	Hot Rolled Asphalt
HSE	Health and Safety Executive
HVS	Hydrodynamic Vortex Separator
Hz	Hertz
IAN	Interim Advice Note
IAQM	Institute of Air Quality Management
IBI	Index of Biotic Integrity
IEEM	Institute of Ecology and Environmental Management
IEMA	Institute of Environmental Management and Assessment
IIP	Infrastructure Investment Plan

INNS	Invasive Non-Native Species
JHI	James Hutton Institute
JLA	Journey Length Assessment
JNCC	Joint Nature Conservation Council
JTC	Junction Turning Count
km/h	Vehicle speed, kilometres per hour
KPI	Key Performance Indicators
KRS	Key Reptile Site
LAQM	Local Air Quality Management
LBAP	Local Biodiversity Action Plan
LCA	Land Capability for Agriculture
LCA	Landscape Character Area
LDP	Local Development Plan
LEDs	Light Emitting Diodes
LFASS	Less Favoured Area Support Scheme
LFE	Low Flows Enterprise
LGS	Local Geodiversity Sites
LIFE	Lotic Invertebrate Index for Flow Evaluation
LLCA	Local Landscape Character Area
LMA	Land Made Available
LNR	Local Nature Reserve
LNRS	Low Noise Road Surfacing
MACS	Mobility and Access Community for Scotland
mBGL	Metres Below Ground Level
MCHW	Manual of Contracts Documents for Highway Works
MLURI	Macaulay Land Use Research Institute

MoU	Measure of Uncertainty
MSW	Municipal Solid Waste
MTRIPS	Major Transport Infrastructure Projects
NAEI	National Atmospheric Emissions Inventory
NBN	National Biodiversity Network
NCN	National Cycle Network
NCR	National Cycle Route
NFG	Number of Functional Groups
NFUS	National Farmers Union of Scotland
NHBC	National House Building Council
NISR	The Noise Insulation (Scotland) Regulations
NLS	National Library of Scotland
NMU	Non-Motorised User
NNG	Night Noise Guidelines
NO₂	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NPF	National Planning Framework
NPF2	National Planning Framework 2
NPF3	National Planning Framework 3
NPL	National Physics Laboratory
NRTF	National Road Traffic Forecasts
NSA	National Scenic Area
NSR	Noise Sensitive Receptor
NTAXA	Number of Macrophyte Taxa
NTS	National Trust for Scotland
NTS	Non-Technical Summary

NTS	National Transport Strategy
NVC	National Vegetation Classification
NWSS	Native Woodland Survey of Scotland
O/E	Observed/Expected
OM	Odonata and Megaloptera Families
OS	Ordnance Survey
Pa	Pascal's
PAN	Planning Advice Note
PCM	Pollution Climate Mapping
PELs	Probable Effects Levels
PES	Preliminary Engineering Services
PHI	Pollution Hazard Indices
PKC	Perth & Kinross Council
PKHT	Perth & Kinross Heritage Trust
PKLPD	Perth & Kinross Local Development Plan
PM	Particulate Matter
PMI	Pollution Mitigation Indices
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidelines
PPP	Pollution Prevention Plan
PSI	Proportion of Sediment-Sensitive Invertebrates
PSSR	Preliminary Sources Study Report
PSYM	Predictive System for Multimetrics
PWS	Private Water Supply
Q50	Flow that is expected to be exceeded 50% of the time (m3/s)
Q95	Flow that is expected to be exceeded 95% of the time (m3/s)

QMED	Median annual maximum flood flow (m ³ /s) (the same as the flow with a 2yr return period)
RAP	Route Action Plan
RBMP	River Basin Management Plan
RCAHMS	Royal Commission on Ancient and Historical Monuments of Scotland
RICT	River Invertebrate Classification Tool
RIGS	Regionally Important Geological Sites
RISS	Route Improvement Strategy Study
RMNI	River Macrophyte Nutrient Index
RMSE	Root Mean Square Error
RoD	Record of Determination
ROW	Right of Way
RSPB	Royal Society for the Protection of Birds
RST	Runoff Specific Threshold
SAM	Scheduled Ancient Monument
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SBS	Scottish Biodiversity Strategy
ScARF	Scottish Archaeological Research Framework
SCMP	Silt Control Management Plan
SDP	Strategic Development Plan
SEA	Strategic Environmental Assessment
SEDPL	Strategic Environmental Design Principles - Landscape
SEPA	Scottish Environment Protection Agency
SFCC	Scotland Fisheries Co-ordination Centre
SFRA	Strategic Flood Risk Assessment
SGV	Soil Guideline Value

SIA	Simple Index Approach
SLA	Special Landscape Area
SLQ	Special Landscape Quality
SMA	Stone Mastic Asphalt
SMCs	Standard Mitigation Commitments
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SPP	Scottish Planning Policy
SQs	Special Qualities
SSBSS	Scottish Suckler Beef Support Scheme
SSC	Suspended Sediment Concentration
SSE	Scottish Southern Energy
SSSI	Site of Special Scientific Interest
STAG	Scottish Transport Appraisal Guidance
STEP	Scottish Trip End program
STPR	Strategic Transport Project Review
SUDS	Sustainable Drainage Systems
SWMP	Site Waste Management Plan
SWL	Sound Power Level
SWT	Scottish Wildlife Trust
SY15	Summer 15 Years
TACTRAN	Tayside and Central Scotland Transport Partnership
TAN	Technical Advice Note
tCO2e	Total Embodied Carbon
TCV	Taxon Cover Value
TDSFB	Tay District Salmon Fisheries Board

TELS	Threshold Effects Levels
THC	The Highland Council
TMfS	Transport Model for Scotland
TPO	Tree Preservation Order
TRL	Transport Research laboratory
TRS	Trophic Ranking Score
TRSG	Tayside Raptor Study Group
TS	Transport Scotland
TSS	Total Suspended Soils
UNESCO	The United Nations Educational, Scientific and Cultural Organization
uPVC	Unplasticised Polyvinyl Chloride
v/v	Volume per Volume
WCA	Wildlife and Countryside Act 1981
WDRS	Wind Damage Risk Status
WEWS	Water Environment and Water Services (Scotland) Act 2003
WF	Water Feature
WFD	Water Framework Directive
WHO	World Health Organisation
WHPT	Whalley, Hawkes, Paisley and Trigg
WLA	Wild Land Areas
WRAP	Waste and Resources Action programme
WS2+1	Wide single 2+1 (sections of roads consisting of two lanes of travel in one direction and a single lane of traffic in the opposite direction).
WVI	Wildlife Vehicle Incident
WYO	Winter Year of opening
ZTV	Zone of Theoretical Visibility

