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Environmental Impact Assessment Record of Determination

M90 Junction 1B to 1C Northbound

Contents

Project Details

Description

BEAR Scotland has been commissioned by Transport Scotland to carry out resurfacing works on the M90 northbound between Junction 1B and 1C. The works on the carriageway will consist of a 170mm inlay across the scheme extents including sections of the hard shoulder. The works will involve the reinstatement of road markings and studs for a length of 1232m (approx. 1.36ha) on the M90 northbound carriageway.

The construction activities for the resurfacing procedure are as follows:

- Set up traffic management (TM) and mark out site.
- Milling of existing bituminous material by road planer.
- Jackhammer and compressor for breaking up surfaces not accessible by planer (e.g. around gullies).
- Loader/excavator used to collect and move excess material.
- Sweeper to collect loose material and provide clean laying surface.
- Milled out/excavated materials all taken off site.
- Tack/bond coat laid.
- Install traffic loops.
- Base / binder material laid and compressed by paver (where required).
- Material compacted using a heavy roller.
- New bituminous surface course material laid by paver.
- Material compacted using a heavy roller.
- Mechanical sweeper to collect loose material.
- Heavy Goods Vehicle (HGV) for removal and replacement of material.
- Road markings and studs applied where necessary (in accordance with the Traffic Signs Manual, Chapter 5).
- Remove TM and open road.

The works are currently programmed to be completed within the 2025 / 2026 financial year, with works due to commence on 14th January 2026 for a duration of 15 nights (excluding Saturdays and Sundays). TM will involve full nighttime road closures with a signed diversion in place. Traffic will use the M90 Junction 1B offslip to come off the M90 and reach Ferrytoll Junction roundabout, where they will take the first exit onto the B981, then continue along the B981 which becomes Milne

Road then Barham Road, at Barham Road Roundabout traffic will take the third exit onto Millenium Avenue, then at the next roundabout traffic will take the second exit onto Castle Road, traffic will continue along Castle Road until they reach the A985 roundabout where they will take the third exit onto A985 Admiralty Road. Traffic will continue along A985 Admiralty Road until they reach Admiralty Junction and take the first exit on the roundabout to join the M90 via Junction 1C northbound onslip.

Location

The scheme lies on the M90 northbound carriageway, northwest of North Queensferry (Figure 1), within Fife Council and is predominantly bordered by agricultural land and residential areas.

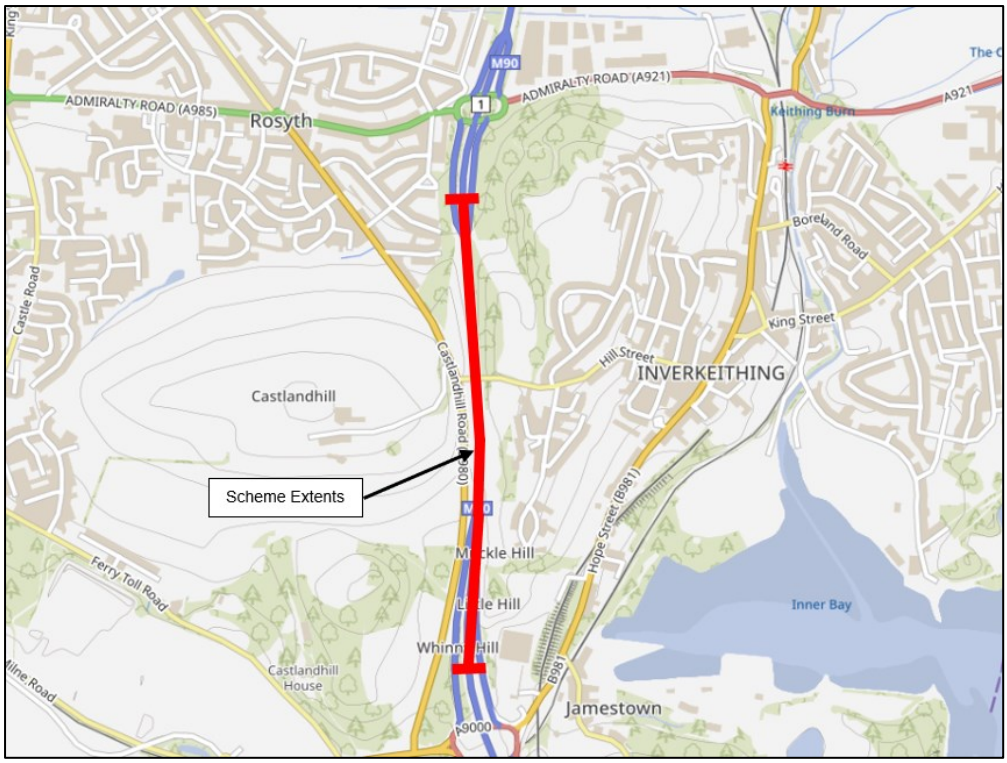

Figure 1: M90 Junction 1B to 1C Northbound Scheme Extents - Source: Asset Management Performance System (AMPS). © Europa Technologies Ltd. Contains Ordnance Survey data © Crown copyright and database right 2018.

Description of local environment

Air quality

Receptors – refer to 'Population and Human Health'.

A search of the Air Quality in Scotland online mapping records that air quality monitoring sites in the wider area record bandings in the 'green zone' (Low Index 1-3).

The scheme lies within the boundary of Fife Council, which has no active Air Quality Management Areas (AQMAs) within its administrative boundary. The closest AQMA lies within the boundary of the City of Edinburgh Council, 'Air Quality Management Area Glasgow Road 2013', approx. 9.4km south of the scheme and has been declared for nitrogen dioxide (NO_2).

There are 11 sites registered on the Scottish Pollutant Release Inventory (SPRI) for pollutant releases to air within 10km of the scheme within the last 10 years:

- Rosyth Dockyard, Dunfermline – Other Activities, declared for Non-Methane Volatile Organic Compounds (NMVOCs), located approx. 2.4km west of the scheme.
- Muir Dean Coal Site, Drumcooper Farm Crossgate – Mineral Industry, declared for carbon dioxide (CO_2) and methane, located approx. 5km northeast of the scheme.
- Glendevon Poultry Farm, Wagon Road, Dunfermline – Intensive Livestock Production and Aquaculture, declared for ammonia, located approx. 5.4km northwest of the scheme.
- Elmbank Poultry Farm, Crossgates, Fife – Intensive Livestock Production and Aquaculture, declared for ammonia and methane, located approx. 5.4km northeast of the scheme.
- Dalmeny Hound Point, South Queensferry – Energy Sector, declared for Non-Methane Volatile Organic Compounds, located approx. 5.6km southeast of the scheme.
- Mossbank Poultry Farm, Cowdenbeath, Fife – Intensive Livestock Production and Aquaculture, declared for ammonia, located approx. 7.5km northeast of the scheme.
- Craigies Poultry Farm, Townhill, Dunfermline – Intensive Livestock Production and Aquaculture, declared for ammonia, located approx. 7.6km northwest of the scheme.
- Fife Council, Lochhead Landfill, By Wellwood, Fife – Waste and Waste-Water Management, declared for CO_2, chlorofluorocarbons (CFCs) and methane, located approx. 7.8km northwest of the scheme.

- Fife Ethylene Plant, Mossmorran – Chemical Industry, declared for benzene, butadiene, CO_2, carbon monoxide, methane, NO_2, NMVOCs, particulate matter (PM) (total) and toluene, located approx. 8.7km northeast of the scheme.
- Fife NGL Plant, Cowdenbeath – Energy Sector, declared for CO_2, carbon monoxide, NO_2, nitrous oxide, NMVOCs, sulphur dioxide (SO_2) and sulphur trioxide (SO_3), located approx. 9.5km northeast of the scheme.
- Hillwood Quarry, Ratho, Midlothian – Mineral Industry, declared for CO_2 and PM_{10} and smaller, located approx. 9.9km south of the scheme.

Baseline air quality in the study area is mainly influenced by vehicles travelling along the M90 trunk road. Secondary sources are derived from the adjacent quarry and day-to-day agricultural land management activities.

Cultural heritage

The PastMap and Historic Environment Scotland (HES) online mapping tools records two designated sites within 300m of the scheme extents:

- Battle of Inverkeithing II Inventory Battlefield (IB) lies within the scheme extents.
- Jamestown, Forth Bridge, North Approach Railway Viaduct Listed Building (LB) (ID: LB49652) lies approx. 190m southeast of the scheme.

Approx. 27 undesignated cultural heritage assets (UCHAs) pertaining to National Records of the Historic Environment (NRHE) and NRHE Maritime lie within 300m of the scheme extents, the closest of which lies adjacent to the M90 within the scheme extents:

- Castleland Hill NRHE.

Construction of the M90 carriageway is likely to have removed any archaeological remains that may have been present within the trunk road boundary. The potential for the presence of unknown archaeological remains in the study area is therefore assessed to be low.

Landscape and visual effects

The scheme is not situated within a National Scenic Area or National Park (NP).

The Landscape Character Types (LCT) within the study area are ‘Coastal Hills - Fife’ (no. 192) (Scottish Landscape Character Types). The characteristics of which are:

- Close association with the coast, either through views of the sea, the Firths or the estuaries or indirect coastal experiences of sounds, smell, etc.

- Predominantly medium to large, open, undulating arable fields, often with no field boundaries or with mainly wire fences, low hedges or some stone dykes and little other vegetation cover.
- Isolated farms and extended or converted farmsteads amongst open, exposed fields.
- Extensive seaward views across the North Sea or the Firths and land beyond, but generally landward views are contained by hills in the near distance.
- Distinctive edges to the character type, created either by distinct breaks of slope or by rivers, roads, built development or the Coastal Cliffs or Coastal Braes.
- General lack of tree cover, with relatively few forests and shelterbelts.
- Some pasture and rough hill grazing on the poorer hill soils. Occasional field corner plantations and small semi-natural woodlands alongside burns.
- Infrequent, small, often exposed and conspicuous settlements of stone or white or pale colour-washed render and grey roofs and single storey or two storey houses with small windows to the sea.
- Designed landscapes, castles, dovecotes historic villages and rural churches.
- Golf courses, primarily in eastern parts.
- Medium to large scale, often open or exposed coastal landscape, where the character is always influenced by the sea and can be particularly affected by the weather conditions and views of the sky and the sea.
- Generally a simple, sloping, organised, tended, farming landscape with regular or geometric patterns.

Land use within 300m of the scheme is categorised into the following:

- Motorway and major roads.
- Managed woodland.
- Rectilinear fields and farms.
- Cemetery.
- Railway features.
- Industrial or commercial area.
- Urban area.
- Designed landscape.
- Restored agricultural land.
- Recreation area.
- Rough grazing.

The national scale land capability for agriculture classifies land surrounding the scheme as being:

- 'Class 888' – Urban.

There are three areas of woodland on the Native Woodland Survey of Scotland (NWSS) within 300m of the scheme extents:

- Hawthorn scrub (approx. 1.3ha) lies approx. 20m east of the scheme.
- Nearly-native hawthorn scrub (approx. 1ha) lies approx. 40m east of the scheme.
- Nearly-native lowland mixed deciduous woodland (approx. 1.8ha) lies approx. 254m northeast of the scheme.

One area of woodland of Long-Established of Plantation Origin recorded on the Ancient Woodland Inventory Scotland lies within 300m of the scheme extents:

- Approx. 12ha lies approx. 141m west of the scheme.

In addition, two areas of broadleaved woodland lie within 300m of the scheme:

- Approx. 0.7ha lies approx. 22m east of the scheme.
- Approx. 2.1ha lies approx. 32m east of the scheme.

There are no trees covered by a Tree Preservation Order (TPO) with connectivity to the scheme extents.

The existing trunk road is a prominent linear landscape feature. The trunk road corridor, for example, has a distinct character shaped by fast-flowing traffic, road markings, safety barriers, signage, landscaping etc. The scale of the trunk road detracts from the quality and character of the wider landscape.

Biodiversity

The NatureScot Sitelink online mapping tool identifies that the scheme lies within the buffer zone of several of the qualifying features of the Firth of Forth SPA and Ramsar Site and Forth Islands SPA, the Outer Firth of Forth and St Andrews Bay Complex SPA and Loch Leven SPA and Ramsar Site. The Firth of Forth SPA and Ramsar Site lies approx. 384m east of the scheme, Forth Islands SPA lies approx. 1.7km southeast of the scheme, the Outer Firth of Forth and St Andrews Bay Complex SPA lies approx. 2.8km east of the scheme and Loch Leven SPA and Ramsar Site lies approx. 16.5km north of the scheme.

One Site of Special Scientific Interest (SSSI) lies within 300m of the scheme extents:

- Ferry Hills SSSI (EU Site Code: 135444) located approx. 115m northeast of the northern extents of the scheme.

While not within 300m the Firth of Forth SPA is underpinned by the Firth of Forth SSSI.

In addition, Forth Islands SPA is underpinned by Long Craig Island SSSI.

Loch Leven SPA is also underpinned by Loch Leven SSSI.

There are no Local Nature Reserves (LNRs) or Local Nature Conservation Sites (LNCS) lie within 300m of the scheme extents.

A search of the NBN online mapping tool records ten plant species as listed within the Network Management Contract lie within 2km of the scheme extents (within the last 10-years):

Invasive Non-Native Species (INNS)

- Himalayan balsam (*Impatiens glandulifera*).
- Giant hogweed (*Heracleum mantegazzianum*).
- Japanese knotweed (*Reynoutria japonica*).
- Rhododendron (*Rhododendron ponticum*).

Injurious Weeds

- Broadleaved dock (*Rumex obtusifolius*).
- Creeping thistle (*Cirsium arvense*).
- Spear thistle (*Cirsium vulgare*).
- Curled dock (*Rumex crispus*).
- Common ragwort (*Jacobaea vulgaris*).

Invasive Native Perennial

- Rosebay willowherb (*Chamaenerion angustifolium*).

The closest record pertains to rosebay willowherb approx. 0.15km east of the scheme (recorded 2022).

A search of the Asset Management Performance System (AMPS) online mapping tool records no INNS, injurious weeds or invasive native perennials within the scheme extents.

Habitat immediately bordering the trunk road tends to be of low intrinsic value because the existing road verge is subject to cyclic maintenance e.g., grass cutting, weed control, tree, and shrub cut-back etc. The roadside verges are comprised of a homogenous managed areas of semi-improved grassland alongside sections of broadleaved woodland, tree lines and scrub. Roadside vegetation generally offers low ecological habitat due to its limited scale, fragmented nature and high potential for disturbance owing to cyclic landscape maintenance and the proximity of the trunk road (with its fast-flowing traffic). The presence of the trunk road also restricts continuity of, and connectivity between, habitats either side of the trunk road boundary.

Outwith the trunk boundary, agricultural land lies west of the scheme with urban developments west, north and east of the scheme and an industrial estate northeast of the scheme. However, there are a number of woodland habitats bordering the scheme to the southwest and northeast. The areas of agricultural land management restrict the occurrence of semi-natural and natural vegetation types. Most field boundaries are comprised of wooden fencing and vegetative features further delineating field boundaries e.g., woodland, shrub hedgerow, rough grassland, ruderal herb stands and scrub. Linear features at field boundaries have wildlife value, both as corridors in an intensively managed landscape, and as habitats for birds and small animals.

Geology and soils

The M90 within the scheme extents is not located within a Geological Conservation Review Site (GCRS) however, North Queensferry (A90) Road Cuttings GCRS designated for Carboniferous – Permian Igneous, lies approx. 10m east of the scheme (at its closest point).

There are no Local Geodiversity Sites (LGS) within 300m of the scheme extents.

Ferry Hills SSSI lies approx. 20m east of the southern extents of the scheme and approx. 115m northeast of the northern extents of the scheme and is designated for Carboniferous – Permian Igneous.

The National Soil Map of Scotland online mapping tool records the generalised soil types as:

- Made Up Ground.
- Brown Soils.
- Mineral Gleys.

The major soil groups within the scheme extents are categorised as the following:

- Restored Soils.
- Brown Soils.
- Gleys.

The British Geological Survey online mapping tool records that the superficial geology within the scheme extents is comprised of:

- Till, Devensian (Diamicton).
- Raised Tidal Flat Deposits, Late Devensian (Silt and Clay).

The bedrock geology within the scheme extents is recorded as:

- Midland Valley Sill-Complex, Quartz-Microgabbro.
- Anstruther Formation, Sedimentary Rock Cycles (Strathclyde Group Type).

There is no evidence of historical industrial processes or the storage of hazardous materials that could have given rise to significant land contamination.

Material assets and waste

The proposed works are required to replace the worn carriageway surface and reinstate road markings. Materials used will consist of:

- TS2010 10mm Agg Site Class 1 (Approx 10% recycled material).
- AC20 Binder (Approx 28-48% recycled material).
- AC32 Base (Approx 28-48% recycled material).
- Tack/Bond Coat.
- Paving Grade Bitumen.
- Weatherline+ Thermoplastic Extrusion Road Markings.
- Embedded Road Studs.

As the value of the scheme is greater than £350,000, a Site Waste Management Plan (SWMP) is required for this scheme.

The 1,232m scheme involves removal of surface course and localised areas of base and binder. In total, approx. 5500 tonnes of bituminous material (European Waste Catalogue Code: 17 03 02) will be removed from site, none of which is classified as hazardous material containing coal tar.

Noise and vibration

Receptors – refer to 'Population and Human Health'.

Works are not located within a Candidate Noise Management Area (CNMA) or Candidate Quiet Areas (CQA).

The night-time modelled noise level (LNGT) ranges between 70 and 75 decibels (dB) within the scheme extents (Scotland's Noise), with levels dropping to between 60 and 65 dB at the nearest noise sensitive receptor (NSR) (i.e., residential property).

The baseline noise and vibration in the scheme extents is primarily influenced by vehicles travelling along the M90 trunk road. Secondary sources most likely arise from day-to-day agricultural activities and from motor vehicles travelling along nearby roads.

Population and human health

Numerous residential properties lie within 300m of the scheme extents, the closest of which lies approx. 54m west of the scheme and is fully screened from the scheme by a sloped embankment and tree shelterbelt.

Core Path R635 crosses the M90 within the scheme extents via Dunfermline Wynd overbridge.

There are no other non-motorised user (NMU) or community facilities with connectivity to the scheme extents.

Street lighting is present throughout the scheme extents.

The M90, within the scheme extents, is a motorway with the national speed limit applying throughout. The Annual Average Daily Traffic (AADT) flow is high (71,023 motor vehicles) (ID: 74410, 2024) and is comprised of:

- 173 two wheeled motor vehicles.
- 52,695 cars and taxis.
- 287 buses and coaches.
- 12,793 light goods vehicles.
- 5,075 heavy goods vehicles.

Road drainage and the water environment

The Scottish Environment Protection Agency (SEPA) River Basin Management Plan online mapping tool records no classified surface waterbodies within 300m of the scheme extents.

Three unclassified surface waterbodies lie within 300m of the scheme extents:

- Balancing Pond1 lies approx. 167m southeast of the scheme.
- Balancing Pond2 lies approx. 170m southeast of the scheme.
- A drain lies approx. 217m west of the scheme.

A search of the SEPA's Flood Map online mapping tool records that the M90 within the scheme extents is at a low – medium risk of surface water flooding (i.e., each year this area has a 0.1 – 0.5% chance of flooding).

A search of Scotland's Environment (SE) online mapping tool determined that the trunk road lies on the 'Burntisland' groundwater, which has been classified as being in 'Good' condition.

The scheme extents do not lie within a Nitrate Vulnerable Zone (NVZ).

Climate

The Climate Change (Scotland) Act 2009 ('The Act'), and its subsequent amendment under the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, sets the framework for the Scottish Government to address climate change. The Act has an ambitious target to reach Net Zero greenhouse gas emissions by 2045, with any residual emissions balanced by removing carbon dioxide from the atmosphere. This is five years earlier than the rest of the UK due to the greater potential for carbon sequestration in Scotland.

The Act was amended to replace interim targets with carbon budgets. Carbon budgets are legally binding caps on greenhouse gas emissions in Scotland over five-year periods. In line with the Act, the Climate Change Committee (CCC) published advice on the level of Scotland's four carbon budgets, covering the period 2026 to 2045, recommending what the Scottish Government sets its carbon budgets at for annual average levels of emissions. These recommendations are based on an ambitious but credible route to Net Zero for Scotland by 2045.

Emissions reductions from surface transport are the largest contribution to meeting the first two carbon budgets. The pathway for surface transport emission reduction is primarily driven by the uptake of electric vehicles, in addition to measures to enable

a shift from car use to public transport and active travel, which all play a role in reducing emissions from fossil fuel cars. Ensuring efficiency of existing transport infrastructure and improving/providing new active travel facilities is therefore important to support these carbon reduction budgets.

Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, Transport Scotland are committed to reducing their emissions by 75% by 2030 and to the above noted legally binding target of net-zero by 2045. Transport Scotland is committed to reducing carbon across Scotland's transport network and this commitment is being enacted through the Mission Zero for Transport (Mission Zero for transport | Transport Scotland).

Policies and plans

This Record of Determination has been undertaken in accordance with all relevant regulations, guidance, policies and plans, notably including the Environment and Sustainability Discipline of the Design Manual for Roads and Bridges (Design Manual for Roads and Bridges (DMRB)) and Transport Scotland's Environmental Impact Assessment Guidance (Guidance - Environmental Impact Assessments for road projects).

Description of main environmental impacts and proposed mitigation

Air quality

During the construction phase, activities undertaken on site could potentially have some minor localised and short-term air quality impacts in proximity to the works. The construction phase will, for example, require a range of ancillary plant, vehicles, and non-road mobile machinery (NRMM) which will contribute to local dust and air pollutants. The main sources are likely to be dust generated by cold milling in preparation of carriageway resurfacing, as well as exhaust emissions from ancillary plant and vehicles. As a result, there is potential for impacts to local air quality.

However, considering the nature and duration of the scheme, along with implementation of mitigation detailed below, the proposed works' impacts on local air quality levels during the construction period are assessed to be temporary, negligible adverse in magnitude.

Upon completion of the works, no residual air quality impacts are anticipated.

- A water-assisted dust sweeper will sweep the carriageway after dust-generating activities, and waste will be contained and removed from site as soon as is practicable.
- Materials that have a potential to produce dust will be removed from site as soon as possible, and vehicles that remove cold-milled material from site will have sheeted covers.
- Ancillary plant, vehicles and NRMM will have been regularly maintained, paying attention to the integrity of exhaust systems.
- Ancillary plant, vehicles and NRMM will be switched off when stationary to prevent exhaust emissions (e.g., there will be no idling vehicles).
- Cutting, grinding, and sawing equipment (if required) will be fitted or used in conjunction with suitable dust suppression techniques e.g., local exhaust ventilation system that fits directly onto tools.
- Regular monitoring (e.g., by engineer or Clerk of Works) will take place when activities that have the potential to impact local air quality are occurring. In the unlikely event that unacceptable dust or exhaust emissions are emanating from the site, the operation will, where practicable, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered include: (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) changing the method of working, etc.

Cultural heritage

The scheme extents are located almost exclusively within the Battle of Inverkeithing II Inventory Battlefield. As such, unmitigated there is potential for disturbance to the Battlefield's cultural heritage features. However, the works will be restricted to the M90 carriageway boundary and depth and with mitigation measures detailed below being implemented, the risk of impacting these features is considered to be negligible.

Furthermore, construction of the M90 road corridor is likely to have removed any archaeological remains that may have been present within the trunk road boundary. The potential for the presence of unknown archaeological remains in the study area has therefore been assessed to be low.

Considering the nature, duration, size, and scale of the scheme, and with the implementation of mitigation detailed below, the proposed works impact on cultural heritage are assessed to be low in magnitude.

Upon completion of the works, no residual impacts on cultural heritage are anticipated.

Cultural heritage mitigation measures:

- Site operatives will be made aware of the location and sensitivity of the Battle of Inverkeithing II Inventory Battlefield.
- People, ancillary plant, vehicles, NRMM and materials will be restricted to areas of made/engineered ground (as much as is reasonably practicable) and will avoid entering the verge. Where access out with made/engineered ground is required for the safe and effective completion of the scheme, the area will be reduced as much as is reasonably practicable and ideally will be accessed on foot.
- If a change to the construction programme onsite is required that necessitates earthworks or vegetation clearance, BEAR Scotland's Environmental Team will be contacted.

Landscape and visual effects

During construction there will be a short-term impact on the landscape character and visual amenity of the local area due to the presence of construction plant, vehicles, and TM. However, all construction is restricted to areas of made / engineered ground on the M90 carriageway, and works are programmed to be undertaken at night (15 nights, excluding Saturdays and Sundays). As such, the visual impact of the works will be somewhat reduced.

Considering the nature, duration, size, and scale of the scheme, and with implementation of mitigation detailed below, impacts on landscape and visual effects are assessed as temporary, negligible adverse in magnitude.

Upon completion of the works, no residual impacts on landscape and visual effects are anticipated e.g., when complete the visual appearance will remain largely unaffected, with a renewed road surface being the only discernible change.

Landscape and visual effects mitigation measures:

- The site will be monitored regularly for signs of litter and other potential contaminants, and litter will be removed before and after works take place.
- The site will be left clean and tidy following construction.
- Where possible, construction vehicles will not be left in places where soil or vegetation can be damaged. If damage to road verge occurs this will be lightly cultivated or graded (upon completion of the works) to allow natural recolonization by local species and promote integration with existing landscape character.

Biodiversity

Given that the scheme is located within the buffer zone of a small number of qualifying features of designated sites, a Habitats Regulations Appraisal (HRA) has been completed. The HRA ruled out the potential for Likely Significant Effects (LSE) on the identified qualifying features of the Firth of Forth SPA and Ramsar Site, Forth Islands SPA, Outer Firth of Forth and St Andrews Bay Complex SPA and Loch Leven SPA and Ramsar Site due to the restriction of the works to the existing M90 carriageway, along with the distance separating the works from the designated sites.

Ferry Hills SSSI lies approx. 20m east at its nearest point and is designated for grassland however, the works will be restricted to the M90 trunk road carriageway and as such, there will be no potential for impacts to these features.

A temporary short-term increase in noise levels may cause disturbance to local wildlife if present in the vicinity of the works. The works will, for example, require a range of ancillary plant, vehicles and NRMM which will emit noise and create potential disturbance. The works will also require delivery of materials and the presence of personnel to facilitate the improvements to the road surface. However, the number of construction vehicles and construction operatives required onsite is low given the scale and scope of works. In addition, any species in the area are likely to be accustomed to noise and visual disturbance pertaining to vehicle movements on the M8. The potential for significant species disturbance within the area of construction is therefore somewhat diminished.

Considering the nature, duration, size, and scale of the scheme, and with implementation of mitigation detailed above, the proposed works impacts on biodiversity throughout the construction period are therefore assessed to be temporary, minor adverse in magnitude.

Upon completion of the works, no residual impacts are anticipated in relation to biodiversity.

Biodiversity mitigation measures:

- Where possible, artificial lighting used during night works will be sufficiently screened and aligned so as to ensure that there is no direct illumination of neighbouring habitat (e.g., locations adjacent to tree shelterbelt, woodland etc.,).
- The works are not permitted to disturb or destroy any active birds nests. If an active birds nest is identified onsite that will be impacted by works, BEAR Scotland's Environmental Team will be contacted.
- Given the records of protected species in proximity to the scheme extents, Toolbox Talk TTN-139 'Protected Species', will be briefed to all staff prior to the commencement of works.
- Site personnel will remain vigilant for protected species and will not approach or touch any animals seen on site. Any sightings of protected species will be reported to BEARs Environmental Team. Should a protected species be encountered or move within 50m of the active works (including compounds), works will be temporarily halted until the animal(s) move at least 50m away from the construction site, or until BEAR's Environmental Team can provide advice.
- The Contractor will employ 'soft start' techniques for all noisy activity to avoid sudden and unexpected disturbance during works. Each time the activity is started up after a period of inactivity, the noise levels will be gradually increased over a period of 30 minutes to permit animals (including birds) to move away from the disturbance.
- All equipment stored onsite, if necessary, will be checked at the start of each shift to ensure no animals are present. Any storage containers/plant within the compound will also be secured overnight to prevent exploration by mammal species. Any areas where an animal could become trapped (e.g., storage containers) will also be covered at the end of each working day.
- People, ancillary plant, vehicles, NRMM and materials will be restricted to areas of made/engineered ground (as much as is reasonably practicable). If during works unforeseen access to the surrounding environment is required, works will cease in this area and BEAR Scotland's Environmental Team will be contacted to allow consideration of potential environmental effects.
- BEAR Scotland's Environmental Team will be contacted to allow consideration of potential environmental effects if:
    - unforeseen site clearance is required,
    - unplanned works must be undertaken out with the carriageway boundary,

  - there is any deviation from the agreed plan, programme and/or method of working,
  - nesting birds are found onsite.

- BEAR Scotland's Control Room will be contacted if there is a pollution incident.

Geology and soils

North Queensferry (A90) Road Cuttings GCRS lies approx. 10m east and the Ferry Hills SSSI, designated for geological features is located 20m east, of the scheme and as such, there is some limited potential for impacts to the geology of the site. However, given the small-scale nature of the works, the scope of the works (resurfacing), the restriction of the works to the M90 northbound carriageway and provided the mitigation below is adhered to, it is considered unlikely that the works will pose a significant risk or impact the GCRS.

Geology and Soils mitigation measures:

- Site operatives will be made aware of the proximity and sensitivity of the North Queensferry (A90) Road Cuttings GCRS and Ferry Hills SSSI.
- Site operatives will be restricted to areas of made/engineered ground (as much as is reasonably practicable) and will avoid entering the verge in proximity to the geological designated sites.

Material assets and waste

Minimising impacts arising from construction materials are focussed upon making the most efficient use of materials onsite to reduce the need for imported primary materials and minimise the creation and disposal of waste through (i) reduction, (ii) re-use, and (iii) recycling. Potential impacts have been assessed for both the construction and operational phases of this scheme. It is anticipated that most material impacts are likely to arise during construction, though long-term residual impacts could occur post construction during the operational phase e.g., during the disposal of materials arising from routine maintenance operations.

However, the detailed design will reduce the requirements for primary materials e.g., the carriageway surfacing, and subbase will be carefully considered to minimise the requirements for importing primary material. Materials will also be derived from recycled, secondary, or re-used origin as far as practicable within the design specifications to reduce natural resource depletion. Specifying TS2010 surface course also allows a wider array of aggregate sources to be considered when compared to typical stone mastic asphalt (SMA). As a result, the use of TS2010

should reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources. The design life for the TS2010 surfacing is also estimated to be 20 years. The enhanced durability of TS2010 therefore reduces reoccurring routine maintenance and associated levels of traffic disruption to this section of road over the period.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, the proposed works impacts on material assets and waste throughout the construction period are therefore assessed to be temporary, negligible adverse in magnitude. Upon completion of the works, no residual impacts are anticipated on materials or waste.

Material assets and waste mitigation measures:

- A SWMP will be completed by the Designer and Contractor as required. The SWMP will provide details of the following:
    - The quantity and type of waste that will be produced.
    - How waste will be minimised, reused, recycled, recovered, or otherwise diverted from landfill.
    - How materials that cannot be refused, recycled, or recovered will be removed from site and consigned, transported and disposed of in full accordance with all relevant UK Legislation.
- Good materials management methods (e.g., ‘just-in-time’ delivery) will be implemented wherever possible.
- The Contractor will comply with all ‘Duty of Care’ requirements, ensuring that any surplus materials or waste are stored, transported, treated, used, and disposed of safely without endangering human health or harming the environment. Waste transfer notes and/or waste exemption certificates (if required) will also be completed and retained.
- The Contractor is responsible for the reuse / disposal of non-hazardous road planings, and this has been registered in accordance with a Paragraph 13(a) waste exemption issued by SEPA as described in Schedule 3 of the Waste Management Licensing Regulations 2011 (exemption number: WML/XS/2010470 the rules of which will be complied with.
- Designated areas will be identified within which all materials and personnel, including construction compounds, where necessary, will be contained to limit environmental disturbance during construction works. This will include a designated area (if required) for segregation and reuse of waste materials.
- The selection of areas for materials stockpiling will avoid sensitive locations such as road drainage. Stockpiled materials with leachate potential, for example, will be stored away from road drainage to prevent cross-contamination with other materials, wastes, or groundwater.

- Materials will be stored with the appropriate security to prevent loss, theft, or vandalism.
- All temporary road signs and traffic cones will be removed from site on completion of works.
- Wastewater from welfare facilities (if required) will be subject to effluent treatment followed by tanker removal.
- If hazardous substances are used onsite, each substance will be subject to assessment under the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Hazardous substances will also be clearly labelled, and disposed of, in line with relevant waste regulations. Special waste will also not be mixed with general waste and/or other recyclables.

Noise and vibration

Activities undertaken on site could potentially have some localised and short-term noise impacts in proximity to the works. The road works will, for example, require a range of ancillary plant, vehicles and NRMM for cold milling in preparation for carriageway resurfacing. Noise will also be generated by using breakers (jackhammers), chipping hammers, use of rollers, etc. As a result, there is potential for noise and vibration effects to residential properties within the local area, the closest of which lies approx. 54m west of the scheme extents. However, all properties are separated from the works by roadside tree shelterbelts and areas of woodlands, which are likely to offer some visual screening and perceived noise reduction.

However, the works are not located within a CNMA or CQA, and while they will be completed over 15 nights (excluding Saturdays and Sundays), the aim will be to complete the noisiest works by 23:00. In addition, the proximity of road space suggests that residents have a degree of tolerance to noise and disturbance.

The road surface is in a poor condition, with a series of defects. Replacing the life-expired surface course with TS2010 road surfacing affords the benefits of a reduction in mid-to-high frequency traffic noise and a reduction in the ground vibrations. As a result, upon completion of the work, noise associated with the movement of vehicles on the trunk road should decrease post construction.

Considering the likely sources of noise and vibration, with the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, it is unlikely that noise and vibration associated with the works will lead to significant impacts, disruption and/or complaints. The proposed scheme is therefore anticipated to result in temporary, minor adverse noise impacts.

- The local authority environmental health department will be notified of nighttime working by BEAR Scotland's design engineer.
- Where possible, the noisiest work operations (e.g., cold milling, using breakers (jackhammers), chipping hammers, use of rollers, etc.) will be completed before 23:00.
- Wherever possible, careful consideration will be given to the siting and orientation of particularly noisy items of NRMM so that it is located away from surrounding properties. Activities which have the potential to produce excessive noise will be undertaken away from surrounding properties, if possible.
- If unacceptable noise is emanating from the site the operation will, where possible, be modified and re-checked to verify that the corrective action has been effective. Actions to be considered include (a) minimizing cutting and grinding on-site, (b) reducing the operating hours, (c) repositioning equipment, (d) changing the method of working etc. Corrective actions will be actioned through the non-conformance reporting procedure, which ensures a root-cause analysis is carried out on each incident. The non-conformance procedure also ensures that appropriate corrective and preventative action measures are agreed and implemented in a timely fashion with all parties, and are recorded and actioned through to closeout, and fully auditable and traceable.
- Ancillary plant, vehicles and NRMM with directional noise characteristics will (where practical) be shut down in intervening periods between site operations.
- The use of paving breakers (jackhammers), chipping hammers, etc. will be avoided (except where there is an overriding justification), and if used will be fitted with mufflers or silencers of the type recommended by the manufacturer.
- Drop heights from vehicles and NRMM will be kept to a minimum to minimise noise when unloading.
- All ancillary plant, vehicles and NRMM used onsite will have been regularly maintained, paying attention to the integrity of silencers and acoustic enclosures.
- All compressors will be 'sound-reduced' models fitted with properly lined and sealed acoustic covers which will be kept closed when in use.
- HGV, site vehicles and NRMM will be switched to the minimum setting required by HSE and, where possible, will utilise 'broadband non-tonal' or 'directional sound reversing' alarms. Speed limits will also be reduced through the works.

Population and human health

During construction, activities undertaken on site have the potential to have temporary adverse impacts on local residents and road users. While TM will be in

place for 15 nights (excluding Saturdays and Sundays), it will be restricted to nighttime hours when traffic flows will be at a minimum, as such no congestion issues are expected during the proposed construction hours.

While a core path is located within the scheme extents, it spans the M90 via an overbridge and as such will not be impacted by the works.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation described above, impacts on population and human health are assessed as temporary, minor adverse in magnitude.

Upon completion of the works, there will be a positive impact in relation to population and human health due to the improvement of usability and safety provided by the new carriageway surface.

Population and human health mitigation measures:

- Construction lighting will take into account the need to avoid illuminating surrounding properties to avoid a nuisance at night, and non-essential lighting will be switched off at night.
- Where appropriate, a communication strategy (e.g., social media, consultation with local authority and other stakeholders, letter drop (for night-time works), etc.) will be initiated to keep local residents and/or businesses informed of the proposed working schedule, particularly the times and durations of noisy construction activities. The communication strategy will also provide a 24-hour contact number for the BEAR Scotland Control Room.
- Advanced signage will be strategically placed on the trunk road to notify stakeholders of the road closure and diversion at least seven days in advance.
- A Traffic Management Plan (TMP), which includes measures to avoid or reduce disruption to road traffic, will be produced in accordance with the Traffic Signs Manual (Department of Transport 2009). The TMP will ensure that there is no severance of community assets, access routes or residential development.
- Journey planning information will be available for drivers online at the trafficscotland.org website. Journey planning information will also be available for drivers online through BEARs social media platforms.

Road drainage and the water environment

During resurfacing works, there is potential for temporary adverse impacts on the water environment. Potential changes in water quality e.g., from pollution events (either by accidental spillage of sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain) during works have the

potential to have a direct or indirect effect on surrounding waterbodies, however none are located within 300m.

All works will be restricted to the M90 carriageway and there will be no requirement to enter any watercourse as such there is limited risk for direct impacts. Furthermore, the potential for direct or indirect pollution incident to a waterbody is considered unlikely e.g., experience gained from BEAR maintenance schemes elsewhere on the network has shown that where standard best working practice is adopted (e.g., adherence to SEPA GPPs, utilisation of drain covers or similar, etc.), water quality is protected.

Considering the nature, duration, size, and scale of the scheme, and with implementation of the mitigation detailed below, the proposed works impacts on the road drainage and water environment are assessed as temporary, negligible adverse in magnitude.

Upon completion of the resurfacing works, no residual impacts are anticipated in relation to the road drainage and water environment.

Road drainage and the water environment mitigation measures:

- If any works are identified that would require entering a waterbody, BEAR Scotland's Environmental Team will be contacted (before works commence) to allow consideration of potential environmental effects.
- The abstraction or transfers of water from, discharges to, or the washing of tools in surface waterbodies identified is not permitted.
- Appropriate measures will be implemented during resurfacing operations to limit the potential for wastes (i.e. road planings) and materials (i.e. new asphalt) to enter any gullies present on site. On completion of resurfacing operations, any gullies present on site will be visually checked to ensure they have not become blocked as a result of the scheme.
- All site personnel will be made aware of site spillage response procedures and in the event of a spill, all works associated with the spill will stop, and the incident reported to the Site Supervisor. Small spills that did not leave the site boundary and are cleaned up without material environmental harm or residual environmental impact would most likely not be required to be notified to SEPA or other authorities. However, all such incidents will be recorded and reported to BEAR Scotland's Environmental Team. In the event of a 'serious incident', SEPA will be notified without delay. Such notification will include: (i) the time and duration of the incident, (ii) a description of the cause of the incident, (iii) any effect on the environment as a result of the incident, and (iv) any measures taken to minimise or mitigate the effect and prevent a recurrence.
- All waste, vehicles, ancillary plant, NRMM and fuels will be stored in the compound (s) or laydown area and will be secured and located, if space is

available, at least 10m from drainage entry points, in order to comply with GPP 5 'works and maintenance in or near water'.

- Refuelling will only be undertaken at designated refuelling areas (e.g., on hardstanding, with spill kits available, and >10m from drainage entry points, where practicable). Spill kits will also be available within all site vehicles and spill kits will be replenished onsite when required. Only designated trained and competent operatives will be authorised to refuel plant. Generators, and other ancillary plant and NRMM, where there is a risk of leakage of oil or fuel, will have internal bunding or must have a secondary containment system placed beneath them that meets 110% capacity requirements. Containment systems will also be emptied regularly. All waste, vehicles, ancillary plant, NRMM and fuels will also be stored in a manner that ensures they are protected from damage by collision or extremes of weather.
- Regular visual pollution inspections of the designated laydown area and work site (particularly near road drainage entry points) will be conducted (e.g., site walkover by engineer or Site Supervisor), especially during periods of heavy rain.
- All vehicles and NRMM onsite will have been regularly maintained, paying attention to the integrity of oil tanks, coolant systems, gaskets etc. A checklist will be present to make sure that the checks have been carried out.

Climate

BEAR Scotland, working on behalf of Transport Scotland, undertake carbon monitoring of major projects and operational activities. Emissions from activities are recorded using Transport Scotland's Carbon Management System. BEAR Scotland also undertakes resource efficiency activities to manage and reduce emissions contributing to climate change. The works will also extend the maintenance intervals required for future works. In doing so, the service life of the trunk road is also extended.

During works there is potential for impacts as a result of the emission of greenhouse gases through the use of equipment, vehicles, and NRMM, material use and production, and transportation of material/waste. However, considering the nature, duration, size and scale of the scheme, and the mitigation detailed below, the risk of significant impacts to climate are considered to be negligible and adverse in magnitude.

Upon completion of the proposed scheme no residual impacts are anticipated on the climate.

Climate mitigation measures:

- Use of warm mix asphalt as standard.
- Local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gases emitted as part of the works.
- BEAR Scotland will adhere to its Carbon Management Policy.
- Where possible, waste will be removed to local waste management facilities.

Vulnerability of the project to risks

There will be no change to the likelihood of flooding on the M90 within the scheme extents upon completion of the works.

Works are restricted to areas of made ground on the M90 carriageway surface, with access to the scheme gained via the M90 mainline. TM will employ 15 nighttime full road closures (excluding Saturdays and Sundays) with a signed diversion. As such, the proposed works' impacts on road traffic accidents are assessed to be of negligible magnitude.

A Site Environmental Management Plan (SEMP) will be produced by BEAR Scotland which sets out a framework to reduce the risk of adverse impacts from construction activities on sensitive environmental receptors. The Contractor will comply with all conditions of the SEMP during works and may be subject to audit throughout the contract.

Considering the above, the vulnerability of the project to of major accidents and disasters is considered to be low.

Assessment cumulative effects

The proposed works are not anticipated to result in significant environmental effects. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

A search of the Scottish Road Works Commissioner's website (map search) has identified that there are three instances of planned road works which could occur within 300m of the M90 within the scheme extents:

- Total closure for loop recuts carried out by Transport Scotland, expected to start between 12/01/2026 – 11/04/2026, for an approx. duration of two working days, approx. 37m east of the scheme extents (Reference: 3893603).
- Excavation on Scottish Water trunk main to install valves and hydrant carried out by Scottish Water, expected to start between 20/01/2026 – 19/04/2026, for an approx. duration of 30 working days, approx. 128m east of the scheme extents (Reference: 3920252).
- Lay new cable carried out by Fife Council, expected to start between 17/11/2025 – 16/02/2025, for an approx. duration of five working days, approx. 257m east of the scheme (Reference: 3907487).

However, BEAR Scotland will ensure that works on the network and TM are appropriately considered to minimise disruptions to road users are far as possible.

In addition, a search using Fife Council 'Simple Planning Search' identified nine planning applications within 300m of the scheme extents in the last two years (Table 1).

Table 1: Planning Applications within Last Two Years

Reference	Description	Decision	Distance from Works
24/00118/PAN	Proposal of Application Notice for proposed residential development (Phase 1) including public footpaths and open space	Proposal of Application Notice Agreed	Approx. 75m west
23/03136/FULL	Single storey extension to front of dwellinghouse	Application Permitted with Conditions	Approx. 91m east
24/03090/PPP	Planning permission in principle for residential development up to 360 units, vehicular access, SuDS, landscaping, open space and associated development and infrastructure works	Registered	Approx. 108m west
25/02283/FULL	Erection of a dwellinghouse (amendment to 10/02508/FULL	Application Permitted with Conditions	Approx. 166m east

Reference	Description	Decision	Distance from Works
	for substitution of house type)		
23/02497/FULL	Two storey extension to side of dwellinghouse and formation of raised platform	Application Permitted with Conditions	Approx. 276m east
23/03496/FULL	Erection of a single storey porch to the rear elevation, a detached garage to the side, and external alterations	Application Permitted with Conditions	Approx. 283m east
23/03497/LBC	Listed Building consent for erection of a single storey porch to the rear elevation and external and internal alterations	Application Permitted with Conditions	283m east
24/02261/FULL	Single storey / first floor extensions to front, sides and rear of dwellinghouse	Application Permitted with Conditions	Approx. 290m west

While it is not possible to gain an understanding on the timing or duration of the above planning applications, it is considered as the residential development application relates to a Proposal of Application Notice, the planned works will not be undertaken at the same time as the planned BEAR Scotland resurfacing works. The

remaining eight planning applications relate to small scale domestic projects and planning permission in principle, which are not expected to result in in-combination impacts. Furthermore, as the resurfacing works will be restricted to the existing M90 carriageway boundary and depth there will be no potential for in-combination impacts.

Assessments of the environmental effects

The M90 Junction 1B to 1C Northbound resurfacing scheme lies within the buffer zone of several of the qualifying features of the Firth of Forth SPA and Ramsar Site and Forth Islands SPA, the Outer Firth of Forth and St Andrews Bay Complex SPA and Loch Leven SPA and Ramsar Site and as such, a HRA has been undertaken. The HRA ruled out the potential for LSE on the designated site.

As detailed in the Description of Main Environmental Impacts and Proposed Mitigation section, there are no significant effects anticipated on any environmental receptors as a result of the proposed works.

Statement of case in support of a Determination that a statutory EIA is not required

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) exceed 1 hectare in area.

The project has been subject to screening using the Annex III criteria to determine whether a formal Environmental Impact Assessment is required under the Roads (Scotland) Act 1984 (as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017). Screening using Annex III criteria, reference to consultations undertaken and review of available information has not identified the need for a statutory EIA.

The project will not have significant effects on the environment by virtue of factors such as:

Characteristics of the scheme:

- Works are restricted to like-for-like replacement of worn/damaged road surface, with all works restricted to made ground on the M90 northbound carriageway surface.
- Works are not expected to result in significant disturbance to protected species that may be present in the wider area.
- The risk of major accidents or disasters is considered to be low.
- By removing the carriageway defects, this will provide this section of the M90 northbound carriageway with another life cycle, and significantly improve the ride quality, which will result in safer conditions for road users.

Location of the scheme:

- The scheme lies within the buffer zone of the qualifying species of the Firth of Forth SPA and Ramsar Site and Forth Islands SPA, the Outer Firth of Forth and St Andrews Bay Complex SPA and Loch Leven SPA and Ramsar Site however, a HRA has been undertaken, which confirmed that the works will not result in LSE on the designated sites.
- The scheme lies within the Battle of Inverkeithing II Inventory Battlefield and will not have any impacts on the site.
- The scheme is not located within any areas designated for landscape areas.
- Land use will not change as a result of the works.
- The works do not require any private land acquisition.
- The scheme is not located within a densely populated area.

Characteristics of potential impacts of the scheme:

- The waste hierarchy will be followed to reduce waste to landfill.
- Works are programmed to take 15 nights to complete (excluding Saturdays and Sundays), with the aim being to complete the noisiest works by 23:00.
- With good practice pollution prevention measures implemented onsite, there is a negligible risk of a pollution event e.g., compliance with the SEMP.

Annex A

"Sensitive area" means any of the following:

- land notified under sections 3(1) or 5(1) (sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004
- land in respect of which an order has been made under section 23 (nature conservation orders) of the Nature Conservation (Scotland) Act 2004
- a European site within the meaning of regulation 10 of the Conservation (Natural Habitats, &c.) Regulations 1994
- a property appearing in the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage
- a scheduled monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979
- a National Scenic Area as designated by a direction made by the Scottish Ministers under section 263A of the Town and Country Planning (Scotland) Act 1997
- an area designated as a National Park by a designation order made by the Scottish Ministers under section 6(1) of the National Parks (Scotland) Act 2000.

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