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Environmental Impact Assessment Record of Determination

A76 Enterkinfoot

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Project Details

Description

These works are required to maintain the safety and integrity of a stretch of the A76 carriageway north of Enterkinfoot which is currently exhibiting signs of defects in the form of extensive fretting and multiple longitudinal and transverse cracks throughout the scheme. The main driver for the scheme comes from this fretting, in addition to areas of alligator cracking and several potholes throughout.

The proposed works involve the milling of the defective surface course and resurfacing utilising TS2010, over an approximate 2.5km stretch of the A76 carriageway.

The proposed construction activities are likely to involve the following:

- Milling of existing bituminous material by road planer;
- Hand-held jackhammer and compressor for breaking up surfaces not accessible by planer;
- Loader/excavator used to collect and move excess material;
- Base/binder material laid and compressed (where required);
- New bituminous material laid by a paver;
- Material compacted using a heavy roller;
- Mechanical sweeper to collect loose material;
- HGV for removal and replacement of material; and
- Road markings replaced using an extrusion tool.

The total area of the works is approximately 13,600m² (1.36ha) across both northbound (NB) and southbound (SB) lanes.

The works are currently programmed to operate in October 2022, over one full weekend over both daytime and night-time working. Exact timings and duration yet to be confirmed.

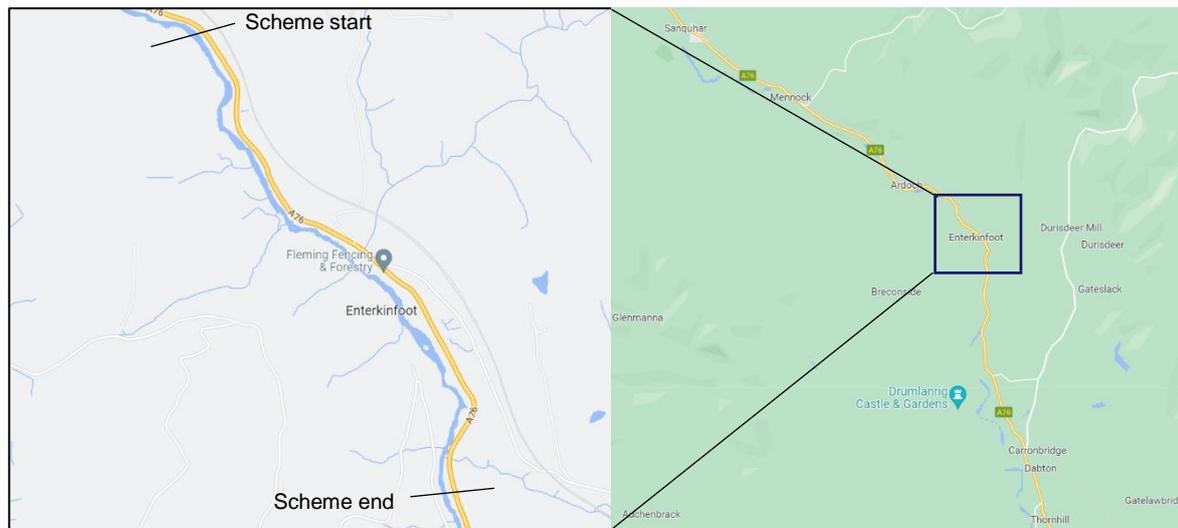
Traffic management (TM) is expected to consist of a total closure of the A76 carriageway within the scheme extents (including both NB and SB carriageways) which will be in place 24hrs continuous until completion of works. Closures will be facilitated by appropriate diversion routes, which are yet to be confirmed.

Location

The scheme is located in a rural section of the A76 single carriageway near the village of Enterkinfoot which lies 6 miles north of Thornhill, Dumfries and Galloway. The works have the following National Grid References:

- Scheme start: NS 86108 03101
- Scheme end: NS 85055 05068

Figure 1: Scheme Location



Description of local environment

Air quality

The scheme is located along a rural area north of Thornhill, surrounded by woodland and agricultural fields. A number of scattered residential properties are located within proximity, some located less than 5m of the carriageway.

Dumfries and Galloway Council has not declared any [Air Quality Management Areas \(AQMAs\)](#).

[Average Annual Daily Flow \(AADF\)](#) in 2020 for the A76 carriageway north of the site is 2,035, with 13.4% heavy goods vehicles (HGVs).

Cultural heritage

A desktop study using [PastMap](#) has identified the following features of cultural heritage within 300m of the works:

- Enterkin Viaduct, a Category B Listed Building, located approx. 130m to the east of the A76 carriageway.
- Drumlanrig Castle Garden & Designed Landscape (GDL) (Reference GDL00143) which encompasses a section of the A76 carriageway at the southern scheme extent. This GDL has been designated for the 17th century garden which encompasses the Category A Listed Drumlanrig Castle.

Works will be like-for-like in nature and will remain restricted to the existing carriageway boundary, and as such will not have any impact to these nearby features. It has been determined that the proposed project does not carry the potential to cause direct or indirect impact to cultural heritage.

As such, impact has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Landscape and visual effects

A desktop study using [PastMap](#) and [NatureScot Sitelink](#) interactive map has highlighted Drumlanrig Castle GDL which encompasses the southern section of the A76 carriageway within the scheme extents. The GDL features formal landscaping, gardens, parklands and woods established around 17th-20th century, and contains extensive castles and country houses. Other elements include formal avenues,

plantations, water features and walled gardens. No other areas of designated landscape quality have been identified in proximity.

Historic Environment Scotland's [HLAMap](#) has highlighted the surrounding landscape to be rural, and comprises of rectilinear field boundaries, associated farm steadings and other buildings which are typical of agricultural improvements since the 1700s.

Works will be like for like in nature, restricted to the existing carriageway boundary, and will not have any permanent visual change. Views of and from the road will be impacted by the presence of traffic management, plant and vehicles during construction. This is predicted to be a slight temporary impact locally, with no permanent change to views following the completion of works.

As such, impact to local landscape has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Biodiversity

The scheme is located in a rural area near the village of Enterkinfoot. The surrounding area is made up of agricultural land and woodland.

A desktop study using [NatureScot Sitelink](#) identified Coshogle Wood which is designated as a Site of Special Scientific Interest (SSSI). This site is located approximately 130m to the east of the scheme, and is designated for presence of woodland.

Amey's Invasive Non-native Species (INNS) Database has not identified any invasive plant growths within the scheme extent.

Amey's Animal Roadkill Database (2013-2022) has not highlighted any record of animal roadkill within the scheme extents.

The [NBN Atlas](#) (2012-2022) has no record of any protected mammal species sightings within 2km of to the works location.

Geology and soils

The [National Soil Map](#) of Scotland has recorded the local soil type to consist of brown soils.

A desktop study using the [British Geological Survey Map](#) has identified major local geology type as the following:

- Bedrock Geology: Shinnel Formation - Wacke. Sedimentary bedrock formed between 458.4 and 443.8 million years ago during the Ordovician period.
- Superficial Deposits: Glaciofluvial Deposits - Sand and gravel. Sedimentary superficial deposit formed between 2.588 million years ago and the present during the Quaternary period.

The works will be kept to the existing carriageway will remain within the existing man-made footprint. As such, it has been determined that the proposed project does not carry the potential to cause direct or indirect impact to geology or soils.

As such, impact has been assessed as being 'no change' and has been scoped out of requiring further assessment.

Material assets and waste

Key materials required for activities

The following materials will be required for the works:

- TS2010 surface course
- AC32 base
- AC20 binder
- Bitumen
- Road paint
- Road studs

A proportion of reclaimed asphalt pavement (RAP) is used in asphalt production. Typical RAP values for base and binder are 10% -15% with up to 10% in surface course.

TS2010 Surface Course 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 will reduce the usage of imported aggregates, and increase the use of a wider range of sustainable aggregate sources.

Key waste expected from activities

Road planings will be produced as waste from the works. On-site investigations have identified tar-containing material within the layers of surface/structural material to be replaced.

Any tar-containing material is classed as special waste and as such planings will undergo removal off site for treatment/disposal at a licenced waste facility. A SEPA

consignment note will be obtained for this, and SEPA will be informed at least three days prior to the movement of special waste.

As part of this scheme approx. 530 tonnes of hazardous plantings will be required to be removed off-site to an appropriate facility for disposal.

Noise and vibration

The works are located at the village of Enterkinfoot north of Thornhill, Dumfries & Galloway, surrounded by agricultural fields and a number of scattered residential properties. There are a number of properties within 5m of the carriageway.

There are no community receptors located within 300m of the scheme.

Average Annual Daily Flow (AADF) in 2020 for the A76 carriageway north of the site is 2,035 vehicles, with 13.4% heavy goods vehicles (HGVs).

The A76 carriageway is the main connecting route between Kilmarnock and Dumfries. Baseline noise level is likely to be primarily influenced by vehicle traffic from the carriageway, with secondary sources including activity from nearby urban and agricultural activities.

The works do not fall within a [Candidate Noise Management Areas \(CNMA\)](#) as defined by the Transportation Noise Action Plan, Road Maps.

Population and human health

The scheme is located in a rural location, near the village of Enterkinfoot and surrounded by agricultural fields and a number of scattered residential properties. There are a number of properties within 5m of the carriageway. There are no community receptors located within 300m of the scheme.

Two bus stops are located on the A76 carriageway throughout the scheme extent, including one on the northbound carriageway, and one on the southbound carriageway.

Various accesses are located within the scheme extent, which lead to residential properties, farmland, and the local road network.

Road drainage and the water environment

A desktop study using the Scottish Environment Protection Agency (SEPA) [River Basin Management Plan Interactive Map](#) has identified the River Nith (ID: 10610), in the River Nith catchment of the Solway Tweed river basin district, approximately 20m

to the west of the A76 at its closest point. This has been given an overall status of 'Moderate Ecological Potential' by SEPA.

[SEPA Flood Map](#) has highlighted a high risk of surface water flooding on sections of the A76 carriageway within the scheme extents.

Road drainage is provided by a combination of side and top entry gullies and filter channel drainage throughout the scheme, likely out falling into the adjacent River Nith.

Climate

Carbon Goals

The Climate Change (Scotland) Act sets out the target and vision set by the Scottish Government for tackling and responding to climate change. The Act includes a target of reducing CO2 emissions by 80% before 2050 (from the baseline year 1990).

The Scottish Government has since published its indicative Nationally Determined Contribution (NDC) to set out how it will instead reach net-zero by 2045, working to reduce emissions of all major greenhouse gases (GHG) by at least 75% by 2030. By 2040, the Scottish Government is committed to reduce emissions by 90%, with the aim of reaching net-zero by 2045 at the latest.

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

Amey's Company Wide Carbon Goal is to achieve Scope 1 and 2 net-zero carbon emissions, with a minimum of 80% absolute reduction on our emissions by 2035. Amey is aiming to be fully net-zero, including Scope 3 emissions, by 2040.

Amey are working towards a contractual commitment to have carbon neutral depots on the SW NMC network by 2028. Amey have set carbon goals for the SW NMC contract as a whole to be net-zero carbon by 2032.

Monitoring, Management and Opportunities

To support our journey towards carbon neutral and zero waste we include potential opportunities for enhancement utilising circular economy principals within assessment of material assets.

Amey (working on behalf of Transport Scotland) undertake carbon monitoring. Emissions from our activities are recorded using Transport Scotland's Carbon Management System.

Further information identifying how Amey will obtain the above Carbon Goals can be viewed within the Carbon Management and Sustainability Plan Roadmap to net-zero: STRNMC – South West.

Description of main environmental impacts and proposed mitigation

Air quality

Impacts

- The use of vehicles, plant and generators emitting carbon emissions may temporarily affect air quality and will require the use of finite resources.
- On site construction activities carry the potential to produce airborne particulate matter and generate emissions that may have a slight adverse impact on local air quality levels.

Mitigation

- All works shall operate in accordance with current best practice as outlined in the Guidance on the assessment of dust from demolition and construction (2014) published by the IAQM, which includes the following mitigation relevant to this scheme:
 - When not in use plant and vehicles will be switched off; there will be no idling vehicles.
 - All plant and fuel-requiring equipment utilised during construction shall be well maintained in order to minimise emissions, as per manufacturing and legal requirements.
 - Green driving techniques will be adopted, and effective route preparation and planning shall be undertaken prior to works.
 - Planing operations will be wetted to reduce dust arising.
 - Drop heights to haulage vehicles and onto conveyors will be minimised.
 - Lorries will be sheeted when carrying dry materials.
 - Surfaces will be swept where loose material remains following planing.

Providing all works operate in accordance with current best practice, the residual impact for air is considered no change.

It has been determined that the proposed project will not have direct or indirect significant effects to local air quality.

Biodiversity

Impacts

- Due to significant distancing and restriction to the carriageway, no impact is predicted to Coshogle Wood SSSI.
- Due to the rural surrounding, it is possible that protected species will be active in proximity to the works area.
- Permanent lighting is not present throughout the scheme extents. As such, the addition of any further lighting for the works may temporarily affect the foraging or commuting routes of nocturnal protected species which may be active in the surrounding area.
- Construction during overnight periods may result in temporary disturbance to protected species which may be active in the surrounding area.

Mitigation

- Operatives will remain vigilant for the presence of protected species within or near the works. If an animal is spotted, all works shall temporarily halt until the animal has moved on, and any sightings shall be reported to the E&S Team.
- Oil, fuels and other potential pollutants or poisonous materials will be stored safely on site.
- On site light sources will be kept to a minimum, and only used as required:
 - When in use, any artificial site lighting will be kept directional to the works area as far as reasonably practicable, reducing any light spill into the wider surroundings, and potentially sensitive habitat (e.g. woodland).
 - When not in use or required, light sources shall be switched off to reduce impact on nocturnal species.
- Effects from noise will be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers shall be checked at regular intervals to ensure efficiency.
- See additional noise mitigation measures in *Noise and Vibration*.

On the condition that best practice is adhered to, residual impact to local biodiversity is considered no change as a result of the works.

It has been determined that the proposed project will not have direct or indirect significant effects to biodiversity.

Material assets and waste

Impacts

- The works will result in contribution to resource depletion through use of virgin materials.
- Greenhouse gas (GHG) emissions will be generated by material production and transporting to and from site.

- The design life for the TS2010 surfacing proposed is estimated to be 20 years. This will reduce the requirement for maintenance to this section of road over the period.
- Transportation and recovery of materials/waste will require energy deriving from fossil fuel, a non-renewable source.

Mitigation

- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications to reduce natural resource depletion.
- Road planings generated will be recovered by a licenced contractor for reuse and/or recycling in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings'.

Temporary impact during construction is considered negligible adverse, with residual impact considered no change.

It has been determined that the proposed scheme will not have direct or indirect significant effects to the consumption of material assets or waste.

Noise and vibration

Impacts

- Works will be undertaken partially during night-time programming. As such, any residential properties in close proximity may experience a level of disturbance due to increase in baseline noise levels, including potential disruption to sleep.
- TS2010 road surfacing will be utilised, which should reduce mid to high frequencies of traffic noise levels. Nearby receptors may benefit from improved reduced noise as a result of the scheme.

Mitigation

- Due to night-time programming, Dumfries and Galloway Council will be notified in advance of the works. This will be undertaken by the E&S Team.
 - This will be undertaken during weekly notification issue to all Local Authorities for the upcoming Amey programme of works.
- Residential properties in proximity of the works shall be notified prior to commencement of the works. This notification will contain details of expected nature, timings and duration of the works.
- Effects from noise shall be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers will be checked at regular intervals to ensure efficiency.
- Plant and machinery will be switched off when not in use to reduce noise disruptions to the surrounding environment.
- Engine exhaust and vent silencers shall be used where possible.

- The noisiest works will be scheduled for before 11:00pm where feasible.
- The delivery of materials to the scheme extents shall be made during daytime and early evening hours where reasonably practicable, to reduce delivery trips required and noise associated by traffic.
- Operatives will avoid extraneous noise whilst onsite and will be briefed using the Amey Noise and Vibration environmental briefing.

Provided that best practice measures are followed, it is predicted that residual impact from noise will be negligible beneficial, with temporary minor adverse impact predicted during construction.

It has been determined that the proposed project will not have direct or indirect significant effects to local noise and vibration.

Population and human health

Impacts

- TM will involve a full closure of the A76 carriageway within the scheme extents. This TM arrangement may have the following impacts:
 - Closure and diversion route may cause delays to road users of the A76 carriageway and could potentially increase traffic levels on surrounding local roads. Due to night-time programming, any impact is considered to be limited.
 - Local accesses will be temporarily obstructed.
- TS2010 road surfacing will be utilised. TS2010 can improve the skid resistance of the road.
- The use of TS2010 is shown to have superior durability to standard road mixes as such this will extend the life span of the carriageway preventing the need for reoccurring routine maintenance and associated levels of disruption.

Mitigation

- Residential properties in proximity of the works shall be notified prior to commencement of the works, advising of any access restrictions.
- Where presence of works/TM result in obstruction of access points, operatives will grant local access as required.
- Advance traffic signs will be placed prior to works in an effort to minimise disturbance to vehicular travellers, and will inform road users of expected duration, timings, and any temporary traffic management arrangements/restrictions.

Provided that best practice measures are followed, it is predicted that residual impact to population and human health will be no change, with temporary minor adverse impact predicted during construction.

It has been determined that the proposed project will not have direct or indirect significant effects to local population and human health.

Road drainage and the water environment

Impacts

- If not adequately controlled, debris and run off from the works could be suspended in the surface water. In the event of a flooding incident, this debris may be mobilised and could enter the road drainage having a detrimental effect on the surrounding local water environment.
- Potential for spills, leaks or seepage of fuels and oils associated with plant to escape and reach drainage systems and watercourses if not controlled, which may negatively affect the water environment.
- In the event of a flooding incident, debris may be mobilised and could enter the road drainage having a detrimental effect on the surrounding local water environment.

Mitigation

- Best practice, as detailed by SEPA Guidance for Pollution Prevention (GPPs), will always be followed onsite. This will ensure that any potential sediments/spills are not allowed to enter road drainage unchecked.
- Appropriate measures shall be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This will include, but will not be limited to, spill kits being present onsite at all times, and the use of funnels and drip trays when transferring fuel, and utilisation of drain covers/shielding boards.
 - Any pollution incidences will be reported to the Amey control room.
- Operatives will conduct regular checks of the surrounding ground/drains for any spillages/leakage regularly, especially in periods of heavy wind and rainfall.
- All debris which has the potential to be suspended in surface water and wash into the local water environment shall be cleaned from the site following the works.
- Debris and dust generated as a result of the works will be prevented from entering the drainage system. This will be via the use of drain covers or similar.
- Weather reports shall be monitored prior to and during all construction activities. In the event of adverse weather/flooding events, all activities will temporarily stop, and only reconvene when deemed safe to do so, and when run-off/drainage can be adequately controlled to prevent pollution.

Providing all works operate in accordance with site control measures and SEPA Guidance for Pollution Prevention (GPP) the residual impact for water is considered no change.

It has been determined that the proposed project will not have direct or indirect significant effects to the water environment.

Climate

Impacts

- Greenhouse gas emissions will be emitted through the use of machinery, material production, materials used (containing recycled and virgin materials), and transporting to and from site.

Mitigation

- Where possible local suppliers will be used as far as practicable to reduce travel time and greenhouse gas emitted as part of the works.
- Vehicles / plant shall not be left on when not in use to minimise and prevent unnecessary emissions being emitted.
- Further actions and considerations for this scheme are detailed in section 8 Material Assets and Waste.

It has been determined that the proposed project will not have direct or indirect significant effects to climate.

Vulnerability of the project to risks

Due to the like-for-like nature of the works, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.

It has been determined that the proposed project is not expected to alter the vulnerability of the existing trunk road infrastructure to risk of major accidents or disasters.

Assessment cumulative effects

The [Scottish Road Workers Commission](#) Interactive Map does not highlight any other works in the area at the time of construction.

[Dumfries and Galloway Council's Planning Alert Portal](#) does not highlight any proposed developments or planning applications on the A76 carriageway within proximity to the scheme.

Amey's current [programme of works](#) has not highlighted any planned or ongoing works on the A76 carriageway which may result in a cumulative impact on road users.

No other nearby schemes which may result in a combined effect on nearby receptors have been identified.

Any future schemes will be programmed to take into account already programmed works, and as such any effect (such as from TM arrangements and potential construction noise) will be limited.

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:

- Construction activities are restricted to the approximate 13,600m² (1.36ha) area of existing carriageway.
- At end of life, components can be recycled, reducing waste to landfill.
 - Where construction activities are amended to include areas of deeper treatment, road planings have potential to include coal tar.
- Uncontaminated road planings will be recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.
- The chosen material TS2010 Surface Course allows a wider array of aggregate sources to be considered when compared to typical SMA.
- The design option conveys sustainability benefits by significantly reducing the quantity of maintenance interventions required at the location.
- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications.

Location of the scheme:

- The scheme will be confined within the existing carriageway boundaries and as a result will not require any land take and will not alter any local land uses.

- The scheme is not situated in whole or in part in a “sensitive area” as listed under regulation 2 (1) of the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended).

Characteristics of potential impacts of the scheme:

- No significant residual impacts are predicted. Disruption due to construction activities are not expected to be significant and will be mitigated as far as is reasonably practicable.
- Due to the like-for-like nature of the works, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- As the works will be limited to the like-for-like replacement of the structural components, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- The successful completion of the scheme will afford benefits to residential properties in proximity, due to improved condition and ride quality of the carriageway surface.
- The use of TS2010 road surfacing affords the benefits of a reduction in mid to high frequencies of traffic noise and a reduction in ground vibrations. As a result, ambient noise levels should decrease post construction.

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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