A9 Dualling: Crubenmore to Kincraig

Non-Technical Summary

Ruthven Barracks
# A9 Dualling: Crubenmore to Kincraig

## Non-Technical Summary

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A9 looking north towards Glentruim junction
1 Preface

This document is the Non-Technical Summary (NTS) of the Environmental Statement (ES) for the A9 Dualling – Crubenmore to Kincraig Project (hereafter referred to as the Proposed Scheme).

Copies of the ES and draft Road Orders are available to view during normal opening hours at the following locations:

**Transport Scotland**
- Major Transport Projects
- Buchanan House
- 58 Port Dundas Street
- Glasgow G4 0HF
- Telephone 0141 272 7100
- Monday to Thursday 8.30am-5pm, Friday 8.30am-4.30pm

**Badenoch Library**
- Badenoch Centre
- Spey Street
- Kingussie PH21 1EH
- Telephone: 01540 661 596
- Mon 12-5pm, 6-8pm
- Tues CLOSED
- Wed 10am-1pm, 2-5pm
- Thurs 10am-1pm, 2-5pm
- Fri 10am-1pm, 2-5pm

**The Highland Council Service Point**
- The Courthouse
- High Street
- Kingussie PH21 1HR
- Telephone: 01540 664 529
- Mon to Fri 9am–12.30pm, 1.30–3pm

**The Highland Council Service Point**
- Townhouse
- Castle Street,
- Inverness, IV1 1JJ
- Telephone: 01349 886 606
- Mon 9am-5pm
- Tues 9am-5pm
- Wed 10am-5pm
- Thurs 9am-5pm
- Fri 9am-5pm

Please note that all locations are closed at weekends and bank holidays.

The Environmental Statement (including this Non-Technical Summary) and draft Road Orders may also be viewed online at: [https://www.transport.gov.scot/projects/a9-dualling-perth-to-inverness/a9-crubenmore-to-kincraig](https://www.transport.gov.scot/projects/a9-dualling-perth-to-inverness/a9-crubenmore-to-kincraig)

A bound paper copy of the ES may be purchased at a cost of £150, or in DVD format at a cost of £10, by writing to Transport Scotland at the address stated.

Copies of the NTS are available free of charge on request from the same address or by email to: info@transport.gov.scot

Any person wishing to express an opinion on the Environmental Statement should write to Transport Scotland at the address stated. Formal representations are invited until six weeks after the advertised date of publication.
2 Introduction

2.1 Background

The A9 trunk road forms a strategic link on Scotland’s transport network, connecting the Scottish Highlands and the Central Belt. It is vital in supporting the growth and development of the economy in the north of Scotland.

A Strategic Transport Projects Review in 2008 (STPR) set out the future investment programme for transport in Scotland over two decades, including the proposed upgrade of the A9. Following this review, the Scottish Government’s 2011 Infrastructure Investment Plan (IIP) confirmed a commitment to upgrade the A9 to dual carriageway standard between Perth and Inverness by 2025.

The programme of individual projects required to achieve this was subject to Strategic Environmental Assessment (SEA, 2012-14), which identified and considered environmental constraints and sensitivities at a route-wide level. The Crubenmore to Kincraig project forms part of the Central Section (from Glen Garry to Dalraddy) of the A9 Dualling Programme. Figure 2-1 shows the location and extents of the project.

The Crubenmore to Kincraig project comprises dualling of approximately 16.5 km of the existing A9, to be achieved through a combination of widening and upgrades of the existing carriageway, a new crossing of the River Spey and the Highland Main Line (HML) railway at Kingussie, and sections of localised offline works.

The Proposed Scheme incorporates upgrades to road drainage and provision of two main junctions to cater for local access; one at Newtonmore and the other at Kingussie, with northbound left in/ left out accesses also provided near Glentruim/ Ralia Café and Tourist Information, Ralia Lodge/ Nuide Farm and Balavil.

Figure 2-1: Proposed Scheme location and extents
2.2 Environmental Impact Assessment

An Environmental Impact Assessment (EIA) of the Proposed Scheme is required under European and Scottish legislation. The Environmental Statement (ES) reports the findings of the EIA.

The purpose of the EIA is to investigate the likely significant effects of the Proposed Scheme on the environment. The EIA has been undertaken in line with relevant legislation and guidance including the Design Manual for Roads and Bridges (DMRB) Volume 11 - Environmental Assessment.

Further details about likely impacts of the Proposed Scheme can be found in the ES. For ease of use, the ES is presented across four documents:

- Non-Technical Summary (this document)
- Volume 1: Main Report
- Volume 2: Technical Appendices (Part 1 and Part 2)
- Volume 3: Environmental Drawings

The EIA process provides an opportunity to minimise potential environmental effects through design refinement.

Environmental constraints and issues have been identified through consultation, extensive environmental surveys, and technical assessments. The information gathered has informed decision-making throughout the design process. This has provided the opportunity to address potentially significant impacts where practicable; for example, by refinement of the Proposed Scheme design or by the incorporation of measures to avoid or reduce potential adverse impacts.

Impacts have been assessed by comparing the existing situation (the baseline conditions) to the expected conditions that would occur with the Proposed Scheme in place.

2.3 The Need for the Proposed Scheme

The need for dualling of the A9 has been recognised for some time, with an ongoing Scottish Government commitment outlined in the STPR published in 2008, the IIP published in 2011 (and reiterated in 2015) and the National Planning Framework (NPF) published in 2014.

The A9 is the main north-south trunk road between Perth and Inverness, connecting the Central Belt with the Scottish Highlands. The route is vital to the economy and communities of the north of Scotland, supporting key industries including energy, construction, tourism and food and drink. The A9 is also a key tourist route providing access to the Cairngorms National Park, Perthshire and the Highlands.

The A9 single carriageway between Crubenmore and Kincraig has a lack of safe overtaking opportunities, which can lead to vehicles being held up by slower moving traffic. This can lead to driver frustration, potentially resulting in dangerous overtaking manoeuvres.

From 2008 to 2015, there were 23 accidents along the existing A9 from Crubenmore and Kincraig, a number of which were serious or fatal. The majority of accidents on the A9 occur along sections of single carriageway, and generally near to junctions or transitions between existing single and dual carriageways.
2.4 Scheme Objectives

The aim of dualling between Crubenmore and Kincraig is to improve the operational performance and level of service of this section of the A9, building on the objectives set for the A9 dualling as a whole.

The STPR assessment of problems and opportunities along the existing A9 led to the development of Transport Scotland’s A9 Dualling Programme objectives:

1. To improve the performance of the A9 by:
   - Reducing journey times, and
   - Improving journey time reliability.

2. To improve safety by:
   - Reducing accident severity, and
   - Reducing driver stress.

3. Facilitate active travel (travel by walking and cycling) in the corridor.

4. To improve integration with public transport facilities.

2.5 Alternatives Considered

Three high-level, strategic alternative dualling corridor options were considered within the SEA including:

- on-line widening – dualling along the existing A9 single carriageway sections, to tie in with the existing dualled sections
- on-line widening with some near off-line dualling – dualling along the existing A9 route, with near off-line dualling where constraints dictated
- off-line alternative route options – dualling via seven possible alternative routes to the existing A9

The studies identified that online widening, generally following the route of the existing A9, was the most suitable corridor option.

Following the SEA, the Crubenmore to Kincraig project was subject to a range of DMRB Stage 2 assessments to determine a preferred route. This included preliminary sifting of mainline alignment and junction options, which resulted in nine mainline options and four indicative junction options at Kingussie and Newtonmore being taken forward for assessment.

Engineering, environmental, traffic and economic assessments considered the options in line with the relevant standards and guidance as set out in the DMRB. The feedback following public exhibitions held in November 2015 was also considered during the option assessment process.

The DMRB Stage 2 assessment resulted in the selection of the mainline and junction layout options that were considered to achieve the best balance of environmental, engineering, traffic and economic impacts.

The preferred route alignment, junction locations and layouts were presented at a public exhibition in March 2017, before progression to DMRB Stage 3 design development and assessment.

The design of the preferred mainline and junction has since been subject to ongoing refinement through DMRB Stage 3, informed by a range of inputs and considerations, including landowner and other stakeholder consultation, as well as EIA.
2.6 Iterative Design Development

The DMRB Stage 3 design for the Proposed Scheme, as assessed and reported in the ES, reflects approximately 18 months of design development of the preferred route that was selected at DMRB Stage 2.

The environmental assessment team, working closely with engineering teams, consultees and Transport Scotland, have influenced the development of the design based on knowledge gained through the previous assessment stages and the EIA process. The design has been iteratively amended and improved to reach the final DMRB Stage 3 design.

Key considerations during design development aimed to reduce potential impacts by avoiding and/or minimising Proposed Scheme extents on properties and designated areas such as the River Spey Special Area of Conservation (SAC), River Spey-Insh Marshes Special Protection Area (SPA) and Insh Marshes National Nature Reserve (NNR), amongst others.

The type of bridge selected for the River Spey crossing was part of the iterative design process. A range of structural bridge forms were considered, including arched, concrete and steel composites and cable-stayed suspension. Following stakeholder consultation, feedback reiterated the importance of the historic setting and prominence of the Ruthven Barracks Scheduled Monument and concerns on the possible increased risk of bird strike resulting from structural forms with elevated features. A low profile bridge design was therefore incorporated in the Proposed Scheme.

Further design development and assessment of Newtonmore Junction determined there would be benefits with a compact grade separated junction (Figure 2-2). This refinement reduced the overall footprint of the junction and reduced the need for significant rock cut. The refinement also reduced the visual impact and minimised the potential impact on known areas of peat and Ancient Woodland.

2.7 The Proposed Scheme

An outline of road alignment and junction layouts has been developed for the Proposed Scheme, which is referred to as the ‘Stage 3 design’. This design will be used by the selected Contractor to prepare a detailed design for construction of the Proposed Scheme.

In summary, approximately 16.5 km of the A9 between Crubenmore and Kincraig is proposed to be dualled. There will be no gaps in the central reservation in order to prevent right-turn manoeuvres across the carriageway. The proposal includes grade separated junctions with underbridges at Newtonmore and Kingussie, and the construction of a new bridge across the River Spey.

Figure 2-2: Proposed Scheme – Newtonmore Junction layout

The Proposed Scheme includes landscaping along the route in order to integrate the design with the existing landform. This includes varying slopes, and planting of native species, to re-establish or reinforce the local character of the landscape.
Introduction

Provision of access tracks will maintain access to local estates and properties. Three new northbound left-in/ left-out (LILO) accesses will retain direct access onto the A9, from the local road network.

The first LILO is where the Glen Truim/ Catlodge Road (C1137) will be extended to link with the Raliabeag Road (U3011), which connects to Ralia Café and Tourist Information and onto the B9150 and the Newtonmore Junction.

The second LILO links to the north end of the Ralia-Nuide Road (U3063); which also retains its connection to the B9150 and the Newtonmore Junction to the south and provides access north to Inverton properties. The third northbound LILO is at Balavil, which links south to Chapelpark, Lynchat via an underpass. Each northbound LILO is connected to properties on the southbound side via local underpasses.

The Proposed Scheme removes all previous roadside bays and introduces five new lay-bys on each carriageway. These new lay-bys include a separation island and merge tapers to/ from the mainline carriageway.

Lay-bys are, where feasible, located in positions with good views of the local scenery, and some include links to the local path network.

Where non-motorised user (NMU) routes (e.g. footways and cycleways) are affected by the dualling, these are diverted and reinstated where necessary to maintain connectivity. A new NMU route is provided from Kingussie to Kinraig, running parallel to the new northbound carriageway. This provides one section of a Kingussie-Aviemore NMU route, linking to a section already introduced on the Kinraig-Dalraddy scheme, which opened in 2017.

The Proposed Scheme also replaces the existing watercourse underbridges and culvert structures. Mammal ledges are included in a number of culverts and, where possible, bridge crossing structures have been set back from banksides to enable natural river movement and provide opportunity for wildlife and pedestrian passage.
2.8 Delivering the Proposed Scheme

The Proposed Scheme will be submitted for authorisation through the Roads (Scotland) Act 1984. If approved, it is anticipated that the construction period will be approximately three and a half years.

The final detailed design may be refined by the selected Contractor, although it must still meet the requirements of the ES. Should the Contractor refine the design which has been assessed by the EIA, then an environmental review of those refinements will be required to assess whether residual impacts will be greater than reported in the ES, and whether any additional mitigation measures will be required.

2.9 Overview of EIA process

The EIA has been an integral part of the design process, informing the design as it progressed. The EIA process identified the existing baseline environment via field surveys, consultation and review of existing data.

The process then considered the likely impact of the Proposed Scheme on the existing environment, before designing mitigation measures to address and reduce impacts and then considering the likely residual effects, once mitigation has been put in place.

This was an iterative process, with the EIA team informing and recommending design changes to minimise the overall residual effects of the Proposed Scheme.

2.10 Consultation

During the design process, consultation was carried out with approx. 40 organisations including Cairngorms National Park Authority (CNPA), The Highland Council (THC), Scottish Environment Protection Agency (SEPA), Historic Environment Scotland (HES) and Scottish Natural Heritage (SNH).

Consultations have been carried out with non-motorised user groups, business groups, community councils, landowners, local businesses and residents, as well as a range of other environmental stakeholders.

There have also been several public exhibitions and local drop-in consultation events. The overarching purpose of all environmental consultation to date has been to:

- collate baseline information regarding existing environmental site conditions
- inform the scope of the assessments being undertaken, and seek consultee input to the Proposed Scheme design
- ensure that affected landowners, members of the public, statutory consultees, and other bodies with a particular interest in the environment, were informed of the proposals and provided with an opportunity to comment
- obtain advice on the identification of potential impacts and the development of appropriate mitigation.

Feedback from consultations was reviewed by the project team and considered in the iterative design development, and assessment processes, where appropriate.
3 Impacts of the Proposed Scheme

3.1 Community and Private Assets

This chapter of the ES considers the potential impacts of the Proposed Scheme on community land and facilities, including open space and access to services. It also considers changes in access to and from residential and commercial properties, and how the land required for the Scheme impacts upon Community and Private Assets within a 500m study area.

The main settlements in the study area include Newtonmore and Kingussie, which are both served by A9 junctions. However, the Newtonmore junction currently requires right turn manoeuvres across the ‘live’ A9 carriageway. Smaller settlements include the Glentruim, Nuide, Ruthven, Inverton and Lynchat areas, with a range of dwellings and holdings throughout the Scheme extents. Many of these are connected to the A9 directly and via the local road network.

Dualling 16.5km of the A9 between Crubenmore and Kincraig will require approximately 170 hectares of land from community and private assets (called land-take). The impact and significance of land-take has been evaluated in the context of each land use type. In total, 5 community land areas, 58 residential properties, 12 estates, farms and crofts (with a range of agriculture, sporting and forestry interests), 14 commercial properties and two development land areas were identified and assessed as being potentially affected either by land-take or changes in access.

Commercial interests include Invernahavon Caravan Site; Glentruim Castle and Cottages; Ralia Café and Tourist Information, a number of holiday lets; Meadowside Quarry; the Highland Main Line (HML) railway and the Highland Wildlife Park (see Photograph 3-1).

Community land areas include the Glebe Ponds recreational area at Kingussie and the Insh Marshes National Nature Reserve. Estates include Phoines, Ralia, Balavil and Dunachton with the Royal Society for the Protection of Birds (RSPB) and Church of Scotland landholdings at the Insh Marshes. Farms and holdings, e.g. at Ruthven and Croftcarnoch, and crofts at Laggan were also considered. Development land was identified at Kingussie and Mains of Balavil.

The assessment considers land losses as permanent impacts and construction stage disruption as temporary. However, changes in access may be either temporary during construction, or permanent where an existing access is closed and replaced with an alternative. Permanent changes in access are assessed in terms of the change in journey length between the affected property and the A9, in both directions.
Some journey lengths are unavoidably longer, and significant (Moderate to High) residual effects were determined for 16 residential and commercial receptors in terms of change in southbound journey lengths, and there were no significant residual effects in the northbound direction.

With the provision of:

- a new grade separated junction at Newtonmore;
- an upgraded junction at Kingussie;
- new left-in/ left-out accesses at Glentruim/ Raliabeag, Ralia/ Nuide and Balavil;
- a series of new underpasses connecting northbound and southbound side routes; and
- provision of alternative accesses;

the overall change in access to/ from the A9 is considered safer than the existing situation, and the residual effect on access to/ from, and potential severance of, the neighbouring communities was determined as Neutral.

With respect to permanent land-take from Estates, holdings and crofts, significant residual effects (Moderate to Substantial) are determined for six of the 12 identified, including Ralia Estate (sporting interests), Ruthven Park (agricultural interests), Church of Scotland land at Kingussie Glebe (agricultural interests), Laggan Croft No. 1 and Laggan Croft No. 2 (agricultural interests) and Balavil Estate (agricultural interests). Of these, the effects on Ruthven Park, Church of Scotland (Kingussie Glebe) and the two Laggan Crofts are considered significant enough to adversely affect the viability of the agricultural interests.

Adverse effects were determined on developments with Planning Permission at Mains of Balavil and a planned housing development area owned by Davall Developments Ltd. at Kingussie. The Proposed Scheme affects the accesses for these planned developments.

In terms of land-take from commercial and residential properties, four significant residual effects were determined, including the total loss of one residential property to the Proposed Scheme.

The three other properties lose some land to the Scheme; however, the majority of that land is required to provide alternative or improved access to each affected property. Permanent land-take from community land at Kingussie Glebe Ponds and Insh Marshes National Nature Reserve is not considered significant.

During the construction period, each of the considered properties will experience some disruption to access, with potential for traffic management delays and closure of direct accesses.

Properties and businesses nearest the A9 are predicted to experience temporary, but potentially significant, adverse effects due to perceived reduction in amenity; for example, holiday lets and tourist attractions near the Proposed Scheme boundaries.

A range of construction stage mitigation measures are proposed, including a Community Liaison team whose responsibility it is to consult with local communities and residents. An Agricultural and Estates Management Plan (which will form part of the Construction Environmental Management Plan) will be developed to facilitate communication and programming between the construction team and affected landowners during sensitive or high periods of activity on surrounding land.

As such, access to/ from residential, commercial, industrial, agricultural, forestry and sporting assets will be maintained throughout the construction period by means of signed diversions, where necessary. The estimated duration and location of these diversions will be communicated to affected parties, as required, before they are put in place.
3.2 Effects on All Travellers

This chapter of the ES considers the potential impacts of the Proposed Scheme on vehicle travellers and on pedestrians, cyclists and equestrians (collectively called non-motorised users (NMU)).

The NMU assessment considered potential changes in access to NMU routes, and changes in journey length and pleasantness (amenity value).

Twenty-six NMU routes were identified within the study area including National Cycle Network Route 7 (NCN7) (see Photograph 3-2), hill walking routes, core paths and informal routes.

These NMU routes provide access into the nearby towns of Newtonmore and Kingussie, as well as the surrounding hills and Ruthven Barracks. There are currently 20 points where these routes cross the A9, potentially putting users at risk of accidents.

During construction of the Proposed Scheme, there will be significant adverse impacts on the network of NMU routes, notably those directly adjacent to the road, or which cross over the A9.

A section of NCN7 at the southern end of the study area, where it runs adjacent to the carriageway, may not be accessible during construction due to its proximity to the A9. Diversions and alternative provisions will be arranged by the Contractor during the affected period.

Where NMU routes are not directly affected by diversions, there may still be adverse impacts on the amenity value of the routes. There are likely to be changes in views and noise levels relating to construction activities; however, these impacts will be temporary.

In terms of permanent effects, NMU routes are assessed at winter year of opening and summer 15 to 25 years after opening. Upon operation, at the year of opening, embedded mitigation such as underpasses and realigned NMU routes are taken into consideration. It is anticipated that there could be significant adverse impacts on five NMU routes due to potential impacts on amenity value, changes in journey length and access. However, following consideration of additional mitigation measures, including reinstatement of lost vegetation and additional tree and scrub planting, no significant long-term residual effects on NMU routes were determined.

The Proposed Scheme will benefit NMUs by providing significantly safer crossing opportunities via underpasses. Additional pathways connecting existing routes including the proposed NMU route to link Kingussie and Kincraig, and the provision of improved lay-bys, will also provide further benefits for NMUs across the Scheme.

Vehicle travellers have been considered in relation to views from the road and potential effects on driver stress. Views from the road are transient but can add to the experience for vehicle travellers.
The Proposed Scheme sits within the Cairngorms National Park, and travellers can experience high quality scenic views, such as views of the Monadhliath Mountains, Ruthven Barracks and the Insh Marshes.

During construction it is anticipated there will be significant effects on views from the road, concentrated at the new or improved junctions and accesses such as Glen Truim/ Ralia/ Nuide, Newtonmore and Kingussie, and Balavil, as well as where access tracks are located parallel to the A9.

Views from the road are assessed at winter year of opening and summer 15 to 25 years after opening, once vegetation has become established. At year one there will be some notable changes in the areas noted above, leading to localised significant impacts.

It is anticipated that once required mitigation planting measures become established, there will be no significant long term residual (permanent) impacts on views from the road.

Driver stress is contributed to by various factors along the A9 including the speed and flow of traffic, the presence of HGVs and the lack of overtaking opportunities when behind slower moving vehicles (see Photograph 3-3).

Studies have identified that the existing A9 results in a moderate level of driver stress with higher levels experienced on single carriageway stretches with a lack of overtaking opportunities.

As a result of the Proposed Scheme, there will be safer junctions, and provision for safe overtaking which will improve traffic flows, journey time and reliability, each of which will benefit and reduce driver stress levels.
3.3 Geology, Soils and Groundwater

This chapter of the ES identifies and describes the potential impacts related to geology, soils, potential contamination and groundwater associated with the construction and operation of the Proposed Scheme.

The study area is underlain by soils of medium conservation interest throughout, with peat present in several locations. No designated geological sites were identified; however, features of geodiversity interest include Lochan an Tairbh (see Photograph 3-4) and local rock exposures.

Photograph 3-4: Lochan an Tairbh is a feature of geodiversity interest

A number of private water supplies are currently active in the study area, and several ecological habitats were identified to contain wetland vegetation that relies on groundwater, known as Groundwater Dependent Terrestrial Ecosystems (GWDTE).

The Proposed Scheme impacts are likely to include excavation and disturbance of soils, peat and geodiversity features, changes to groundwater levels, flows or quality, disturbance of GWDTE, and impacts in relation to areas of potential contamination and private water supplies.

Proposed mitigation measures to reduce or offset such impacts include:

- protection of private water supply networks, provision of replacement sources of water or diverted networks
- groundwater and private water supply monitoring during construction to ensure potential impacts are successfully controlled
- best practice pollution, sediment and material management measures, following SEPA pollution prevention and waste guidance
- development of management plans identifying best practice measures to minimise impacts on soils and peat during construction
- monitoring and recommendations on construction techniques that may help avoid or reduce peat or GWDTE disturbance
- re-instatement, restoration or creation of peat or wetland habitats through re-use of excavated peat
- rock mapping and inspections during construction, in areas of anticipated rock cutting where exposed rock faces may be created
- environmental supervision on site during construction to oversee the implementation of mitigation and monitoring.

With the provision of mitigation measures, no significant residual impacts are anticipated on the majority of receptors, with only localised effects expected to remain in relation to groundwater levels and flows during construction and operation. Taking account of the overall scale of effects and provision of mitigation, monitoring or compensation measures, effects are expected to reduce in the long-term, and no significant ecological (i.e. peat and GWDTE) losses are anticipated.
3.4 Road Drainage and the Water Environment

This ES chapter considers potential impacts to the water environment in terms of water quality (surface and groundwater); physical change to the characteristics of waterbodies (e.g. river, loch, pond); and risk of flooding.

Several sensitive rivers and streams could potentially be impacted by the Proposed Scheme, particularly as it extends through environmentally sensitive areas that are designated for nature conservation. All rivers and streams potentially affected by the Proposed Scheme, either during or after the construction phase, have been identified through desk studies and field surveys.

The existing A9 crosses the River Spey at Kingussie (see Photograph 3-5), as well as 28 other smaller rivers and streams that feed into the Spey. The River Spey and several tributaries form part of the River Spey Special Area of Conservation, designated to protect species and habitats. Other features considered during the water environment assessment include residential and non-residential properties, the A9 itself, cultural heritage sites (e.g. Ruthven Barracks) and the Highland Main Line railway.

Photograph 3-5: Flood waters visible adjacent to approach to River Spey crossing

The water environment may be susceptible to various impacts associated with the Proposed Scheme during both the construction and operational phases. These potential impacts include, but are not limited to:

- increased runoff of water from the road surface resulting in increased channel erosion and flood risk
- pollution associated with contaminated road surface runoff and accidental spillages
- disturbance or damage to river banks and beds mainly during construction
- changes to the flow of water in rivers and streams potentially affecting the risk of flooding and the natural balance of the movement of sediments through the catchment.

SEPA, The Highland Council and SNH were consulted on relevant aspects of the water environment assessment, and the application of established methodologies for assessing flood risk and water quality has enabled potential impacts on the water environment to be avoided, reduced, or appropriately mitigated.

Examples include the incorporation of Sustainable Drainage Systems (SuDS) which are designed to treat road surface runoff to remove pollutants, and provide storage and attenuation to avoid any increased risk of flooding due to increased road runoff.

With the proposed new River Spey bridge crossing, flood modelling predicts an overall beneficial effect by increasing conveyance capacity during high flow events, reducing upstream flood risk whilst limiting change in downstream flood levels within the Insh Marshes.

Where the Proposed Scheme design encroaches into the functional floodplain, compensatory flood storage areas are provided to avoid cumulative effects downstream.
Where possible, bridge abutments will be set back from river banks to enable more natural channel migration. At smaller watercourse crossings, culverts will be sized to allow a natural movement of sediment, reducing the risk of blockage and associated flooding.

Incorporation of sustainable engineering solutions such as SuDS will provide additional protection to sensitive rivers and also afford opportunities for improved wildlife habitat and increased biodiversity.

Careful design and inclusion of appropriate mitigation in the Proposed Scheme will not only avoid potentially adverse impacts on sensitive receptors, but will also provide increased connectivity for land and aquatic species affording an overall improvement in the water environment compared with baseline conditions.
3.5 Ecology and Nature Conservation

This chapter of the ES considers the potential impacts associated with the construction and operation of the Proposed Scheme on designated sites for nature conservation, notable habitats and protected species. There are seven statutory designated sites within the project study area:

- River Spey – Insh Marshes Ramsar
- River Spey – Insh Marshes Special Protection Area (SPA)
- River Spey – Insh Marshes Site of Special Scientific Interest (SSSI)
- Insh Marshes Special Area of Conservation (SAC)
- Insh Marshes National Nature Reserve (NNR)
- River Spey SAC and River Spey SSSI.

Specialist ecology surveys have been carried out to determine the presence of notable habitats and species throughout the study area, including within the Insh Marshes (see Photograph 3-7).

Notable habitats consist primarily of heathland, grassland and woodland which comprise important vegetation communities. These habitats support protected species such as breeding and overwintering birds (waders, waterfowl and raptors), particularly within Insh Marshes. Habitats also support protected mammals such as water vole, otter and red squirrel.

Potential construction impacts include habitat loss, species disturbance and pollution risk to the water environment. Potential impacts during operation include habitat fragmentation and permanent loss of bat roosts.

Through design development, encroachment into notable habitats and designated sites has been minimised where practicable. The provision of safe crossing points for mammals has been incorporated through inclusion of mammal ledges and appropriately sized culverts and bridges. Additional mitigation measures to reduce or offset potential impacts include:

- provision of river bed material in culverts to support fish passage, and provision of dry mammal tunnels
- restoration of habitats affected during construction, and tree planting to mitigate loss of woodland (including Ancient Woodland)
- outline habitat management and species protection plans to be further developed at construction stage
- creation of wader habitat within Dellmore of Kingussie
- environmental supervision on site during construction to oversee the implementation of mitigation, exclusion zones and working periods to minimise species disturbance during sensitive seasons.

With the mitigation measures proposed, there are predicted to be no significant residual adverse impacts on the majority of habitats, once planting measures and vegetation re-establishes; however, it is recognised that new tree planting cannot recreate an Ancient Woodland. Beneficial effects are anticipated for species permeability, with safer areas for mammals to cross under the A9.
3.6 **Landscape**

The Proposed Scheme lies within the Cairngorms National Park, an area of spectacularly scenic landscape composed of highlands, glens and straths, forests, moorland and rivers. The dramatic mountain ranges of the Monadhliath and Cairngorms border to the east and west. In the southern section, joined by the River Truim, the River Spey meanders through the surrounding landscape, while northeast of the Spey crossing is dominated by the Insh Marshes.

The ES landscape assessment considers the degree of anticipated change that the Proposed Scheme would have on defined Landscape Character Areas and Special Landscape Qualities of the Cairngorms National Park. It also considers the sensitivity of Local Landscape Character Areas, determined as part of the assessment.

The main settlements of Kingussie and Newtonmore are situated to the west of the existing A9. The landscape study area contains Scheduled Monuments of national importance, including Raits Cave Souterrain near Lynchat and Ruthven Barracks, which overlook the Insh Marshes National Nature Reserve. To the north of the study area, the Category B listed Balavil House has a non-designated designed landscape, also overlooking the Insh Marshes. Further north, the Highland Wildlife Park is located to the west of the existing A9.

The landscape surrounding the Proposed Scheme comprises a mosaic of mixed woodland, including areas of ancient woodland, as well as open undulating areas, with heather that provides seasonal colour, and agricultural fields around Kingussie and Newtonmore.

Viewed from the road travelling north, the southern extent of the Scheme to Newtonmore is enclosed by mixed and coniferous woodlands, which conceal the surrounding landform. The landscape becomes more open between Newtonmore and Kingussie, where the surrounding topography is increasingly exposed, before becoming relatively enclosed again once north of Kingussie.

Photograph 3-8: A9 view south between Newtonmore and Kingussie

The Proposed Scheme will introduce new dual carriageway infrastructure elements to the landscape, including a wider road and bridges, new junction, side road and access layouts, and drainage features. These will result in changes in land cover and roadside woodland at various locations will be affected. The greatest effect identified in the assessment is on the Ralia Local Landscape Character Area due to the changes to woodland, landform, and introduction of Sustainable Drainage System (SuDS) features.

An evident change in the landscape will be the new, longer River Spey bridge, resulting in an assessed significant effect to the Insh Marshes Local Landscape Character Area; however, the new bridge has a low profile design to reflect the existing structure form and limit the level of change.

Other mitigation to address Landscape and Visual effects is described in the next section.
3.7 Visual

The ES visual assessment considered views to and from the A9, and the degree of anticipated change that the Proposed Scheme would have on receptors including residents, users of local path networks and outdoor spaces, as well as users of the A9. The study area included the two principal settlements of Newtonmore and Kingussie, smaller settlements including, but not limited to, Ralia, Nuide, Ruthven and Lynchat, and the small village of Insh, where some residents have long-distance views towards the road.

Views towards the existing A9 vary throughout the study area. As noted in the Landscape summary, tree cover in some places screens views of the road; however, views are possible at Inverton, Balavil, Laggan and Lynchat. The area surrounding the Insh Marshes is relatively open (see Photograph 3-9), with features such as the River Spey bridge visible from surrounding Kingussie and Ruthven Barracks areas. In total, 54 representative visual receptors were defined for the assessment.

Receptors closest to the Proposed Scheme will experience greater visual effects, with those further away experiencing lesser effects. Landscape and visual impacts have been minimised where possible by design refinements to the road alignment, earthworks and rock cut slopes, SuDS basins and compensatory flood storage areas. Mitigation proposals include stone treatments to retaining structures and planting of native trees, shrubs, heath and grasses to blend with the surrounding landscape as vegetation re-establishes.

During construction, 36 of 54 receptors were assessed with significant visual effects, given visibility to/from the road and removal of existing screen vegetation through site clearance. There is limited opportunity for visual mitigation during construction; however, effects will be temporary.

Significant visual effects persist in the post-construction short term (i.e. one year after opening), due to visibility of land cover and infrastructure changes where mitigation planting will not yet have established.

In the long term (i.e. after 15-25 years), mitigation planting is expected to provide screening to the majority of receptors. However, significant residual effects are predicted for visitors to Ruthven Barracks, residents at a cluster of properties to the south and east of Ruthven Barracks, users of the B970 and residents at Knappach. The new Spey bridge will be larger than the existing, and only limited tree planting is proposed for the new approach embankment adjacent to the B970, in order to limit the potential re-introduction of trees to the Insh Marshes National Nature Reserve area.

For the majority of other visual receptors considered, embedded design and established planted mitigation softens the Proposed Scheme over the long term, reducing adverse effects. Therefore, in the longer term (15 to 25 years after opening) there will be limited visual effects and the Proposed Scheme will fit into the landscape.
3.8 Cultural Heritage

This ES chapter assesses the impact of the Proposed Scheme on cultural heritage features within the study area, including archaeological remains, historic buildings and historic landscapes.

Historical maps, including military maps, were used to identify past landscapes and details of known archaeological sites, and historic buildings, were sourced from Historic Environment Scotland and The Highland Council Historic Environment Record, including visits to archives. Site walkovers and investigations were also undertaken.

A total of 89 cultural heritage features were identified, ranging from the prehistoric to the modern period. Raitts Cave souterrain, for example, is an Iron Age artificial cave with remains of Iron Age houses nearby.

Traces of the medieval period can be seen in sites such as St. Fintan’s chapel and graveyard at Nuidè, Raitts Chapel and the castle mound of Ruthven Barracks. The post-medieval landscape is mainly agricultural with military infrastructure, such as Ruthven Barracks (see Photograph 3-10), General Wade’s Military Road and bridges, and historic buildings within the town of Kingussie and the Balavil Estate.

Through Proposed Scheme design development, potential impacts on known heritage assets were avoided where possible. Where avoidance was not feasible, and potential impacts identified, mitigation is required.

Construction stage impacts were identified in relation to possible removal (or partial removal) of known or potentially buried archaeological remains, further severance of historic landscapes, and changes to the setting of historic buildings and other cultural heritage sites. Sections of General Wade’s Military Road (GWMR), and a number of agricultural sites and depopulated settlements will be affected within the Proposed Scheme boundary.

Operation phase impacts are non-physical, such as noise or visual intrusion and changes to the setting of a heritage site. The low-profile Spey bridge design minimises effects on the setting of Ruthven Barracks. The settings of Raitts Cave souterrain and Balavil Estate were also carefully considered.

A range of mitigation techniques are proposed, including historic building recording and the measuring and mapping of historic earthworks. Pre-construction archaeological excavation is recommended for sites where preservation in-situ is not possible. Watching briefs (when excavations are monitored by an archaeologist to identify and record archaeological remains) are proposed where areas of potential archaeology have been identified. Planting of trees and other screening vegetation is also proposed as mitigation for cultural heritage sites, where appropriate.

The proposed mitigation will reduce the potential impacts of the Proposed Scheme on the cultural heritage sites of the area and, after mitigation, no significant adverse residual impacts are predicted during the operation of the Proposed Scheme.
3.9 Air Quality

Air quality across the Proposed Scheme area has been identified by The Highland Council as ‘good’. Air quality objectives set by the European Union and Scottish Government are expected to be achieved.

The air quality assessment reported in the ES, considered the key air pollutants associated with road traffic emissions: nitrogen oxides, nitrogen dioxide and fine particulate matter. The assessment used computer modelling to determine the potential for changes to air quality as a result of the Proposed Scheme, and any related impacts on local communities or designated ecological sites. The risk of impacts from construction dust was also considered.

Construction activities have the potential to cause dust emissions that may cause nuisance, health effects or damage to sensitive habitats. Following appropriate guidance, the risk was assessed as ‘medium’, leading to the recommendation of dust mitigation measures to control emissions.

During operation, impacts on human health could result from vehicle emissions if the Proposed Scheme results in changes to traffic flows or the distance to sensitive locations, such as houses or schools. However, the assessment found that Proposed Scheme impacts are likely to be imperceptible at most sensitive locations for all pollutants considered.

The exception is for one sensitive receptor where the concentration change of nitrogen dioxide is classified as a ‘medium increase’, and for eleven receptors for which the change is defined as a ‘small increase’. However, the changes do not cause a significant increase in nitrogen dioxide and the concentrations in all assessed scenarios are well below the required air quality objective. Therefore, the impact at all locations is negligible.

Appropriate dust control measures have been recommended to reduce the risk of dust emissions during the construction phase. These include covering of stockpiles, wheel-washing and the use of site speed limits. No mitigation is expected to be required for the operation of the Proposed Scheme.

With the implementation of appropriate dust control measures, the construction phase of the Proposed Scheme is not predicted to cause any significant impacts, and no significant impacts are expected from the operation of the Proposed Scheme.
3.10 Noise and Vibration

The A9 passes through countryside, and as such, few houses are located in close proximity to the Proposed Scheme. Road traffic using the A9 is currently the main source of noise in the area.

The noise assessment reported in the ES considered the results of noise monitoring and modelling, to identify potential noise and vibration impacts associated with the Proposed Scheme during both construction and operation.

Consideration has been given to noise sensitive receptors, which include residential properties, community facilities, users of public rights of way and nature conservation designated sites.

The construction period has the potential to result in high noise levels for those receptors closest to the Proposed Scheme, particularly during the noisier activities such as earthworks and road construction. As construction moves along the length of the Proposed Scheme, the duration of construction works will be for variable and limited periods at each location.

Mitigation measures will be put in place during construction to reduce impacts; this will include community liaison and implementation of best practice to minimise noise.

Once the Proposed Scheme is constructed and in operation, there will be both increases and decreases in road traffic noise for receptors.

The Proposed Scheme includes measures within the design that will reduce noise, including a low noise road surface on the mainline dual carriageway and junctions.

The predicted changes in road traffic noise on scheme opening are significant enough at some locations to result in specific noise mitigation measures to be considered.

There are five locations where noise barriers have been proposed, resulting in reductions in predicted road traffic noise from the A9. The residual significance of impact for those receptors where noise barriers are implemented are reduced to not significant.

There are three receptors located away from the A9 where a significant road traffic noise impact is predicted in the short-term, reducing to a not significant impact over the long term. It is not feasible to implement noise mitigation at these locations due to access requirements to the properties from the adjacent B9150 road.

There are no significant adverse vibration impacts predicted for the construction or operation of the Proposed Scheme.
3.11 Materials

Construction of the Proposed Scheme will consume large quantities of raw materials and manufactured construction products, with associated potential to generate large quantities of waste. The potential impacts associated with these activities include:

- generation of greenhouse gas emissions during the extraction, processing and manufacturing of construction materials and products
- depletion of natural resources within the study area, e.g. crushed rock and sand and gravel aggregates
- impact on waste management facilities within the study area, e.g. through permanently occupying landfill space and/or the temporary use of waste storage, recycling and recovery capacity.

Where potential impacts have been identified these will be reduced, where possible, during detailed design and construction stage efficiencies, and through compliance with relevant legislation, policies and plans relating to the use of materials and the management of waste.

The application of material and waste management principles will seek, where possible, to minimise:

- use of construction materials and products that consume large amounts of energy in their extraction, processing and manufacturing
- purchasing of key construction materials and products from suppliers who cannot demonstrate that they have been produced sustainably
- use of virgin aggregates produced from naturally occurring mineral deposits and used for the first time
- generation of surplus materials and waste, and the permanent disposal of these materials to landfill through promoting re-use, recycling and recovery options.

With best practice application of the principles of the waste hierarchy (see Figure 3-1), and implementation of Site Waste Management Plans, as required by SEPA, the potential for depletion of natural resources and generation of wastes is not inappropriate, nor significant, within the context of a major road scheme.

The magnitude of greenhouse gas emissions associated with construction of the Proposed Scheme was estimated to be Moderate. However, construction stage emissions represent a very small proportion (less than 0.0014%) of the UK’s third carbon budget (2018 to 2022) (the period in which construction is likely to be undertaken), and are consistent with other large-scale road projects throughout the UK, which have a demand for construction materials and products.

**Figure 3-1: The Waste Hierarchy as applied to materials and waste**
3.12 Policies and Plans

The ES assessment considered the Proposed Scheme’s compliance with national, regional and local authority planning policies.

The principle of development of the Proposed Scheme is directly supported within the National Planning Framework 3 (NPF3), which recognises the A9 Dualling as important in relation to increasing business accessibility across the rural north, increasing business confidence and supporting investment throughout the region.

The Proposed Scheme is also compliant with Scottish Planning Policy, which aims to support improved transport connections within Scotland, and within Scotland’s National Transport Strategy, which aims to address congestion and improve safety and journey times between destinations.

The assessment has not found any areas of non-compliance with national planning policies; however, one potential conflict with Policy 3 of the Cairngorms National Park Local Development Plan is identified, in relation to noise mitigation, as the installation of noise barriers is not feasible at certain locations.

The assessment identified some areas of partial compliance with non-statutory policies and strategies such as the Cairngorms Nature Action Plan and the Cairngorms Forest and Woodland Framework. These areas of partial compliance relate predominantly to woodland loss and impacts on landscape, although it is noted that the Proposed Scheme includes for significant woodland planting as mitigation.

Partial non-compliance with regional or authority level policies and strategies should be balanced against the overarching benefits of the Proposed Scheme such as; improved strategic connectivity, enhanced road safety and promoting national and regional social and economic opportunities. The realisation of such benefits is supported by national, regional and local authority planning policies.

3.13 Cumulative Effects

Cumulative impacts refer to circumstances where more than one impact (i.e. flood risk, land-take) may affect the same receptor (i.e. a watercourse, a landowner’s field, a residential dwelling). When these are combined, the resulting cumulative effect may have a more significant impact on the receptor than if the receptor was only affected by one impact.

The ES considers the potential for cumulative impacts of the Proposed Scheme itself, and the potential for cumulative impacts with committed and proposed development projects, including other A9 Dualling Projects. For example, if construction of the Proposed Scheme overlaps with other A9 Dualling Projects construction, there is the potential for cumulative impacts on driver stress, due to multiple phases of traffic management.

It is recognised that the A9 Dualling Programme (Perth to Inverness) may cumulatively result in changes to traffic volumes; it should be noted that the assessment of road traffic is based on traffic modelling data which assumes all A9 Dualling projects will be operational, therefore the ES assessments relating to future noise and air quality already address cumulative effects in this respect.

When considering construction of the Proposed Scheme in combination with other committed developments there is some potential for cumulative impacts relating to access, general construction disturbance, waste and materials. Access and disturbance issues are temporary in nature and will not be significant post-construction. In relation to the use of natural resources, carbon emissions and waste generation, impacts are considered to be locally or regionally significant within the A9 Dualling corridor, but unlikely to become issues at wider scales.

Across the A9 Dualling Programme, cumulative losses of woodland and other potentially sensitive habitats during construction is considered to be primarily addressed via mitigation and compensatory planting proposals developed at individual project level; therefore, no significant adverse cumulative effects with other projects are predicted.
Impacts of the Proposed Scheme

At the Proposed Scheme level, a significant cumulative impact has been identified in relation to loss of Ancient Woodland. Although significant woodland planting is proposed as mitigation, including on former Ancient Woodland sites, it is not possible to recreate an Ancient Woodland.

During construction, cumulative impacts are identified at Ralia Café and Tourist Information and Ptarmigan Lodge, due to potential for impacts on access, amenity and business viability. However, these are considered temporary and not significant post-construction.

At operation, potential for significant cumulative impacts is identified for five receptors, including Ralia Estate, Knappach Cottage, Balavil Mains Farm House and RSPB land (including Insh Marshes). The impacts predominantly relate to change in access provision, visual effects and loss of land to the Proposed Scheme.

When considering operation of the Proposed Scheme in combination with other developments, significant cumulative beneficial impacts are identified for local communities and the River Spey.

Upon completion of the Proposed Scheme (and other A9 projects), long term beneficial cumulative effects are predicted in relation to:

- improvements in road safety,
- reductions in driver stress,
- safer access to walking/cycling routes,
- improved treatment of road surface water runoff and road drainage discharge to the water environment, and
- improved fish and mammal passage under the A9.
A9 Dualling: Crubenmore to Kincraig

Non-Technical Summary

Constraints:
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Ramsar
- National Nature Reserve (NNR)

Proposed Landscape, Ecological and Noise Mitigation:
- Exclusion Zone
- Restore Habitat Affected By Works
- Dry Heath
- Grassland
- Shrub Planting
- Native Woodland
- Wet Woodland
- Reedbeds
- Wet Heath
- Mammal Fencing
- Structure with Mammal Passage
- Noise Mitigation

Drawings Legend

Design:
- Proposed Scheme Detail
- 500 Chainage in metres
- Bridges
- SuDS Basins
- Compensatory Flood Storage Areas

Constraints:
- Non Motorised Users Routes (NMU Routes):
  - Existing National Cycle Route (NCN7)
River Spey SAC

Highland Main Line Railway

River Spey SAC

River Spey SSSI

Glentruim / Ralia Access

U3011

Phoines Underpass

Southbound Lay-by

C1137

Drawing: 3

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