

**DMRB Stage 3 Environmental Statement
Non-Technical Summary
Transport Scotland**

December 2017





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View North to Dalwhinnie in Winter

1 Preface

This document is the Non-Technical Summary (NTS) of the Environmental Statement (ES) for the A9 Dualling – Dalwhinnie to Crubenmore 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 Infrastructure Projects (MTRIPS)

Buchanan House
58 Port Dundas Street
Glasgow G4 0HF

Telephone: 0141 272 7100

Monday to Thursday 8.30am-5pm, Friday 8.30am-4.30pm

and also at:

Badenoch Library

Badenoch Centre
Spey Street
Kingussie PH21 1EH
Telephone: 01540 661596

and **The Highland Council Service Point**

The Courthouse
High Street
Kingussie PH21 1HR
Telephone: 01540 664529

Mon 12-5pm, 6-8pm
Tues CLOSED
Wed 10am-1pm, 2-5pm
Thurs 10am-1pm, 2-5pm
Fri 10am-1pm, 2-5pm

Monday to Friday
9am–12.30pm and 1.30–3pm

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-dalwhinnie-to-crubenmore/>

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 eight weeks after the advertised date of publication.



Wade Bridge

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 Dalwhinnie to Crubenmore 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 Dalwhinnie to Crubenmore project comprises dualling of approximately 11km of the existing A9, to be achieved through a combination of widening and upgrades of the existing carriageway, and sections of localised offline works. The Proposed Scheme incorporates upgrades to road drainage and provision of a junction to serve Dalwhinnie.

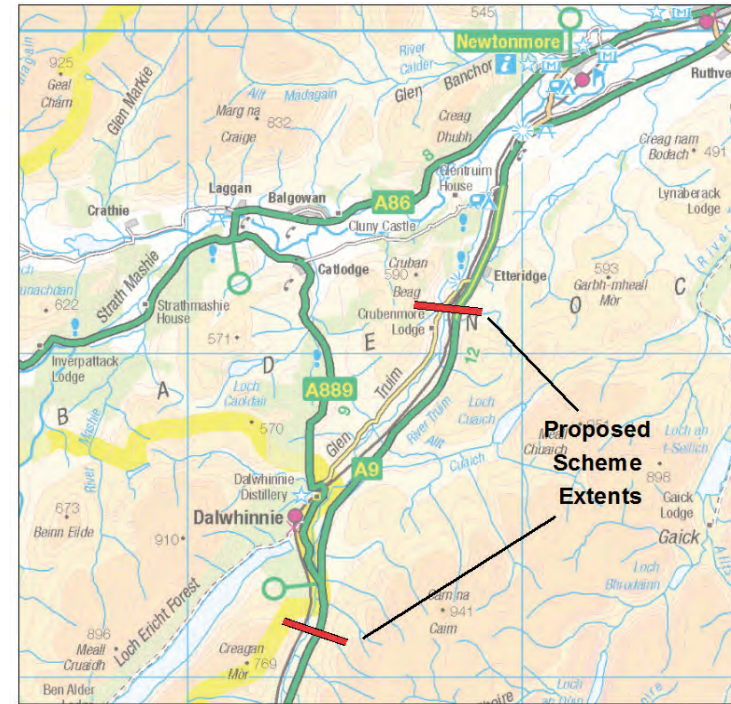


Figure 2-1: Proposed Scheme location and extents

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.

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 as follows:

- 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 current A9 single carriageway between Dalwhinnie and Crubenmore can lead to vehicles being held up by slower moving traffic and lack of overtaking opportunities. This can lead to driver frustration, potentially resulting in dangerous overtaking manoeuvres.

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.

Along the extents of the existing A9 from Dalwhinnie to Crubenmore, there were 32 accidents during the period from 2008 to 2015, including three fatal and seven serious accidents.

2.4 Scheme Objectives

The aim of dualling between Dalwhinnie and Crubenmore 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, as follows:

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

The SEA of the A9 Dualling Programme consisted of a route-wide assessment, considering environmental constraints, issues, risks and opportunities. The SEA was completed in parallel with similar route-wide consideration of engineering constraints, issues, risks and opportunities, as part of a Preliminary Engineering Support Services commission. These studies combined provide a DMRB Stage 1 corridor assessment.

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 Dalwhinnie to Crubenmore 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 six mainline options and five indicative junction options at Dalwhinnie 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. Feedback following public exhibitions held in March and August 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.

A public exhibition was held in March 2016 that presented the preferred mainline and junction options to be progressed.

Following this, additional work was undertaken to consider a more compact form of junction at Dalwhinnie. A revised design was produced that resulted in a reduced footprint, whilst still providing full functionality for all traffic movements. The amended design also offered additional environmental, engineering and economic benefits.

The proposed change to the junction was communicated via consultations in Dalwhinnie, after which it was promoted as the revised preferred option for the Dalwhinnie Junction.

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 option 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 in designated areas such as the River Truim (River Spey Special Area of Conservation (SAC)), and the Drumochter Hills Site of Special Scientific Interest (SSSI).

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 plant species, to re-establish or reinforce the local character of the landscape. Wildlife passages have also been incorporated to enable connectivity beneath the carriageways.

2.7 The Proposed Scheme

An outline road alignment and junction design have 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.

Approximately 11km of the A9 between Dalwhinnie and Crubenmore is proposed to be dualled. There will be no gaps in the central reservation, in order to prevent right-turn manoeuvres across the carriageway, making it safer for all A9 users. The Proposed Scheme includes a grade-separated junction with underbridge at

Dalwhinnie and improved access for Cuaich, incorporating left-in/ left-out accesses on each carriageway, linked by a local underpass (see **Figures 2-2 and 2-3**).



Figure 2- 2: Proposed Dalwhinnie Junction



Figure 2-3: Proposed Cuaich Access

There will be a new short link road between the Dalwhinnie Junction and Dalwhinnie (**Figure 2-4**). This link road will cross the River Truim on a new bridge and there will be a T-junction with the existing A889. A bus turning circle will be provided on the link road, which will bring the bus stop for Dalwhinnie some 1km closer to the village than the existing bus stop.

Approximately 300m of the existing Scottish and Southern Energy (SSE) aqueduct (see **Photograph 2-1**) will require realignment as part of the Proposed Scheme.

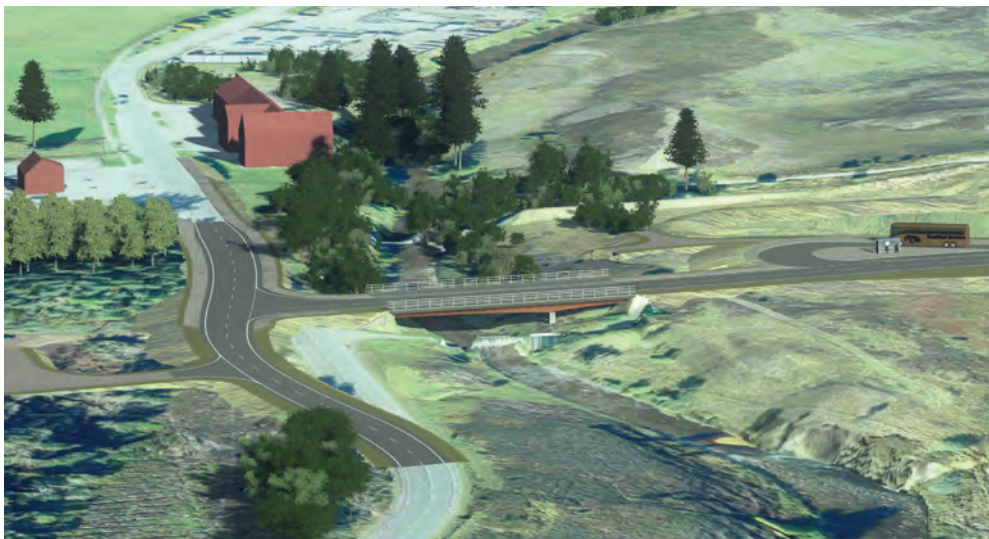


Figure 2-4: Proposed River Truim bridge and bus turning area (south of Loch Ericht Hotel)

Provision of access tracks will maintain access to local estates and properties. The existing temporary powerline access track at Drumochter Lodge, running north for 1.8km, will be made permanent to allow access to the Drumochter Estate.

The Proposed Scheme includes for local realignment of the cycleway at various points where it is affected by the scheme; any cycleway works will be designed to provide an equal or better standard of provision than currently exists.

The Proposed Scheme will replace all existing roadside lay-bys and introduce new ones. In total, there will be four southbound and three northbound lay-bys. Where feasible, these lay-bys have been located in positions with good views to enable the user to enjoy the local scenery.

There will be a 200m long retaining wall situated to the west of the A9 at the northern end of the Proposed Scheme. This is required due to the steep nature of the ground and the close proximity of the railway line at this location.



Photograph 2-1: Scottish and Southern Energy (SSE) Aqueduct

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 construction would take approximately three 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 are greater than reported in the ES, and whether any additional measures to minimise impacts (called mitigation) are 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 and then considering the likely residual impacts, 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 approximately 40 organisations including Cairngorms National Park Authority (CNPA), Historic Environment Scotland (HES), Scottish Natural Heritage (SNH) the Scottish Environment Protection Agency (SEPA) and The Highland Council (THC). In addition, consultation has 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.



View South Over A9 and Highland Main Line Railway



Distant View of Dalwhinnie Distillery

3 Impacts of the Proposed Scheme

3.1 Community and Private Assets

The settlement of Dalwhinnie and the small community of Cuaich, which comprises five residential properties, are located within the Dalwhinnie to Crubenmore section of the A9.

The land use comprises agricultural, sporting and forestry interests and there are also a number of residential and commercial properties, predominantly located within the settlements.

There are four Highland Estates within the study area. Phoines Estate has agricultural, sporting and forestry interests, South Drumochter Estate has sporting and agricultural interests (alongside a secured agricultural tenancy), North Drumochter Estate has agricultural interests and Ben Alder Estate has a forestry interest.

Other commercial considerations include the Loch Ericht Hotel in Dalwhinnie, the Dalwhinnie Distillery (see **Photograph 3-1**), Network Rail's Highland Main Line railway, and a number of Scottish and Southern Energy (SSE) assets.

In order to facilitate dualling between Dalwhinnie and Crubenmore, approximately 112 hectares of land from community and private assets will be required (called land-take). The impact and significance of land-take has been evaluated in the context of each land use type.

No significant residual (permanent) impacts resulting from land-take from residential or commercial assets were identified through the assessment. Where an element of land-take is required, landowners will be compensated financially in accordance with relevant legislation.

Additionally, the mitigation strategy proposed (e.g. roadside signage), ensures that viability of the assessed businesses (with the exception of Phoines Estate) would

not be affected, as the businesses would be able to operate in a manner similar to, or the same as, the way they currently operate.

With the Proposed Scheme in place, there will be changes to access routes to some properties and assets. Mitigation will include signage showing diversions, and provision of alternative accesses where necessary. Significant residual impacts were identified on SSE and Network Rail resulting from permanent access changes, and longer routes, to their assets.

No adverse impacts on community land or facilities has been identified.

In relation to the Highland Estates, significant residual temporary and permanent effects are predicted on Phoines Estate, predominantly due to disruption to sporting activities. Disruption to agricultural activities during construction will also contribute to the temporary significant impact on Phoines Estate. The assessment reports both a temporary and permanent adverse impact on the viability of Phoines Estate.



Photograph 3-1: Dalwhinnie Distillery

3.2 Effects on All Travellers

Potential impacts of the Proposed Scheme on pedestrians, cyclists and equestrians (who are referred to as non-motorised users) and vehicle travellers has been assessed. The assessment of non-motorised users considered any potential changes in the amenity value (pleasantness) of the journey, the length of the journey, and how the route is accessed.

There are 11 non-motorised user routes (NMU) identified within the study area (up to 1.5km either side of existing A9), including Cairngorms National Park Authority Core Paths, hill walking routes, estate tracks and one national cycleway (National Cycle Network 7) (**Photograph 3-2**). These NMU routes provide access along the A9 and into surrounding areas such as Dalwhinnie, Lock Ericht, Cuaich and the nearby hills.

In the existing situation, there are six crossing points of the A9 within the project extents, potentially putting users at risk from accidents with vehicles. There are also informal parking areas within Dalwhinnie, and lay-bys which are used by those accessing these routes.

During construction of the Proposed Scheme, there will be significant adverse impacts on the network of routes, most notably those directly adjacent to, or crossing over the A9. The national cycleway (which is also a Core Path) will need to be locally diverted at the southern end of the project, where cyclists use a track adjacent to the road.

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

During operation of the completed scheme, it is anticipated that there could be adverse impacts on six routes due to changes in amenity value and increases in journey length, with those closest to the A9 road being most affected.



Photograph 3-2: National Cycle Network 7 (NCN7) south of Dalwhinnie

Taking into consideration additional mitigation measures, including reinstatement of lost vegetation and additional tree and scrub planting, there will be no significant long-term residual (permanent) impacts on routes used by pedestrians, cyclists and equestrian.



Photograph 3-3: View of the hills beyond NCN7 at the southern end of the Project

The project will be of benefit to non-motorised users by providing significantly safer crossing opportunities via underpasses, additional footpaths connecting the existing routes, and through the provision of better lay-bys.

There will also be a beneficial impact on users of public transport with the introduction of a bus turning circle closer to Dalwhinnie than the existing bus stops on the A9. The turning circle is located off the main A9 carriageway and therefore eliminates the risks associated with crossing the A9.

Vehicle travellers have been considered in relation to views from the road and potential effects on driver stress. The Proposed Scheme runs through dramatic scenery (see **Photograph 3-3**), and high-quality views are experienced from vehicles on the A9. The route has open views to the west across Dalwhinnie, with Dalwhinnie Distillery as a key landmark (see **Photograph 3-4**).

Views east are more restricted in places due to coniferous woodland along the roadside. It is considered that generally, views into the wider landscape will not be affected, with some local changes around the proposed Dalwhinnie Junction and Cuaich



Photograph 3-4: View from the A9 towards Dalwhinnie Distillery

Driver stress is contributed to by various factors including the speed and flow of traffic, confidence in journey time/ reliability and frustration, for example at the lack of overtaking opportunities when behind slower moving vehicles. 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.

When dualled, the Proposed Scheme will have safer junctions, it will enable much safer overtaking and improve traffic flows, journey time and reliability, each of which will benefit and reduce driver stress levels.

3.3 Geology, Soils and Groundwater

The assessment has considered potential impacts related to soils, geology, designated geological sites, features of geodiversity interest (geological, geomorphological and soil features that make up the landscape), potential contamination and groundwater associated with construction and operation of the Proposed Scheme.

The study area for the Proposed Scheme is underlain by soils of low to high conservation interest, and coring surveys (see **Photograph 3-5**) determined peat to be present in several locations at depths greater than 1m, and locally up to 5m.

No designated geological sites are present, but features of geodiversity interest in the study area include the Drumochter Hummocky Moraines, alluvial fan deposits, the Allt Cuaich catchment and rock exposures.

Three well abstractions at Dalwhinnie Water Treatment Works and one private water supply, at Cuaich, sourced from groundwater, are currently active and in use. Several areas on, or adjacent to, the Proposed Scheme were also identified to contain wetland habitats that rely on groundwater, known as Groundwater Dependent Terrestrial Ecosystems (GWDTE).



Photograph 3-5: Peat coring surveys near Dalwhinnie

Potential impacts have been identified during construction and operation of the Proposed Scheme, including excavation and disturbance of soils, peat or geodiversity features, changes to groundwater levels, flows or quality, disturbance of GWDTE, and in relation to areas of potential contamination, groundwater abstractions and private water supplies.

Proposed mitigation measures to reduce or offset the potential impacts include:

- development of management plans identifying best practice measures to minimise impacts on soils and peat during construction
- recommendations on construction techniques that may avoid or minimise additional peat or GWDTE habitat disturbance
- re-instatement, restoration and creation of peat or wetland-based 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
- groundwater and abstraction well monitoring during construction to ensure potential impacts are successfully controlled and inform the need for further mitigation if necessary
- protection of the water supply network for properties at Cuaich, or provision of a replacement or diverted network
- best practice pollution, erosion, sediment and material management measures during construction and following SEPA pollution prevention and waste guidance
- environmental supervision on site during construction to oversee the implementation of mitigation and monitoring.

With the provision of mitigation measures, no significant adverse residual impacts are expected on the majority of geology, soils and groundwater receptors, and only very local residual effects will remain in relation to groundwater levels and flows in superficial soils and rock at Dalwhinnie junction during construction and operation.

This also applies to peat and GWDTE habitat loss and disturbance during construction. However, the provision of mitigation measures means the impacts on these are not predicted to be significantly adverse in the longer-term, once proposed measures for habitat re-instatement, restoration and creation become firmly established.

3.4 Road Drainage and the Water Environment

Several sensitive rivers and streams could potentially be impacted by the Proposed Scheme, particularly as it extends through designated areas for nature conservation. The existing A9 crosses 62 rivers and streams within the project study area; these are all tributaries of the River Truim (**Photograph 3-6**). The River Truim is designated as part of the River Spey Special Area of Conservation.

Other environmental features within the study area have also been considered to ensure they are not affected by the water environment as a result of the Proposed Scheme (e.g. increased risk of flooding to residential properties, the A9, and the Highland Main Line railway).



Photograph 3-6: The River Truim

All rivers and streams that may be potentially affected by the Proposed Scheme have been identified via field surveys. Their existing conditions have been established in terms of water quality (surface and groundwater); the physical characteristics of the shape, boundaries and content of a waterbody (e.g. river, loch, pond); and the risk of flooding.

Established methodologies for assessing impacts on the water environment and an environmentally-led design process for the Proposed Scheme, has enabled potential impacts on the water environment to be avoided, reduced, or appropriately mitigated.

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

- increased runoff of water from the road surface (which may include pollutants such as road salts)
- accidental spillages
- disturbance or damage to river banks and beds
- 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.

Good practice construction methods and appropriate mitigation measures will minimise potential impacts to the water environment. The incorporation of Sustainable Drainage Systems (SuDS) (**Figure 3-1**) in the Proposed Scheme design will minimise potential water quality impacts by providing sufficient levels of treatment. These systems will also hold water back from entering the rivers and streams and reduce the risk of flooding from increased road runoff.

Where the Proposed Scheme design encroaches into the floodplain, areas will be provided where water can be temporarily stored, to offset the loss of flood storage. Bridges will be set back from the river banks to enable natural changes in their form, and drainage pipes (i.e. culverts) will be sized to allow a natural movement of sediment, reducing the risk of blockage and subsequent flooding.

The mitigation measures in the Proposed Scheme design ensure that there are no significant adverse impacts to the water environment and that improvement is provided, compared to the existing conditions.



Figure 3-1: Visualisation of a proposed SuDS basin at Cuaich (in front of Lechden Woods)

3.5 Ecology and Nature Conservation

The assessment considered the potential impacts associated with the operational and construction phase of the Proposed Scheme on statutory designated sites for nature conservation, habitats and protected species. There are four statutory designated sites within the study area:

- Drumochter Hills Special Protection Area (SPA)
- Drumochter Hills Special Area of Conservation (SAC)
- River Spey SAC
- Drumochter Hills Site of Special Scientific Interest (SSSI).

Specialist ecology surveys have been carried out to determine the presence of notable habitats and species within the study area.

Some of these habitats are valuable as they contain important vegetation communities and support protected species including breeding birds (such as merlin, dotterel and important waders), water vole and otter; **Photograph 3-7** shows typical roadside habitat in the area.



Photograph 3-7: Roadside habitats north of Dalwhinnie

Potential impacts on important ecology features have been identified, including habitat loss and the possible prevention of easy movement of species between different supporting habitat areas. During construction, there is also potential for disturbance to habitats and species and pollution risks to watercourse ecology.

Proposed mitigation measures to reduce or offset potential impacts on statutory designated sites, habitats and species include:

- provision of natural river bed sediment, such as gravel and boulders, in culverts to maintain habitats and fish passage
- provision of safe crossing points for otter and deer through inclusion of mammal ledges in appropriately sized culverts and bridges
- timing of construction works and provision of exclusion zones to minimise disturbance to habitats and species during sensitive seasons
- restoration of habitats affected by construction through replacement planting
- environmental supervision on site during construction to oversee the implementation of mitigation
- development of specific habitat and species protection plans to be followed at the construction stage.

The provision of the mitigation measures means that there are predicted to be no significant residual adverse impacts on the majority of habitats and species once measures, such as planting, become established.

Encroachment into notable habitats has been minimised through the design, however some permanent habitat loss will be unavoidable, although this loss is not deemed to be significant.

Positive residual impacts are anticipated with the inclusion of safer areas for mammal species to cross the A9, as this is predicted to lead to a decrease in animals killed on the road.

3.6 Landscape

The Proposed Scheme lies within the Cairngorms National Park, which is the highest level of landscape designation in the UK. The landscape is highly scenic with dramatic mountain ranges to the east and west, considered typical of Highland landscapes. Within the area, the River Truim runs to the west of the A9, through the strath where the existing A9 corridor and Highland Main Line railway are located (**Photograph 3-8**).



Photograph 3-8: View south over Glen Truim Upper Glen and Dalwhinnie Landscape Character Area

Both the main settlement of Dalwhinnie, and the smaller settlement of Cuaich, are situated to the west of the existing A9.

The landscape is generally sparsely vegetated, with little woodland apart from some areas of coniferous plantation. These areas consist of blocks of trees located along the roadside in the southern part of the scheme, with some smaller

stands along the A9 to the east of Dalwhinnie, at Cuaich, and to the north near Crubenmore.

Within the wider landscape, the moorland vegetation around the A9 mainly consists of grassland and heath, with woodland present to the west of Dalwhinnie.

Land use in the area is predominantly agricultural/ estate land and the Dalwhinnie Distillery is a prominent feature and tourist attraction. In the same corridor as the Proposed Scheme are the Highland Main Line railway, National Cycle Network 7 and the Beauly to Denny powerline (at the southern end).

At Dalwhinnie the landscape is very open, within a wide strath; it then it narrows further to the north, at Crubenmore.

Potential effects from the Proposed Scheme include changes to the landscape resulting from the introduction of the dual carriageway, its proposed slopes, new areas of exposed rock, SuDS basins, access tracks, bridges and retaining wall. The introduction of these elements will result in the loss of vegetation and changes in land cover and, ultimately, in an increase in the footprint of the A9.



Photograph 3-9: Location of proposed Dalwhinnie Junction

Within the Proposed Scheme, there is a requirement to provide woodland planting to help minimise snow drift onto the carriageway. This will introduce areas of woodland at the Dalwhinnie Junction and at Cuaich, to the east of the existing A9, altering the local landscape character in these areas.

The largest change to the landscape is likely to be the introduction of the proposed Dalwhinnie Junction (**Photograph 3-9**). This junction results in the construction of a new road across the strath to connect to the A889 south of the village, and will require significant mitigation.

Landscape effects have been minimised where possible by design refinements to the road alignment, slopes (earthworks/ rock cut) and through proposed landscape planting. Additional mitigation includes refinement of slopes and SuDS basin design, as well as planting along the whole of the scheme. Native planting will improve the Proposed Scheme's fit within the surrounding landscape and enhance the local landscape character and biodiversity, whilst reducing the long-term effects as vegetation re-establishes.

The greatest effect identified in the assessment is on the Glen Truim Upper Glen and Dalwhinnie Landscape Character Area, and the Dalwhinnie Local Landscape Character Area, due to impacts of the Dalwhinnie Junction.

Proposed planting, as detailed on the Environmental Mitigation drawings (included), will improve biodiversity, improve the local landscape character areas and will be of benefit to the Cairngorms National Parks Special Landscape Qualities.

Once mitigation has established, there are no anticipated significant effects on any landscape character or features.

3.7 Visual

The visual assessment considered the degree of anticipated change that the Proposed Scheme would have on local receptors such as residents, users of the A9, footpath or cycle network, and outdoor spaces.

The study area is sparsely populated, with the main visual receptors being residential properties within Dalwhinnie and Cuaich. Other receptors include outdoor recreational users or visitors to the area that use the cycleways, hill walking trails or visit Dalwhinnie Distillery.

Generally, views towards the Proposed Scheme are open from areas to the east and west (i.e. from hill walking routes to the east, and Dalwhinnie to the west). Nevertheless, the existing A9 fits well with the surrounding landscape and curves through the hills sympathetically. Along some sections of the A9, the contours of the landscape, or trees adjacent to the A9, screen the road and the Proposed Scheme is not expected to dominate views from the majority of receptors.

Generally, receptors closest to the Proposed Scheme will experience the greatest effect, and receptors furthest from it will experience lesser effects on views, for example from nearby hill summits where the Proposed Scheme forms a very small part of the wider, scenic view (an example of which can be seen in **Photograph 3-10**).



Photograph 3-10: View from summit of Leacainn looking toward Cuaich and the A9

As with the landscape effects, the greatest effects on visual receptors are associated with the Dalwhinnie Junction. Residential receptors near this location include the Loch Ericht Hotel and the Ben Alder Cottages, as well as road/recreational users of the A889 and National Cycle Network 7.

The Highland Main Line railway runs to the west of the existing A9 and will come very close to the Proposed Scheme in some locations. These include at the southern end of the scheme before the line passes through Dalwhinnie, and in the northern part of the scheme, north of Cuaich.

In the short term (1 year after scheme opening), there will be significant visual effects on users of the Highland Main Line railway due to land cover changes through construction works, where proposed planting will not yet have established. In addition, some new features of the Proposed Scheme such as drainage basins, access tracks, bridges and retaining walls, will be clearly visible from the train.

In the long term, there will be a significant adverse visual effect associated with the Proposed Scheme at the location of the Dalwhinnie Junction. There will be new native woodland planting at the junction location which will help reduce the effect of the new infrastructure from receptors.

The proposed roadside planting along the route will also allow certain views from the road to be framed, such as Dalwhinnie Distillery and the surrounding scenic landscape, whilst helping to screen the Beauly to Denny powerline from road users.

There are no other significant residual visual effects resulting from the Proposed Scheme. Mitigation proposals, set out in section 3.6 Landscape above, will, over time, reduce the visual effects of the Proposed Scheme. Therefore, in the longer term (15 to 25 years after scheme opening) there will be limited visual effects and the Proposed Scheme will fit into the landscape.

3.8 Cultural Heritage

Information gathered on the cultural heritage of the area included details of known archaeological sites and historic buildings from the Historic Environment Record and Historic Environment Scotland. Historical maps, including military

maps, were reviewed in order to identify the past landscapes and any archaeological sites shown. Local studies and archives were visited to research the area and a site walkover was also undertaken to identify any so-far unrecorded sites.

A total of 27 cultural heritage features were identified within the assessment, including archaeological remains, historic buildings and historic landscapes. The majority of sites date from the post medieval and modern periods, including General Wade's Military Road, bridges such as Wade Bridge (**Photograph 3-11**) associated with the military road, shieling huts (temporary dwelling for seasonal grazing), farmsteads, and historic buildings, including the Dalwhinnie Distillery and the Dalwhinnie War Memorial.



Photograph 3-11: Wade Bridge

Potential impacts during construction have been identified in relation to aspects such as removing, or partially removing, known and potential buried archaeological remains and historic buildings, severing historic landscapes and also changes to the setting of cultural heritage sites.

Potential impacts during the operational phase of the Proposed Scheme are non-physical, such as noise or visual intrusion and other changes to the setting of a cultural heritage site.

Impacts have been identified on a section of General Wade’s Military Road which may be removed where it exists within the area of the Proposed Scheme, and there are a number of shieling huts which will be either partially or completely removed.

There are a number of bridges constructed as part of the military road, including Crubenmore Old Bridge which was constructed as part of a later mid-19th century re-alignment of the military road. Some of the treeline which currently screens the bridge from the existing A9 will be removed as part of the Proposed Scheme.

The Truim Aqueduct (SSE Aqueduct) was built in the early 20th century and is part of the Tummel Valley Hydro Scheme. The Proposed Scheme will realign a section of the aqueduct (**Figure 3-2**).

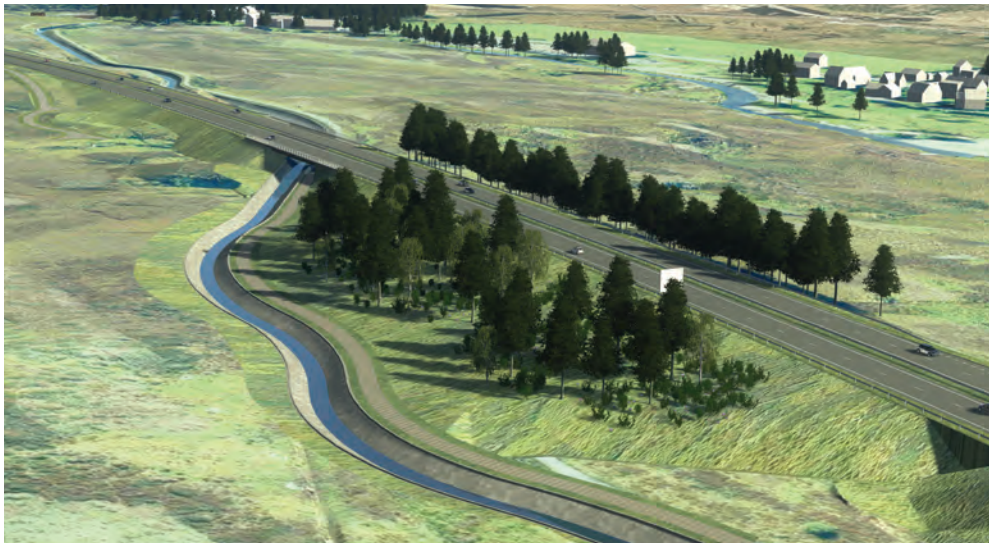


Figure 3-2: Proposed realignment of SSE Aqueduct

To minimise potential impacts, a range of mitigation measures are proposed, which include recording information on historic buildings which will be affected in any way, and measuring and mapping earthworks. Landscaping, including planting of trees and vegetation for screening purposes, is also proposed for cultural heritage sites where appropriate.

Watching briefs (which are when the construction is monitored by an archaeologist in order to identify and record archaeological remains) are proposed for sites which do not require other mitigation measures, or areas where potential archaeology has been identified.

The route of General Wade’s Military Road winds through the area and although it is likely to have been destroyed in the past where the current A9 crosses it, a watching brief will preserve by record the known locations where the Proposed Scheme will impact it.

As Crubenmore Old Bridge (**Photograph 3-12**) is part historical military infrastructure, the trees removed as part of the Proposed Scheme will be replaced for screening purposes after the road has been constructed.

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 impacts on cultural heritage sites are predicted.



Photograph 3-12: Crubenmore Old Bridge over River Truim looking south

3.9 Air Quality

Air quality across the area where the Proposed Scheme is located 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 has considered the key air pollutants associated with road traffic emissions: nitrogen oxides, nitrogen dioxide and fine particulate matter. The air quality 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 between the road and sensitive locations, such as houses or schools. However, the assessment found that the Proposed Scheme impacts are likely to be imperceptible at all sensitive locations for all pollutants considered.

The exception is for one sensitive receptor where the concentration change of nitrogen dioxide increases. However, the change is small and the concentrations in all assessed scenarios are below the required objective, therefore, the impact at this location 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 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 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 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. Predicted changes in road traffic noise are not significant enough to result in specific noise mitigation measures to be considered necessary for any individual receptors (such as noise barriers or secondary glazing).

The Proposed Scheme includes measures within the design that will reduce noise, including a low noise road surface along its length.

On opening, two properties are predicted to incur an increase in road traffic noise that is likely to be perceptible. Mitigation is not proposed at these properties as it is considered to be within acceptable limits. There are also 13 houses, one community facility and two public rights of way where a decrease in road traffic noise is likely to be perceptible.

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

3.11 Materials

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

- 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, recovery capacity.

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

The application of the waste hierarchy (**Figure 3-3**) and the following material and waste management principles, will seek to minimise (where possible) the:

- use of construction materials and products that consume large amounts of energy in their extraction, processing and manufacturing, or substitute them for materials and products that use less energy

- purchasing of key construction materials and products from suppliers who cannot demonstrate that they have been produced sustainably
- use of virgin aggregates that have not been previously used or consumed
- generation of surplus materials and waste, and the permanent disposal of these materials to landfill through promoting re-use, recycling and recovery options.

By applying these principles, the potential for impacts relating to the depletion of natural resources and the generation of waste by the appointed contractor is not considered to be significant



Figure 3-3: The waste hierarchy as applied to materials and waste

The magnitude of greenhouse gas emissions associated with construction of the Proposed Scheme was estimated to be Moderate after the application of the above mitigation measures. However, these emissions represent a very small proportion (less than 0.0015%) 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 that typically have an unavoidable demand for construction materials and products.

3.12 Policies and Plans

The 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 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 tackle congestion and improve safety and journey times between destinations.

The assessment has not found any areas of non-compliance with national planning policies or the Statutory Development Plan (Cairngorms National Park Local Development Plan). The assessment has identified some areas where there is 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 there is an overall net gain of woodland associated with the Proposed Scheme.

The presence of 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 effects 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 potential impacts 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.

It is considered that during construction there is the potential for combined effects at Cuaich and Dalwhinnie, although these are not considered to be significant. Once the Proposed Scheme is operational, there is the potential for combined effects at Loch Ericht Hotel, Crubenmore Lodge, Cuaich and Dalwhinnie; again, none of these are considered to be significant.

The potential for cumulative effects in combination with other A9 Dualling projects, which could be constructed at the same time as the Proposed Scheme, has also been considered. It is recognised that construction of multiple schemes adjacent to each other may increase traffic management and journey times; however, none of the identified potentially adverse cumulative effects were considered likely to be significant.

It should be noted that the assessment of road traffic is based on traffic data which assumes all A9 Dualling projects will be operational, therefore the assessments relating to noise and air quality already address cumulative effects in this respect.

Cumulative loss of woodland and other potentially sensitive habitats during construction is considered to be primarily addressed via mitigation and compensatory planting proposals developed at the individual project level; therefore, no significant adverse cumulative effects with other projects are predicted.

The only exception is in relation to the use of natural resources, carbon emissions and waste generation, where impacts are considered to be locally or regionally significant within the A9 Dualling corridor, but unlikely to become issues at wider scales.


Upon completion of the Proposed Scheme (and other A9 projects), 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 surface water runoff and road drainage discharge to the water environment, and mammal and fish passage under the Proposed Scheme.




Waterfall at Allt Na Ceardaich

Legend


Design:

 Proposed Scheme Detail


 Aqueduct Diversion


 Road Crossing Structure

500 Chainage in metres

 SuDS Basins


Constraints:


 Special Area of Conservation (SAC)

 Special Protection Area (SPA)

 Site of Special Scientific Interest (SSSI)

Non Motorised Users Routes (NMU Routes):

 Existing Core Path

 Existing National Cycle Route (NCN7)

Proposed Landscape and Ecological Mitigation:


 Exclusion Zones

 Grassland


 Heath

 Scrub

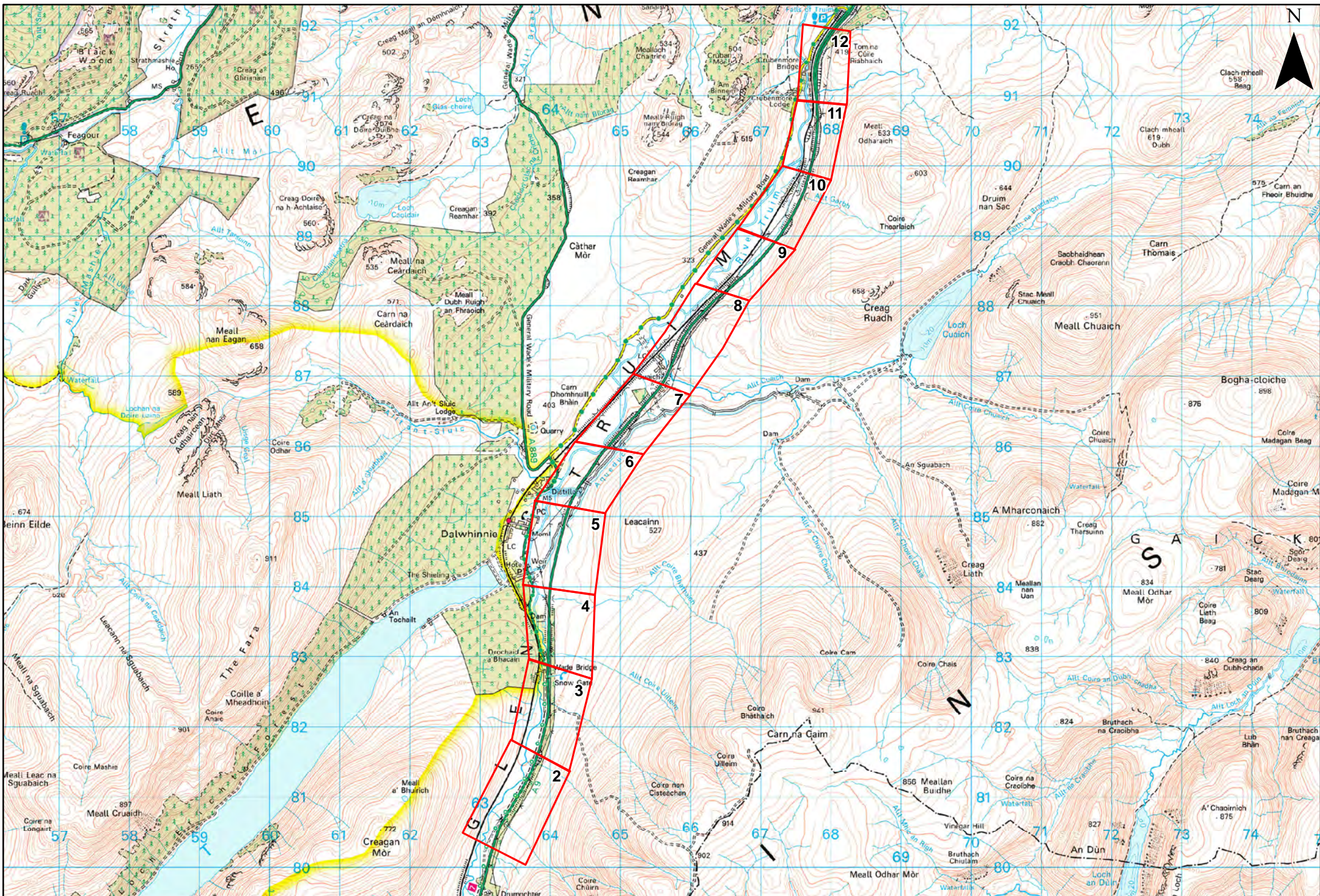
 Mixed Native Woodland

 Scattered Trees

 Peat Restoration Areas

 Mammal Fencing

 Structure with Mammal Passage



Highland Main Line Railway



River Spey SAC

Drumochter Hills SSSI

DRUMOCHTER ESTATE ACCESS TRACK

Drumochter Hills SAC

Drumochter Hills SPA

Drumochter Hills SSSI

Highland Main Line Railway

River Spey SAC

TIE-IN

ALLT COIRE NAN CISTEACHAN UNDERBRIDGE

PROPOSED SOUTHBOUND LAYBY 1

Drumochter Hills SSSI

DRUMOCHTER ESTATE ACCESS TRACK

Drumochter Hills SAC

Drumochter Hills SAC

Drumochter Hills SPA

Drumochter Hills SPA

Drumochter Hills SSSI

Drumochter Hills SSSI



Highland Main Line Railway

River Spey SAC

ALLT COIRE UILLEIM
UNDERBRIDGE

Drumochter Hills SSSI

Drumochter Hills SAC

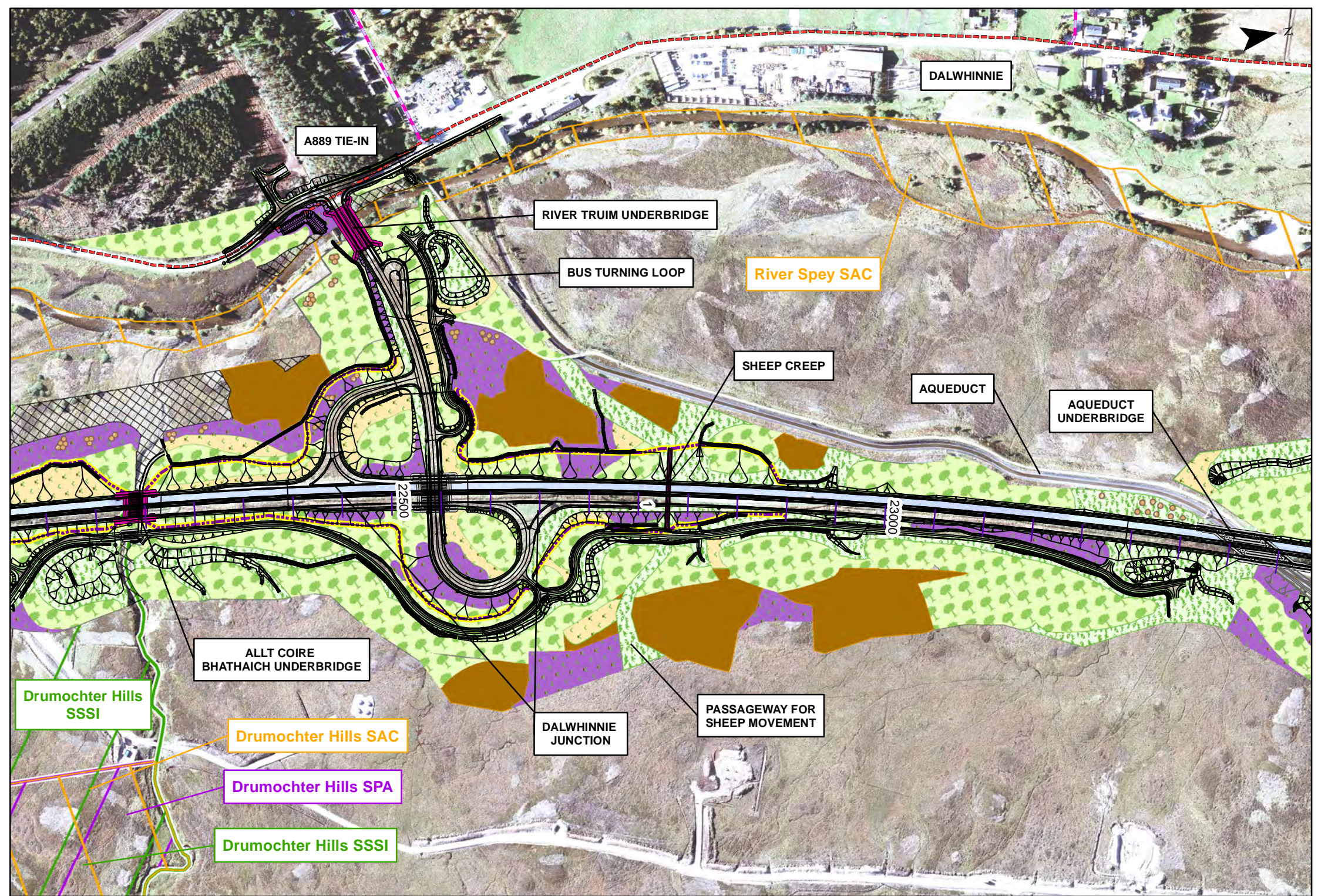
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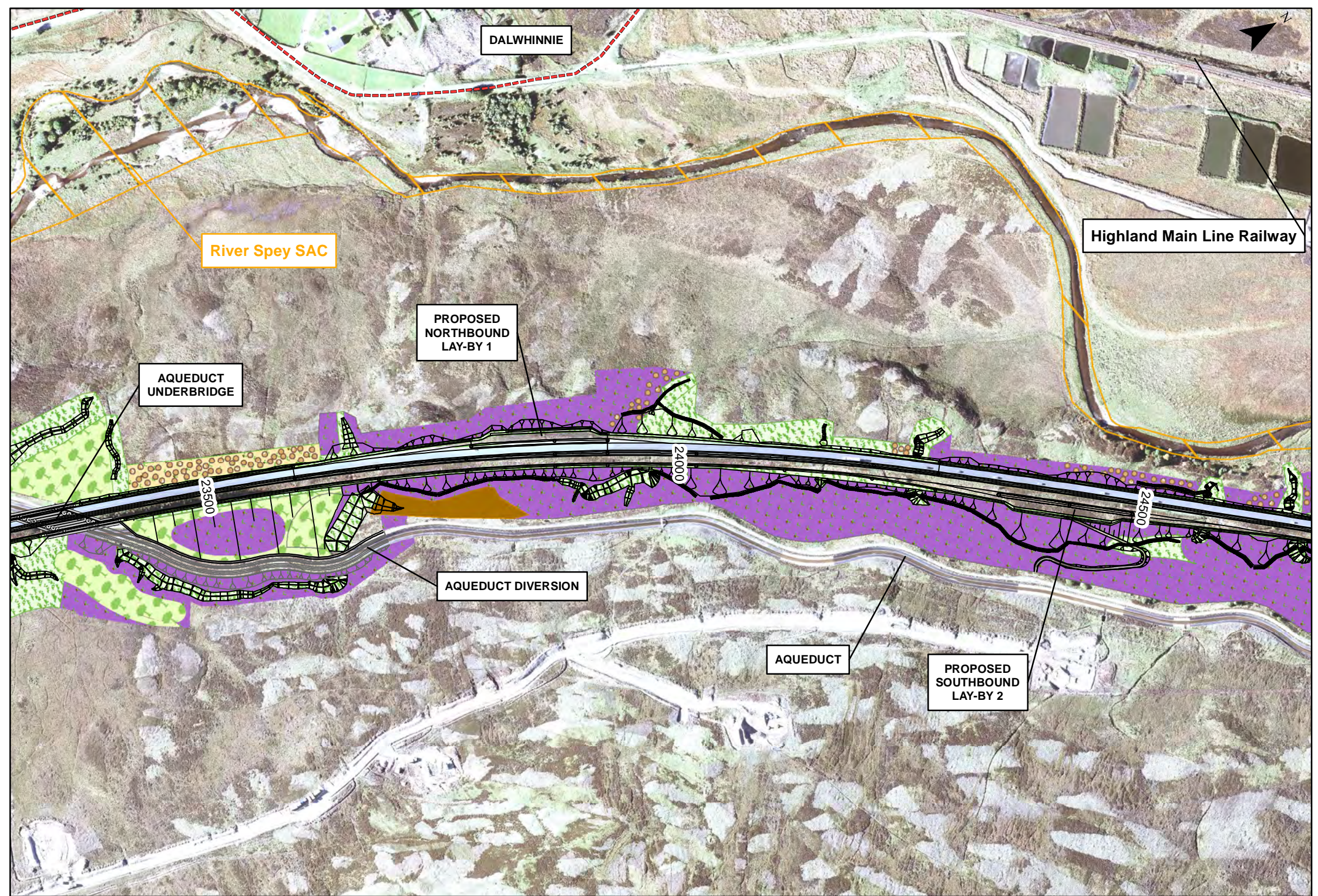
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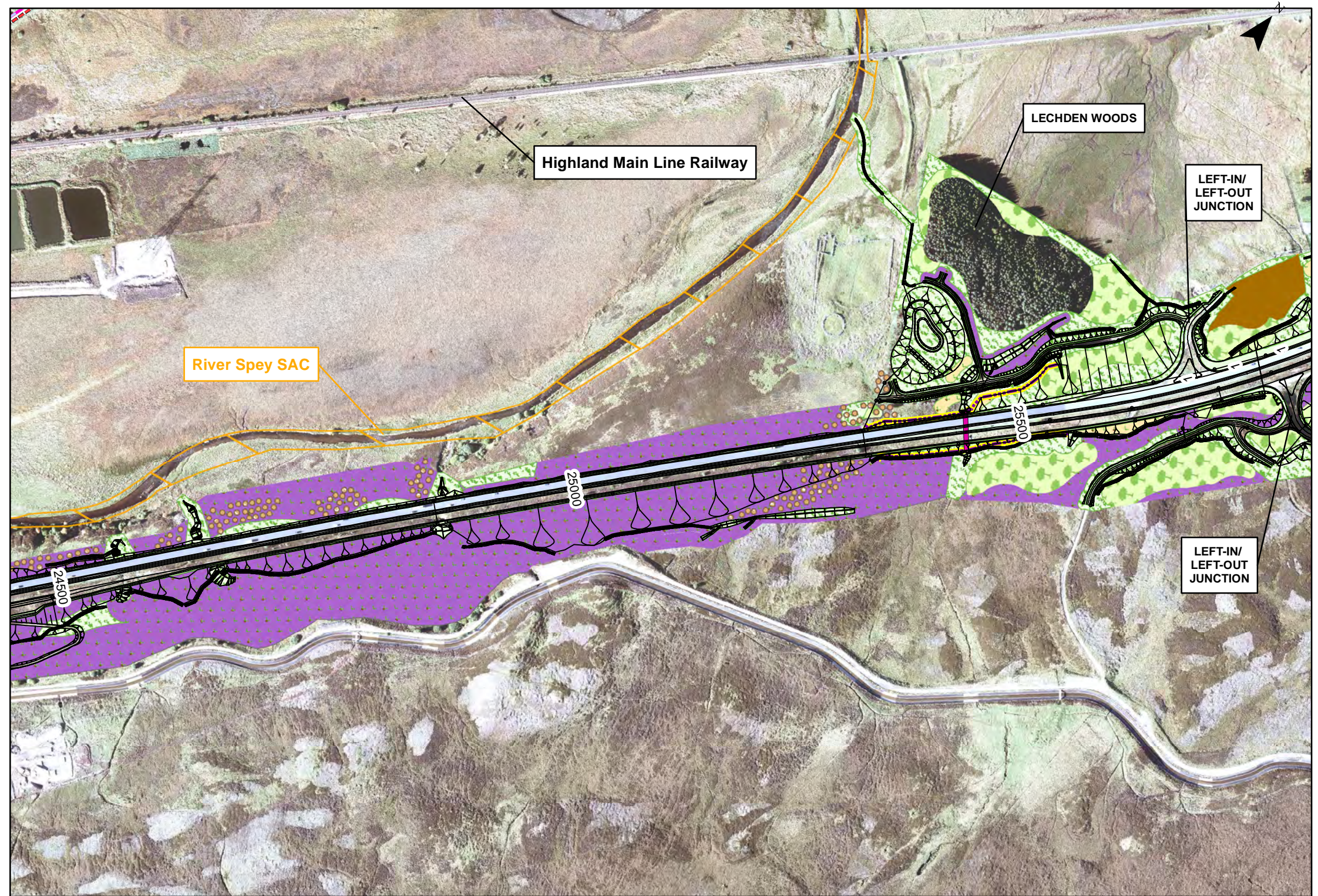
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Highland Main Line Railway

River Spey SAC

LECHDEN WOODS

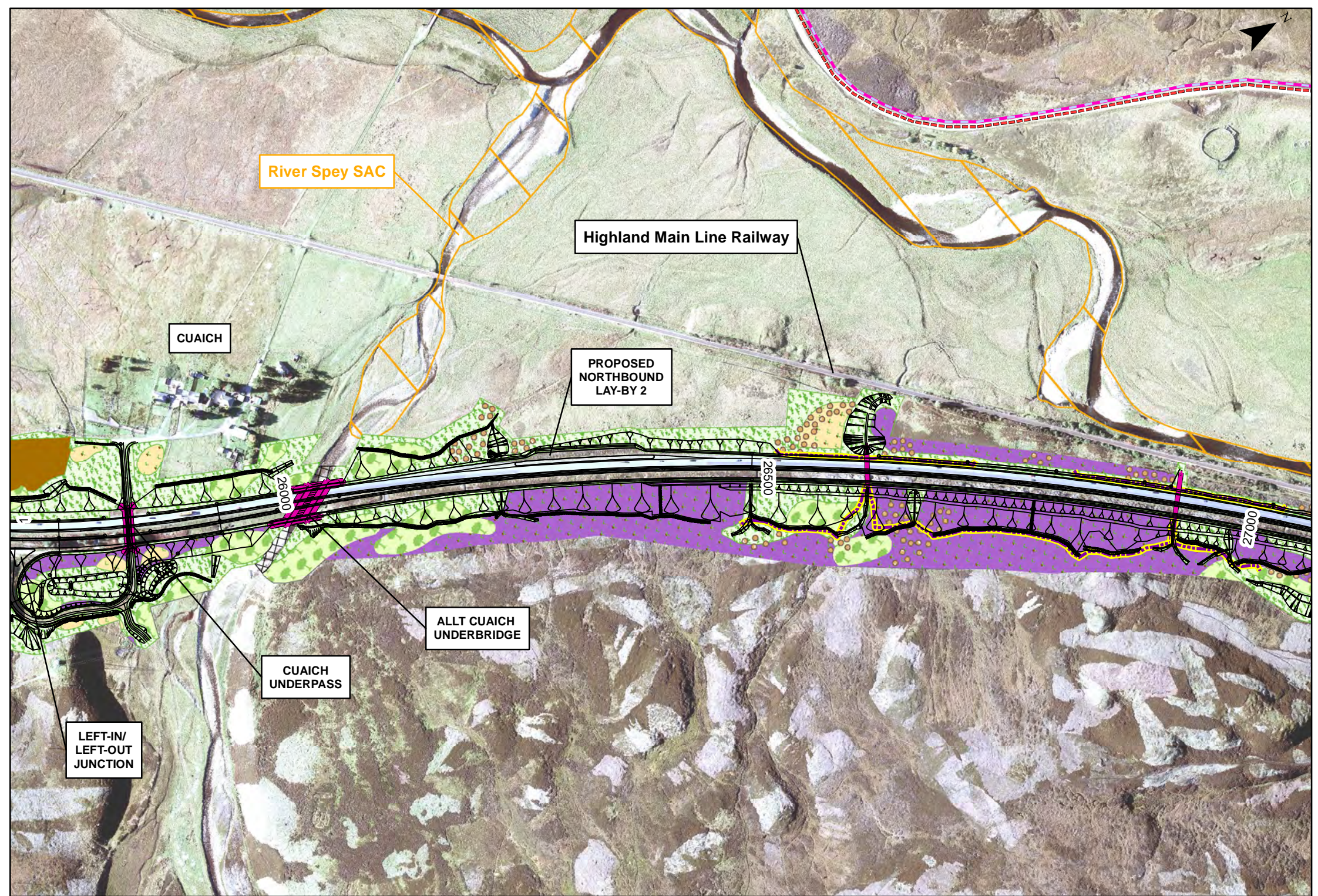
LEFT-IN/
LEFT-OUT
JUNCTION

LEFT-IN/
LEFT-OUT
JUNCTION

24500

25000

25500



River Spey SAC

Highland Main Line Railway

CUAICH

PROPOSED NORTHBOUND LAY-BY 2

26000

26500

27000

ALLT CUAICH UNDERBRIDGE

CUAICH UNDERPASS

LEFT-IN/ LEFT-OUT JUNCTION

River Spey SAC

Highland Main Line Railway

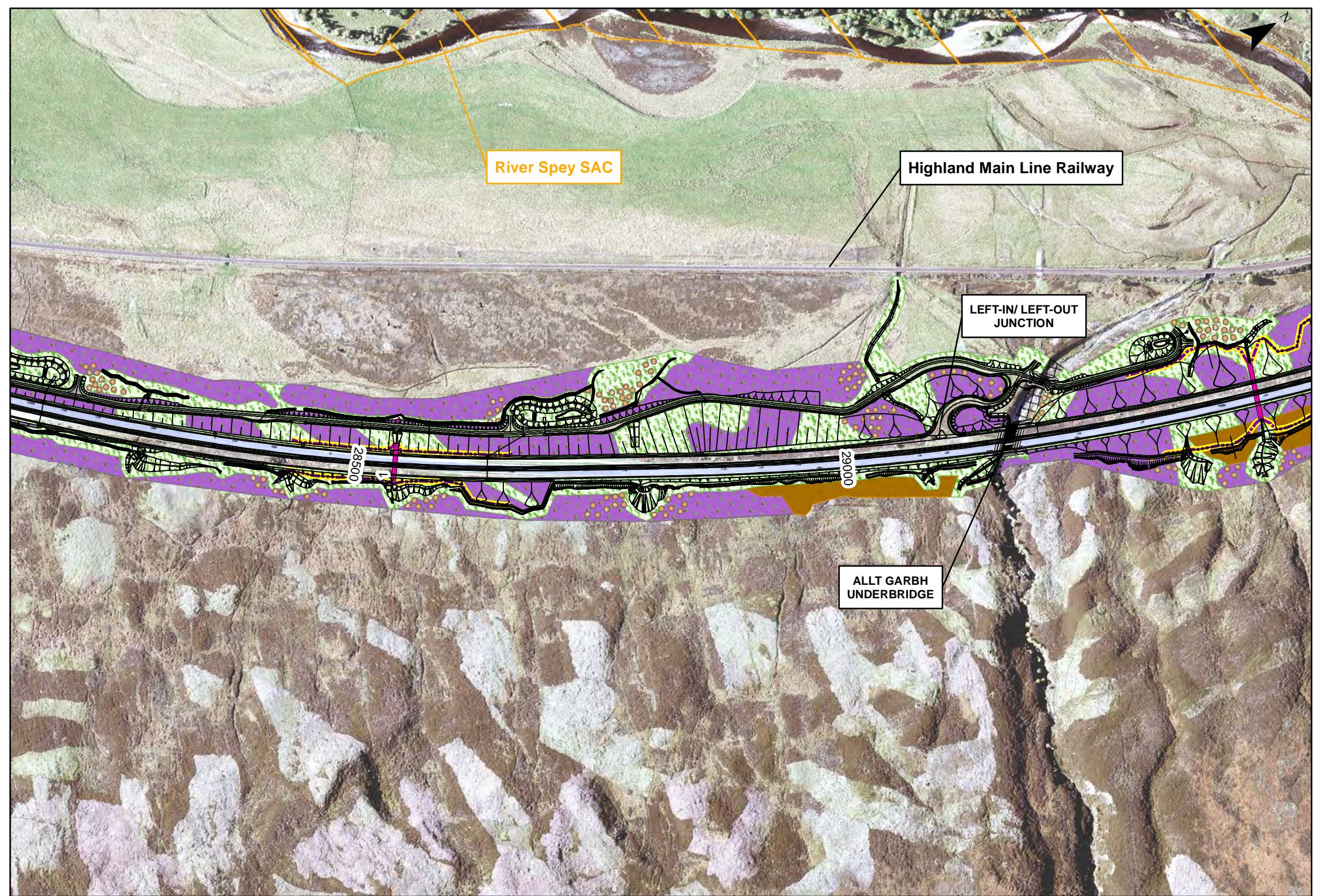
PROPOSED SOUTHBOUND LAY-BY 3

DALANNACH UNDERPASS

27000

27300

28000



River Spey SAC

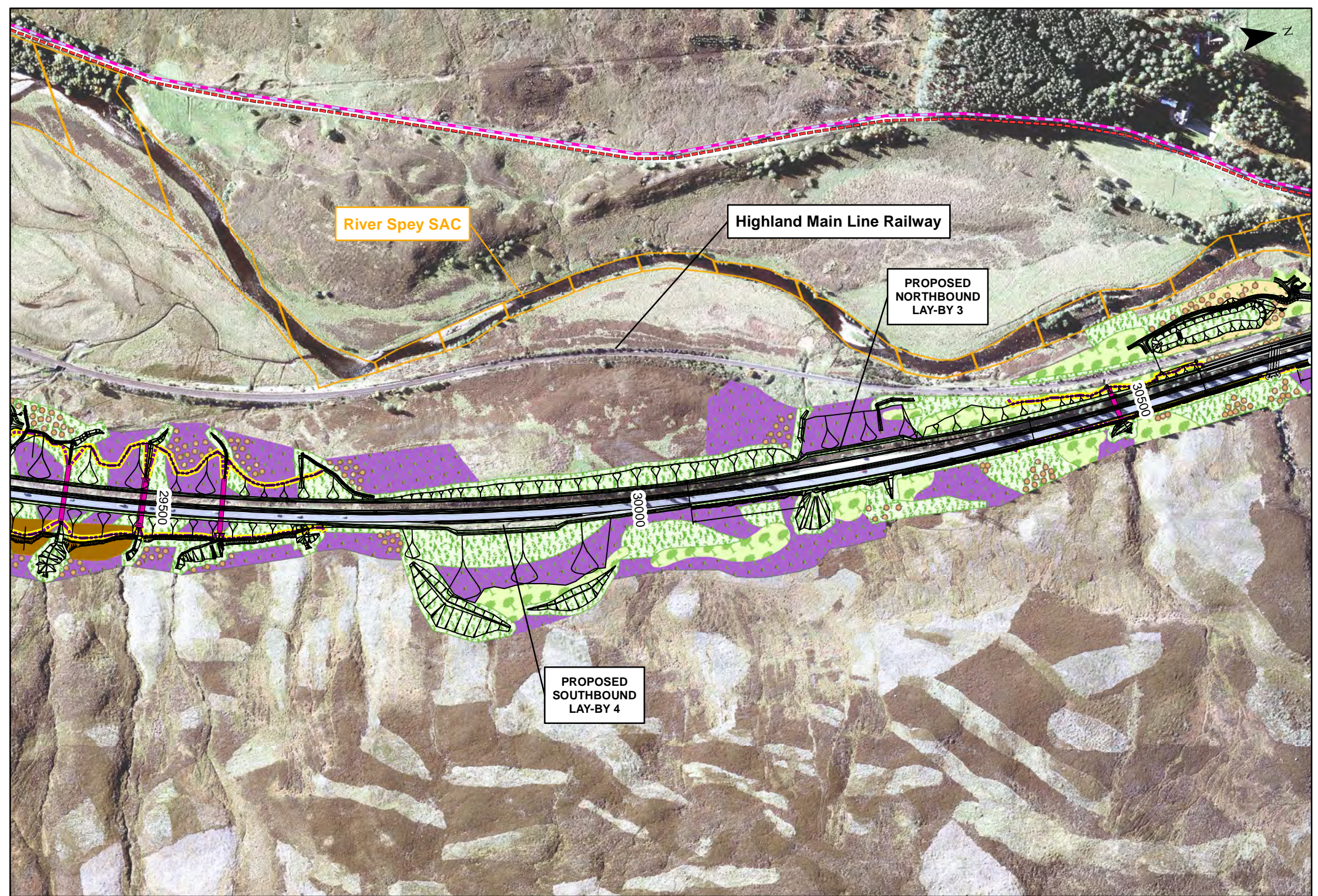
Highland Main Line Railway

LEFT-IN/ LEFT-OUT JUNCTION

ALLT GARBH UNDERBRIDGE

28500

29000

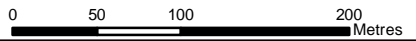


River Spey SAC

Highland Main Line Railway

PROPOSED NORTHBOUND LAY-BY 3

PROPOSED SOUTHBOUND LAY-BY 4





PROPOSED RETAINING WALL

River Spey SAC

Highland Main Line Railway

ALLT NA CEARDAICH
UNDERBRIDGE

30500

31000

31050



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