Aviemore to Carrbridge Non-Motorised User (NMU) Route Study – Route Options Appraisal

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1. Scheme Description

1.1. Project Background

1.1.1. In recognition of the Scottish Government's wider commitment to promote active travel in Scotland, Transport Scotland commissioned Atkins Mouchel Joint Venture (AMJV) in January 2019 to undertake a study into a potential shared use Non-Motorised User (NMU) route between the settlements of Aviemore and Carrbridge, refer to **Figure 1.1** for study area.

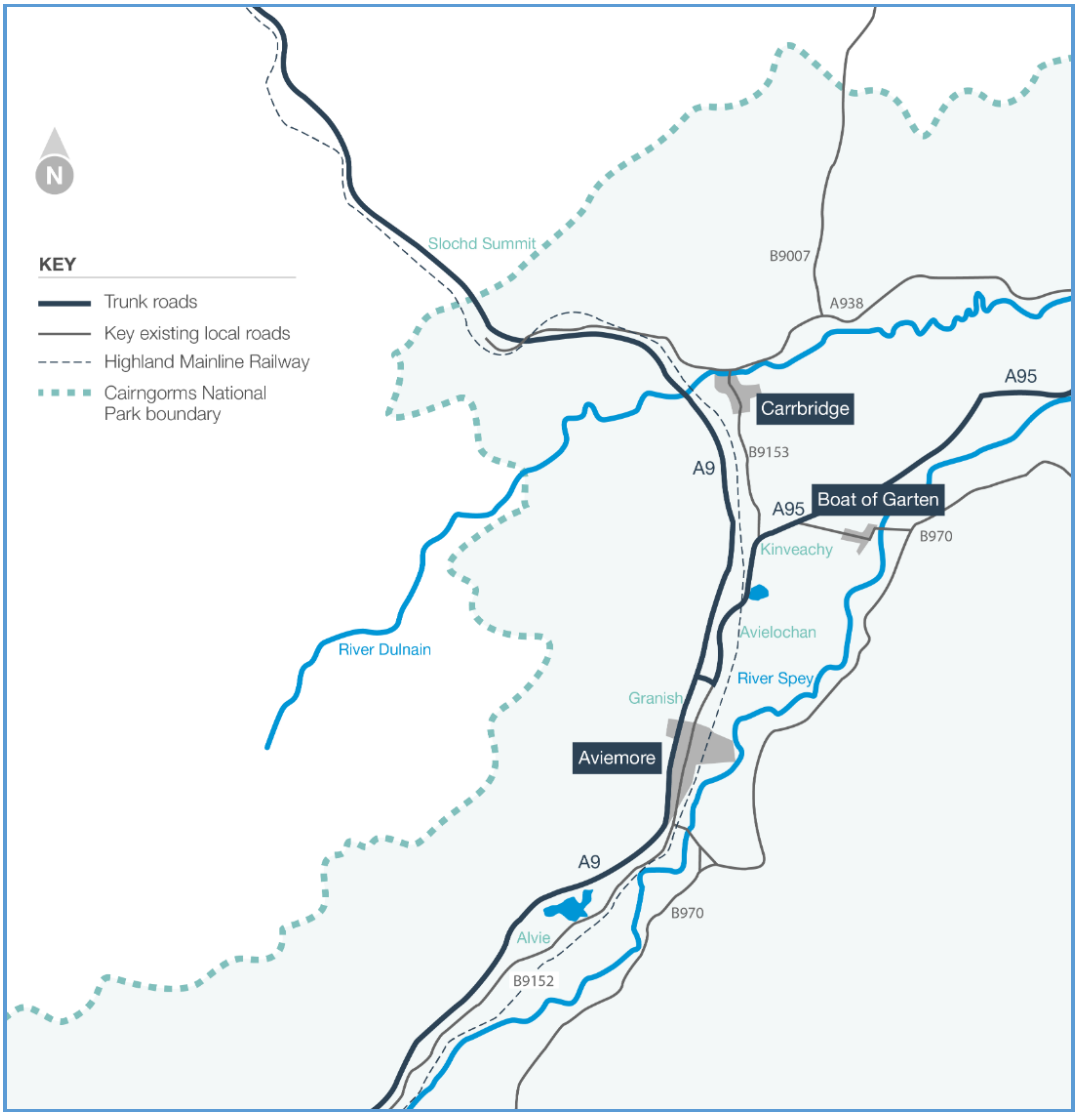

Figure 1-1 - Aviemore to Carrbridge NMU Route Study Area Map

1.1.2. Furthermore, the National Transport Strategy (NTS2), published in February 2020, sets out a vision for a sustainable, inclusive, safe and accessible transport system, helping to deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. It identifies four key priorities including improving health and wellbeing. Active travel is central to two of the three defined outcomes in relation to this priority which are: enabling people to make healthy travel choices (with active modes identified as being a preferred method of travel);

and helping make communities great places to live (i.e. cleaner, greener and sustainable places and networks which will encourage active modes).

1.1.3. The Cairngorms National Park Partnership Plan 2017-2022 which provides the strategic context for the Local Development Plan notes that 'the National Park has the potential to be a rural exemplar of active lifestyles and active travel'. It sets out an aspiration to deliver significant active travel improvements through design of places and transport infrastructure and identifies active travel improvements in Aviemore as a public sector investment priority.

1.1.4. The Cairngorms National Park Local Development Plan 2020 supports proposals to create, expand or enhance informal visitor infrastructure such as paths and strategic routes where they contribute to encouraging active travel and have no adverse environmental impacts (Policy 2: Supporting Economic Growth). The plan explicitly expresses support for the 'Active Aviemore' initiative, to improve active travel links and opportunities in and around the town. In addition, settlement objectives for Carrbridge include support for proposals for safe active travel around the village and beyond to Aviemore.

1.1.5. This study has been taken forward separately from the A9 Dualling Dalraddy to Slochd project (referred to in this report as the Dalraddy to Slochd project) and has been led and funded by Transport Scotland working closely with the key stakeholders, including Cairngorms National Park Authority (CNPA), The Highland Council (THC), Sustrans and Highlands and Islands Transport Partnership (HITRANS).

1.1.6. In addition to funding the study, Transport Scotland has advised that should any such NMU route successfully obtain all its statutory consents (including land acquisition) in time to be included in the construction contract for the Dalraddy to Slochd project, then Transport Scotland would make provision for its inclusion in the contract, effectively funding the project.

1.2. Baseline Assessment

1.2.1. The Baseline Assessment work was completed in September 2019 and was broadly undertaken in three main workstreams:

- Data gathering;
- Identification & sifting of initial corridor options; and,
- Stakeholder engagement & public consultation.

1.2.2. A total of ten initial corridors were identified within the study area which considered engineering and environmental opportunities and constraints. The initial corridors were assessed against a range of criteria including safety; coherence; directness; comfort; attractiveness; cultural heritage; ecology; landscape; visual; water environment; property and land take; and outline cost.

1.2.3. The Baseline Assessment confirmed Corridor 3 as the most direct connection between Aviemore and Carrbridge which also performed well against many of the other design principles within 'Cycling by Design' such as safety, comfort, cultural heritage, landscape & visual and water environment.

1.2.4. Corridor 6 also performed well offering good connectivity for leisure and recreational users with a favourable assessment against attractiveness, cultural heritage, landscape & visual and water environment.

1.2.5. The Baseline Assessment sifting process concluded that Corridors 3 and 6 (refer to **Figure 1.2**) should be taken forward into the Options Appraisal stage. A copy of the Baseline Assessment Report can be found on the Transport Scotland website.

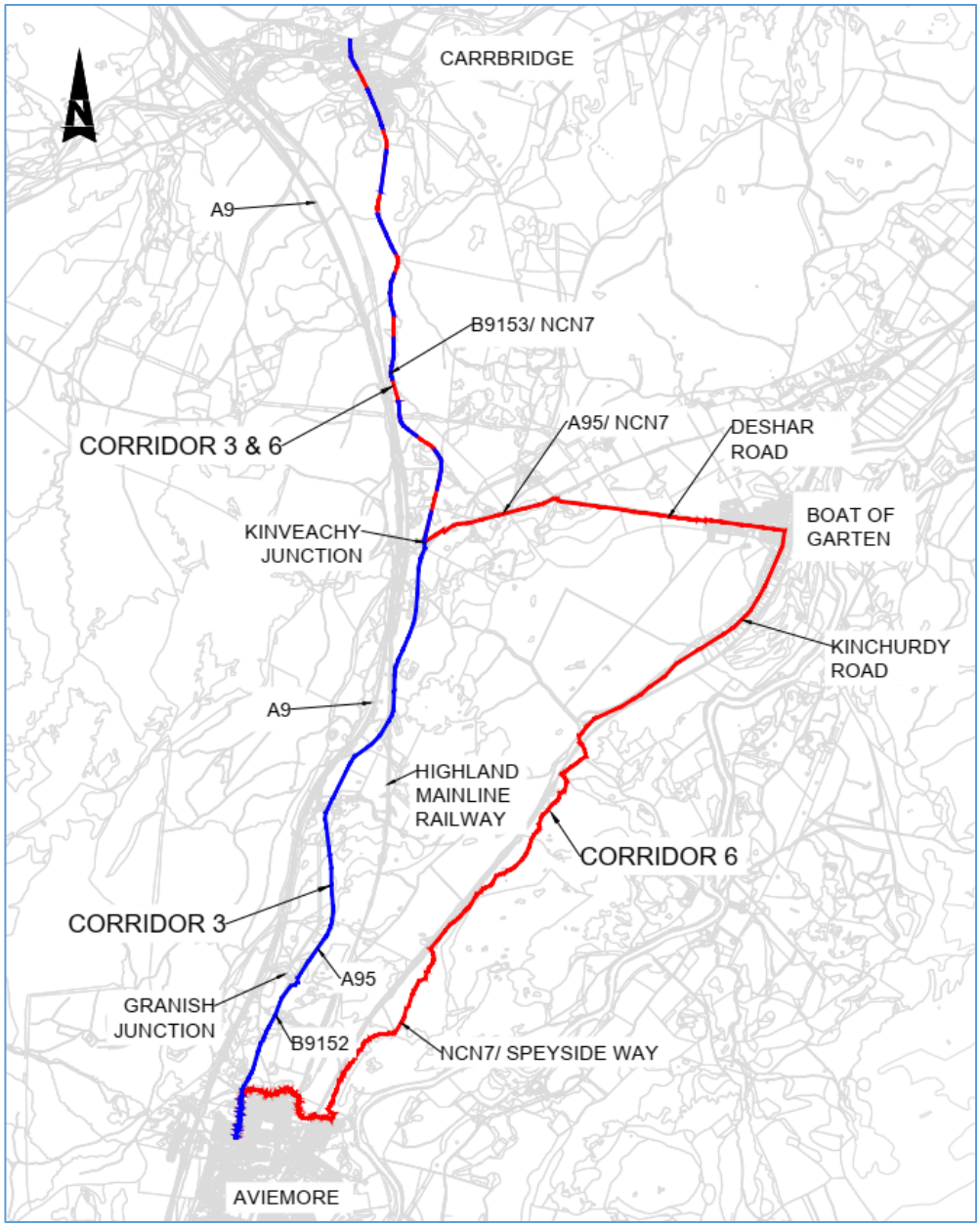

Figure 1-2 - Baseline Assessment Emerging Corridors Map

2. Route Options Appraisal Methodology

2.1. Appraisal Process

2.1.1. The main purpose of the Options Appraisal was to develop Corridors 3 and 6, the emerging corridors as identified in the Baseline Assessment Report, to a level of detail which enabled a robust appraisal to identify and justify a Preferred Route to be taken forward to the next stage of development. The Options Appraisal included the following activities:

- Establish design principles;
- Identify any corridor sub-sections;
- Route outline design and development strategy;
- Options Appraisal (Engineering and Environmental);
- Outline cost estimates;
- Stakeholder, landowner and public engagement; and,
- Identification of Preferred Route.

2.1.2. The flowchart in **Figure 2.1** outlines the key stages of the process that were implemented to identify the Preferred Route. An outline design of the Preferred Route will then be developed to a sufficient level of detail to form part of a Planning Application to secure the necessary statutory consents and any necessary land acquisition/agreements to permit the eventual construction of the scheme.

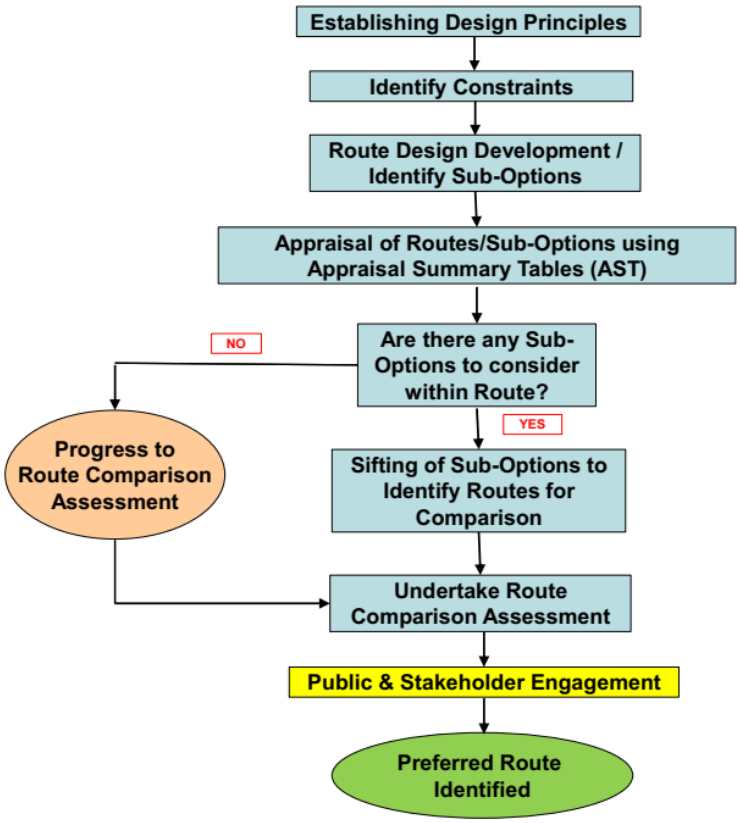

Figure 2-1 - Route Options Design Development & Appraisal Flow Chart

2.2. Establishing Design Principles

2.2.1. The first step in the Options Appraisal process was to establish a high-level set of design principles in relation to the development of the corridors which were recommended to be taken forward from the Baseline Assessment. The feedback received from the Baseline Assessment Public Exhibitions was considered as part of this process.

2.2.2. The high-level design principles, which are not exhaustive and are not intended to cover all aspects of the design, were confirmed as follows:

- Where practicable, minimise environmental impacts (e.g. loss of woodland);
- Where practicable, provide an attractive route for all user types;
- Where possible, minimise the number of public road crossings. Where road crossings are unavoidable, strive to provide controlled crossings or locate crossings where traffic speeds are likely to be reduced;
- Where possible, minimise encroachment on property frontages, and;
- Develop alignments to minimise the land footprint and earthworks volumes.

2.2.3. In addition to the design principles identified above, the corridors were developed in line with current design standards and guidance. The key reference documents included the following:

- Cycling by Design (Transport Scotland, 2011);
- Roads for All (Transport Scotland, 2013);
- Sustrans' Handbook for Cycle-Friendly Design (Sustrans, 2014); and,
- Design Manual for Roads and Bridges (DMRB).

2.2.4. The core design principles identified in 'Cycling by Design' were adopted to develop the route options. These principles helped to identify a preferred route which will seek to provide safe, coherent, direct, comfortable and attractive NMU links between the settlements of Aviemore and Carrbridge.

2.2.5. The design for each of the route options were developed in line with the geometric design guidance as set out in 'Cycling by Design' and took cognisance of the other documents listed above as appropriate. It is understood that a revision to 'Cycling by Design' is likely to be published in the near future; however, the exact timing of the publication is still to be confirmed. At the point of publication, AMJV will undertake a review of the revised document to consider any changes and potential implications for the current design.

2.3. Identifying Constraints and Route Options

2.3.1. Following the conclusion of the Baseline Assessment stage, the AMJV project team undertook site visits to understand the existing constraints and to develop a logical approach to identifying route options within Corridors 3 and 6. Refer to **Appendix A** for a copy of the engineering constraints drawings, with the environmental constraints outlined within the environmental drawings included in **Appendix B**.

2.3.2. The site visits helped to further enhance the Project Team's knowledge of the study area which had been developed throughout the Baseline Assessment and from reviewing the feedback received from the associated public exhibitions.

2.3.3. This Options Appraisal considered and assessed the identified options within the following main sections in the study area:

- Aviemore (northern extents of settlement);
- Aviemore (northern extents of settlement) to Kinveachy Junction; and,
- Kinveachy Junction to Carrbridge.

2.3.4. At the southern extent of the study area in Aviemore, the existing Core Path (LBS116) extending northwards from Dalfaber Drive was identified as the starting point for the route. The existing footway extends into the centre of Aviemore running parallel to Grampian Road (B9152). Improvement of this footway is identified in the Active Aviemore Feasibility Report (AECOM Limited 2018) as the preferred option for active travel enhancements in the northern part of Aviemore. It is proposed that pedestrians and wheelchair users will continue to walk or wheel into Aviemore along the existing footway and cyclists will continue to the town centre on-carriageway along Grampian Road.

2.3.5. At the northern end of the study area, the existing NCN7 enters Carrbridge on-carriageway (B9153). It is anticipated that the proposed NMU route will tie-in with an existing footway on entering the village. At this point pedestrians and wheelchair users will continue to walk or wheel along existing paths, with cyclists re-joining the carriageway through the village, i.e. along the existing NCN7 route.

2.3.6. For the purposes of the Options Appraisal methodology and reporting, Corridors 3 and 6 were re-named for simplicity. The revised corridor plan with the proposed route options and new naming convention is shown in **Figure 2.2**. The proposed section / sub-option breakdown reflects the changing nature of the surroundings, existing facilities, considers existing constraints and also identifies comparable sections for proposed alternative solutions. Refer to **Table 2.1** for a breakdown of the sub-option sections. The revised naming can be summarised as follows:

- Blue Route – previously part of Corridor 3;
- Purple Route – previously part of Corridor 6; and,
- Orange Route – sections previously common to both Corridor 3 and Corridor 6.

2.3.7. In addition to the start/end points defined in **paragraphs 2.3.4** and **2.3.5**, there are the following control points within the study area:

- The Blue route options are constrained at the Highland Mainline Railway Overbridge on the A95 in proximity to Avielochan Farm. The A95 verge widths under the railway crossing are insufficient to permit the required separation between live traffic and an NMU route, in line with design standards. It was therefore considered necessary to explore alternative route options to the west of the A95 and utilise the nearby existing railway underpass to the north of the overbridge;
- The Purple route follows the alignments of existing NMU facilities such as the Aviemore Orbital, the Speyside Way and the NCN7 and is also constrained through Boat of Garten. The available corridor widths along Kinchurdy Road and Deshar Road in Boat of Garten were considered too narrow to allow a segregated NMU route without encroaching into the frontages of multiple residential properties. An alternative off-carriageway solution was considered during the Baseline Assessment to the south-west of the village; however, this option would have significant environmental

impacts and was discounted. Following the existing NCN7 route through Boat of Garten, on Kinchurdy Road and Deshar Road, was considered the only feasible option at this location.

2.3.8. Refer to **Section 2.5** for a description of each of the sub-sections shown on **Figure 2.2**. This also highlights the opportunities and constraints specific to each sub-section. This includes identifying control points within each route which are common to all sub-options or in some cases where there is only one route available. The reasoning behind the selection of the sub-options is described in **Table 2.1**.

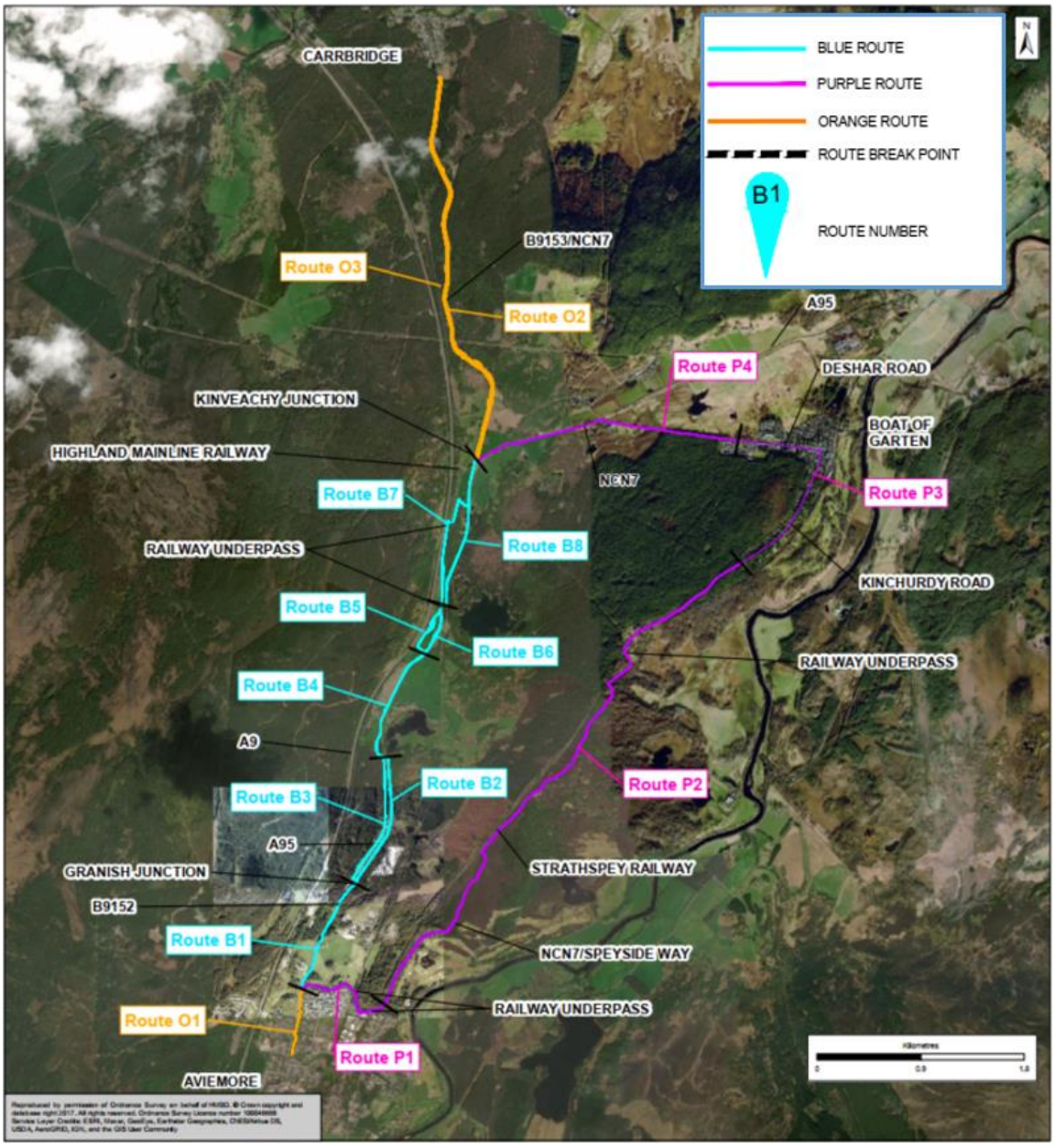

Figure 2-2 - Route Options

Sub-Option	Start	End	Description / Reason for sectional split
O1 (Length = 606m)	B9152 / Dalfaber Drive Junction*	Intersection between Core Path LBS30 (Aviemore Orbital) and Core Path LBS116 (Speyside Way)	Proposed off-carriageway route to the east of the B9152 utilising an existing path which is surfaced for part of its length. Note that subsequent sections of the route are also situated on the same side of the B9152 which will help to reduce the number of road crossings. An alternative option on the west side of the B9152 was discounted to reduce the number of road crossings. *Work is currently being undertaken to upgrade the B9152/Dalfaber Drive junction under the Active Aviemore initiative. This work is being taken forward by the Active Aviemore Steering Group which includes CNPA, Aviemore & Vicinity Community Council, THC, Hitrans, Sustrans and NHS Highlands. Further consultation necessary to ensure the ACNMU proposals align with any junction enhancements.
B1 (Length = 1048m)	Intersection between Core Path LBS30 (Aviemore Orbital) and Core Path LBS116 (Speyside Way)	Splitter island on the north side of the roundabout at Granish Junction at connection with A9/A95/B9152 forming part of the proposed Dalraddy to Slochd scheme	Proposed off-carriageway route to the east side of the B9152 utilising an existing path for over 50% of this section which also provides connectivity with other existing paths along this section. This sub-option extends beyond the end of the existing path remaining on the east side of the B9152 to avoid introducing a road crossing until reaching Granish Junction. At Granish Junction a roundabout is proposed as part of the A9 Dualling Dalraddy to Slochd scheme linking the A9/A95/B9152 routes. At this new roundabout location, it is anticipated that future vehicle speeds will be reduced on the approaches to the new roundabout. An alternative option to the west side of the B9152 was discounted in favour of the east side route to facilitate a safer crossing point, connect with other local paths and maximise the use of existing infrastructure.

Sub-Option	Start	End	Description / Reason for sectional split
B2 (Length = 1204m)	Splitter island on the north side of the proposed A9/A95/B9152 roundabout at Granish Junction which forms part of the proposed A9 Dualling Dalraddy to Slochd scheme	Existing access track immediately to the south of Avie Lochan pond	Proposed off-carriageway route running parallel to the east of the A95.
B3 (Length = 1207m)	Splitter island at the north side of the proposed A9/A95/B9152 roundabout at Granish Junction which forms part of the A9 Dualling Dalraddy to Slochd scheme	Existing access track immediately to the south of Avie Lochan Pond	Proposed off-carriageway route running parallel to the west of the A95.
B4 (Length = 1063m)	Existing access track immediately to the south of Avie Lochan Pond	250m (approx.) south of the A95 Highland Mainline Railway overbridge.	Proposed off-carriageway route running predominately parallel to the west of the A95. An alternative route to the east side of the A95 was discounted due to the proximity of the small loch at Avielochan which would require significant engineering works to facilitate a route adjacent to the small loch. From an environmental standpoint, it was desirable to avoid construction phase potential impacts upon water quality in Avie Lochan. In addition, the constrained area of land between the Avie Lochan and the A95 is restrictive in terms of the provision of flood risk mitigation.
B5	250m (approx.)	Existing railway underpass	Proposed off-carriageway route to the west of the A95 utilising a SuDS

Sub-Option	Start	End	Description / Reason for sectional split
(Length = 512m)	south of the A95 Highland Mainline Railway overbridge.	approx. 150m north of the A95 Highland Mainline Railway overbridge	access track forming part of the proposed Dalraddy to Slochd scheme. No alternative sub-option was considered to the east of the A95 at this location to keep road crossings to a minimum and due to lack of space for an NMU provision alongside the west of the A95 at the railway underbridge.
B6 (Length = 461m)	250m (approx.) south of the A95 Highland Mainline Railway overbridge.	Existing railway underpass approx. 150m north of the A95 Highland Mainline Railway overbridge	Proposed off-carriageway route running parallel to the west side of the A95 along the top of the cutting slope. No alternative option considered immediately to the east or west of the A95 i.e. back of verge, as per reasons stated for B5.
B7 (Length = 1495m)	Existing railway underpass approx. 150m north of the A95 Highland Mainline Railway overbridge	Kinveachy Junction	Proposed off-carriageway route running initially (approx. 700m) to the west of the Highland Mainline Railway utilising an existing railway underpass to take the route back to the A95 via an access track to a point approx. 350m south of Kinveachy Junction. The route then continues along the west side of the A95 until Kinveachy Junction. No alternative option on the east side of the A95 was considered to keep road crossings to a minimum and due to the potential significant impacts to property frontages.
B8 (Length = 1305m)	Existing railway underpass approx. 150m north of the A95 Highland Mainline Railway overbridge	Kinveachy Junction	Proposed off-carriageway route running parallel to the west side of the A95 with potential impacts on frontages of 3 properties. No alternative option considered to the east of the A95 as per reason stated for B7.
P1 (Length = 1000m)	Intersection between Core Path LBS30 (Aviemore Orbital) and Core Path	Intersection between Core Path LBS116 (Speyside Way) / Aviemore Orbital and	Proposed off-carriageway route following the alignment of existing NMU facilities (Aviemore Orbital / Speyside Way).

Sub-Option	Start	End	Description / Reason for sectional split
	LBS116 (Speyside Way)	NCN7. Approx. 100m south east of the Strathspey Railway underpass.	
P2 (Length = 5360m)	Intersection between Core Path LBS116 (Speyside Way) / Aviemore Orbital and NCN7. Approx.100m south east of the Strathspey Railway underpass.	Southern extents of Boat of Garten (Kinchurdy Road/NCN7)	Proposed off-carriageway route to the east of the B9152 following the alignment of existing NMU facilities (NCN7 / Speyside Way)
P3 (Length = 2000m)	Southern extents of Boat of Garten (Kinchurdy Road/NCN7)	North-western extents of Boat of Garten (Deshar Road/NCN7)	Proposed on-carriageway route as per the existing NCN7 facility. Narrow, lightly trafficked road where there are significant constraints associated with providing an off-carriageway solution due to potential impacts on property frontages. Alternative off-carriageway route to the south-west of the village discounted at Baseline Assessment stage due to the associated environmental impacts.
P4 (Length = 2360m)	North-western extents of Boat of Garten (Deshar Road/NCN7)	Kinveachy Junction	Proposed off-carriageway route utilising existing facility for this entire section. Route runs parallel to the south side of Deshar Road and then on the south-east side of the A95 until an existing crossing approximately 150m east of Kinveachy Junction where the route continues to the junction on the west side of the A95. No alternative options considered along this section to maximise use of the existing NCN7 facility with widening to achieve proposed cross section requirements.

Sub-Option	Start	End	Description / Reason for sectional split
O2 (Length = 3560m)	Kinveachy Junction	Carrbridge	Proposed off-carriageway route running parallel to the east side of the B9153. Potential impact on property frontage.
O3 (Length = 3536m)	Kinveachy Junction	Carrbridge	Proposed off-carriageway route running parallel to the west side of the B9153.

Table 2-1 - Summary of Route Sub-Option Breakdown

2.4. Route Design Development Strategy

2.4.1. The routes as outlined in **Figure 2.2** were developed to align with the design principles as described in **Section 2.2** and appropriate design standards / guidance.

2.4.2. The NMU design was modelled using engineering software to create a 3-D design model. It should be noted that no topographical survey has been undertaken specific to each of the route options at this stage. The preliminary design has been prepared based on Digital Terrain Model (DTM) obtained by Transport Scotland. The DTM includes points with height data on a 5m grid which is considered an appropriate level of detail for options appraisal purposes. It will be necessary to undertake a topographical survey along the corridor of the Preferred Route once identified. This will then enable the design to be developed at the next stage to a level of detail sufficient for planning and any other required statutory consents and also to accurately identify the land necessary to construct the scheme including sufficient working areas for construction.

2.4.3. The NMU links have been developed as shared use facilities to achieve a typical width of 3.0m where possible. The setback distance for routes immediately adjacent to live carriageways is 1.5m (minimum). This setback dimension is in line with the desirable minimum setback as specified in 'Cycling by Design' for routes adjacent to carriageways with a speed limit exceeding 40mph. Where existing constraints dictate, it has been necessary to reduce both the NMU width locally. Notwithstanding this, the route has been developed to take advantage of any opportunities to maximise the setback wherever possible. This approach will also help to minimise potential conflict with existing verge infrastructure such as drainage, road restraint systems, traffic signs, utilities etc. It was considered that a shared use facility of this cross section is appropriate for the rural nature and likely usage of the route.

2.4.4. In terms of surfacing, it is anticipated that a bound bituminous material will be specified. A bituminous surface was assumed for all options considered in this report and was applied to the identified preferred option. This type of surface will ensure that a smooth, slip resistant surface is provided in line with the guidance provided in ''Roads for All' and 'Cycling by Design'. It was considered that this type of surface is fit for purpose in terms of the expected level of usage and has

considered the feedback received from the Baseline Assessment public exhibitions. The bound surface will apply to all new and widened sections of the proposed NMU route.

2.4.5. Where an option follows the line of an existing unbound route for purposes of this comparative assessment it was assumed that these will be widened, re-profiled and treated with bituminous overlay. It was however recognised that bituminous overlays may not be appropriate at all locations and the specification of surface finish will be this will be considered at the next stage. The specification of the bound surface will be confirmed at detailed design stage.

2.4.6. Where an option follows the line of an existing bound route for the purposes of this comparative assessment it has been assumed that these will be widened by laying sub-base adjacent to the existing route, re-profiling (as required) and then overlaying the existing bound surface with a 60mm bituminous layer which will also extend across the widened foundation.

2.5. Route Option Descriptions

2.5.1. This section of the report will describe the key features of each of the routes, i.e. the Blue, Purple and Orange routes, within the 3 geographical sections as described in **paragraph 2.3.3**.

2.5.2. The following Route Option descriptions should be read in conjunction with the Route Option Plans in **Appendix C**.

Aviemore (northern extents of settlement)

2.5.3. The southern extent of the study area lies within the settlement of Aviemore. The extent of this section is identified as the Orange Route (O1) as shown on **Figure 2.2** and on the Route Option Plans in **Appendix C**.

Orange Route

2.5.4. Orange Route O1 was the only option considered along this section. This was primarily driven by the opportunity to make best use of existing infrastructure and also to maximise connectivity with other NMU routes within Aviemore and along this section.

2.5.5. Orange Route O1 seeks to widen a short section of the 'Speyside Way' (Core Path (LBS116)) from Dalfaber Drive for approximately 600m heading in a northerly direction, in the main, parallel to the B9152. This existing path is relatively flat, and it is anticipated that widening of between 1.0 and 2.0m will be necessary to achieve the desired width for the NMU link.

2.5.6. The existing path is set back from the B9152 and has a bound surface from Dalfaber Drive to Dougal Drive (approx.215m). The remaining 400m or thereby of the existing path, within the extents of Orange Route O1, is unbound.

2.5.7. As noted above, Core Path (LBS116) forms part of The Speyside Way and the Orange Route O1 will maintain this link and provide an upgrade to this existing route along this length.

Aviemore to Kinveachy Junction

2.5.8. The central section of the study area extends from Aviemore, i.e. northern extent of Orange Route O1, to Kinveachy Junction. There are two alternative routes within this section which are identified as the Purple Route and the Blue Route as shown on **Figure 2.2** and on the Route Option Plans in **Appendix C**.

Purple Route

2.5.9. The Purple Route takes advantage of existing NMU links already in place, namely the Aviemore Orbital, Speyside Way and part of the National Cycle Network (NCN7). The route has varying characteristics and has therefore been categorised by 4 sections (P1, P2, P3 and P4). There were no feasible sub-options considered within the Purple Route in order to maximise the use of existing infrastructure and to minimise the environmental impacts.

2.5.10. Purple Route P1 seeks to widen an existing Core Path (LBS116) which also forms part of The Speyside Way. The route is off-carriageway and heads off in an easterly direction from the northern end of Orange Route O1.

2.5.11. The existing path is in rural surroundings with an unbound surface. It is anticipated that widening of between 1.0 and 2.0m will be necessary. The route also contains sections of sub-standard vertical geometry. In addition, the path is currently constrained by two narrow (approx.1.8 to 2.5m wide) underpasses, Highland Mainline Railway and Strathspey Railway, as well as crossing a narrow (approx.1.5m to 2.0m wide) wooden bridge over an existing watercourse.

2.5.12. The works along this section may require extending existing culverts or providing a small timber bridge crossing for 3no. watercourses along the length of Purple Route P1.

2.5.13. This 1km section of The Speyside Way also forms part of the Aviemore Orbital (Core Path (LBS30)).

2.5.14. Purple Route P2 continues along The Speyside Way (Core Path (LBS116)) which is also part of the National Cycle Network (NCN7). The route is approximately 5.5km in length and commences at the intersection between The Speyside Way and Aviemore Orbital (Core Path (LBS30)) to the north east of Aviemore.

2.5.15. The existing path is approximately 3m wide and is unbound. It is proposed to provide a bound surface to improve comfort for all users. Purple Route P2 will follow the existing horizontal and vertical alignment until the existing path meets Kinchurdy Road at the southern extent of Boat of Garten. The existing alignment contains localised sections of sub-standard geometry.

2.5.16. Most of the route lies to the east of the Strathspey Railway; however, there is a section approximately 1.3km to the south of Boat of Garten which runs along the west side of the railway.

2.5.17. It is understood that Purple Route P2 contains a short length to the south of Boat of Garten which may have shared access with 3rd party users for farming and logging operations. It was noted that there were a number of potholes along this section which will need to be repaired in advance of re-profiling and widening of

the existing path before overlaying with a bituminous surface. In terms of the potential shared access, there will be a need for further consultation to clarify the nature and extent of these activities. This will then require careful consideration at detailed design stage.

2.5.18. Purple Route P3 commences at the south end of Kinchurdy Road and continues on-carriageway through Boat of Garten along Deshar Road heading towards the western extent of the village. Purple Route P3 is approximately 2km in length and follows the route of the existing NCN7.

2.5.19. The proposal is to retain this section as an on-carriageway route for both lengths, i.e. Kinchurdy Road and Deshar Road. The former is a narrow, lightly trafficked lane with Deshar Road being a 2-lane unclassified road. Pedestrians, wheelchair users and cyclists will be expected to share the road space along Kinchurdy Road with vehicles; however, pedestrians/wheelchair users will utilise the existing footways on Deshar Road with cyclists using the existing carriageway. As noted in **Table 2.1**, no alternative off carriageway options were considered along Kinchurdy Road and Deshar Road to minimise impacts on property frontage and width restrictions within the existing corridors.

2.5.20. Purple Route P3 is relatively straight, except for a left-hand turn at Kinchurdy Roads junction with Deshar Road and is also relatively flat.

2.5.21. Purple Route P4 takes the opportunity to utilise an existing path (part of NCN7) as the route leaves Boat of Garten heading in a westerly direction towards the A95. The overall length of this section is approximately 2.4km and forms part of NCN7. No alternative option on the north side of Deshar Road was considered to minimise the need for additional crossing points.

2.5.22. The route is remote from Deshar Road with the existing path approximately 2.0m wide with 1.5m verges. Purple Route P4 will include widening to achieve a 3m wide NMU route where possible which may lead to localised areas of earthworks.

2.5.23. Purple Route P4 runs alongside Deshar Road for approximately 1.2km before joining the A95 where it continues off-carriageway for a further 1.2km in a south-westerly direction. It then crosses the A95 and continues off-carriageway to Kinveachy Junction. Similar to the adjoining section to the south, no alternatives on the north side of the A95 were considered for the same reasons.

2.5.24. The NCN7 route crosses an existing structure adjacent to the A95 with its junction with Deshar Road. It will be necessary to widen or replace this structure or seek approvals for a reduced NMU cross section over the existing structure.

Blue Route

2.5.25. The Blue Route predominately follows the alignment of the existing Grampian Road (B9152) and the A95. The route will largely be delivered through new construction except for widening existing routes towards the south end of the route. There are locations where more than one route option were identified which were subject to a sifting exercise to allow the Blue Route to be compared against the Purple Route for this section of the study area.

2.5.26. Blue Route B1 commences at the northern end of Orange Route O1 at a point where the Aviemore Orbital (Core Path LBS116)) interfaces with the Speyside Way (Core Path (LBS30)). The route is approximately 1.1km in length and heads north towards Granish, running parallel to the east side of the B9152.

2.5.27. The existing unbound surface is approximately 1.5 metres wide and separated from the B9152 by a soft verge. It is proposed to widen the existing path by approximately 1.5m to form a new 3m wide facility with a bound surface. There will also be a 1.5m (min) set back between the path and the carriageway in line with current design standards.

2.5.28. Blue Route B1 extends a further 500m approx. from a point where the existing path diverges in a south-easterly direction away from the B9152. This section of the proposed NMU route will be of new construction and continues to a point that coincides with the splitter island on the north side of the proposed roundabout at Granish Junction at connection with A9/A95/B9152 which forms part of the proposed Dalraddy to Slochd scheme. This will permit a safe potential crossing point where traffic speeds are likely to be slower to connect to a northbound route option to the west of the A95. There were no alternative route options considered along the length of Blue Route B1 due to the need for providing continuity with the adjoining Orange Route O1, maximising the use of an existing facility and identifying a safe crossing point.

2.5.29. There will be the potential need for a structure in the form of a walkway immediately to the north of the recycling centre/quarry access on the east side of the B9152. This is potentially required to take the route to the east of a swale which forms part of the proposed Dalraddy to Slochd scheme at this location. This will be developed further at detailed design with scope to mitigate the need for this structure.

2.5.30. Blue Route B2 continues from the northern end of Blue Route B1 on the east side of the A95. Blue Route B2 is approximately 1.2km in length and runs parallel to the east of the A95 north of the existing trunk road junction at Granish.

2.5.31. Blue Route B2 is a new construction section with a 3m wide bound surface, 1m verges and segregated from live traffic by a 1.5m wide (minimum) set back. It will be necessary to undertake tree clearance along this section to accommodate the required earthworks footprint.

2.5.32. The alignment of Blue Route B2 will be designed to navigate around the existing infrastructure in the eastern verge of the A95 such as the Vehicle Restraints System (VRS) and a Variable Message Sign (VMS). An existing layby approximately halfway between Granish and Avielochan will also require the route to align further east from the carriageway.

2.5.33. Blue Route B2 crosses an existing access track towards the northern extent of this section and stops short of the small loch at Avielochan. The proximity of the main body of Avie Lochan to the edge of the southbound carriageway of the A95 (within 5m at the closest points) presents greater construction challenges. For example, in relation to the limited space available for inclusion of embedded flood risk mitigation. This contrasts with the northbound carriageway side of the A95 (upstream from Avielochan) which is less constrained and where there would be

the opportunity to incorporate measures to mitigate potential flood risk on the A95. On this basis, extension of Blue Route B2 along the east side of the A95 adjacent to Avielochan has been ruled out and a crossing to the west side of the A95 is therefore necessary. The potential crossing point is on a relatively straight section of the A95 with the exact location to be determined at detailed design. The location will be governed by stopping sight distance requirements should the Blue Route B2 be identified as forming part of the Preferred Route. An underpass and an overbridge at this location was considered, but discounted due to the need for significant engineering works and the resultant environmental impact. It would be necessary to provide a ramped access on the east side of the A95 which would require significant earthworks and would have considerable impact on existing trees. There would also be complication in terms of maintaining access to the property 'Eilan' and the existing forestry access. In addition, the proximity of the pond and the anticipated levels of the underpass would result in difficulties in providing suitable drainage measures with no option for a gravity outfall.

2.5.34. Blue Route B3 provides an alternative to Blue Route B2 and is also approximately 1.2km in length. This route continues from the northern end of Option B1; however, is on the west side of the A95. It will therefore be necessary to introduce a crossing at this location. The crossing is anticipated to utilise the splitter island (or a suitable location immediately to the north of the roundabout) on the northern side of the proposed roundabout at Granish Junction at connection with A9/A95/B9152 which forms part of the Dalraddy to Slochd scheme; however, the exact location will be confirmed at detailed design and will be governed by stopping sight distance requirements should Blue Route B3 be identified as forming part of the Preferred Route.

2.5.35. Blue Route B3 consists of new construction 3m wide bound surface with 1m verges and segregated from live traffic by a 1.5m wide (minimum) set back. This offset has been increased to position the NMU route at the toe of existing embankments to minimise the earthworks and associated impacts.

2.5.36. Blue Route B4 is approximately 1.1km in length of new construction 3m wide bound surface with 1m verges and segregated from live traffic by a 1.5m wide (minimum) set back. There are no alternative route options at this location due to the close proximity of the small loch at Avielochan to the east of the A95. In order to position the NMU route along the east side of the A95, it would be necessary to undertake significant engineering works to either provide a walkway extending from the back of the verge or extend the verge and embankment. This would have significant cost and environmental impacts.

2.5.37. The initial 300m or thereby of Blue Route B4 diverges away from the A95 to negotiate around an existing pond (formerly part of Avie Lochan but now severed by the A95) and out of the Potentially Vulnerable Area[1] 05/11. Thereafter the route runs parallel to the A95.

2.5.38. It is anticipated that Blue Route B4 will necessitate a significant cutting immediately to the south of the Avielochan Farm access track and the NMU route will cross over 3no access tracks within the extents of the route. The cutting at Avielochan farm has been minimised with the setback for the NMU route being set

[1] Potentially Vulnerable Areas (PVAs) are areas where the potential impact of flooding is most significant. PVAs have been identified by SEPA based on the National Flood Risk Assessment (NFRA).

at the minimum of 1.5m from the edge of the A95. It is anticipated further measures could be reviewed at detailed design to further minimise the extent of this cutting.

2.5.39. Blue Route B5 is approximately 530m in length and utilises a proposed access track/NMU route that forms part of the Dalraddy to Slochd project. The proposed access track/NMU route lies within land included in the statutory procedures for that project. This proposed cross section of the Dalraddy to Slochd access track/NMU route is 3m wide and at present it has been agreed with the landowner that this shall be unbound. Further consultation would be required with the existing landowner in relation to the surfacing to ensure consistency throughout the NMU route. For the purposes of cost estimating, it has been assumed that the Landowner will be amenable to changing this to a bound construction.

2.5.40. This route contains short lengths of sub-standard horizontal and vertical geometry (up to 9% gradient for a short section). The absolute maximum gradient permissible is 7% in Cycling by Design. Note that for gradients greater than 5%, landings and measures to control speeds would need to be considered. The maximum gradient stated in 'Roads for All' is 8% in extreme circumstances. It would therefore be necessary to apply for a departure from standards if Blue Route B5 was to be taken forward as part of the Preferred Route.

2.5.41. Blue Route B5 terminates at the existing railway underpass to the north east of the Highland Mainline railway overbridge.

2.5.42. Blue Route B6 provides an alternative route to Blue Route B5. This route is approximately 460m in length and includes new construction of 3m wide bound surface, with 1m verges and a 1.5m minimum separation from live traffic.

2.5.43. Due to the restricted existing verge width where the A95 passes under the skewed Highland Mainline Railway bridge, there is insufficient width available between the abutment wall and the edge of carriageway to safely accommodate the necessary NMU cross section. Consequently, Blue Route B6 follows the top of the railway cutting and continues through farmland passing close to a proposed Dalraddy to Slochd SuDS basin until it meets an existing railway underpass to the north east of the Highland Mainline Railway overbridge.

2.5.44. Blue Route B7 is approximately 1.5km in length, continues northwards and is situated between the embankments of the Dalraddy to Slochd project and the Highland Mainline Railway. It is recognised that Blue Route B7 follows in part a new means of access within the Dalraddy to Slochd scheme statutory procedures for which there is an agreement in place with the landowner that sections of this will be unbound. For the purposes of cost estimating, it has been assumed that the Landowner will be amenable to changing this entire option to a bound construction. Blue Route B7 contains two steep sections (totally at approx. 40m) with gradients between 16% and 23% which would be difficult to design out due to the constrained nature of this corridor. It would therefore be necessary to apply for a departure from standards if Blue Route B7 was to be taken forward as part of the Preferred Route.

2.5.45. The available land for Blue Route B7 is extremely constrained and will present a challenge at detailed design; however, it is anticipated that could be overcome by

reviewing the steepness of the cutting slope and adjusting the NMU cross section to mitigate.

2.5.46. Blue Route B7 utilises an existing railway underpass which incorporates a watercourse channel within its structural body. Once on the east side of the railway, the route utilises an existing track before continuing through farmland, adjacent to the A95, to Kinveachy Junction.

2.5.47. An alternative to Blue Route B7, is Blue Route B8 which utilises the 3.0m wide existing underpass at the end of Blue Routes B5/B6 to take the NMU route back to a more direct route, running parallel with the A95. Blue Route B8 is approximately 1.3km in length and is a new construction with a 3m wide bound surface, with 1m verges and a 1.5m minimum separation from live traffic.

2.5.48. The route, which runs alongside the western verge of the A95, has several pinch-points along its length which may require a reduction in the cross section. In particular, it may be necessary to reduce the width of the NMU for a short length to accommodate the constraints associated with the residential properties Birch View, Taighban and The Knoll.

Kinveachy Junction to Carrbridge

2.5.49. The northern section of the study area extends from Kinveachy Junction to the settlement of Carrbridge. The main options considered within this section run parallel to the B9153, with the existing NCN7 being an on-carriageway facility along this length. Both the Purple and Blue routes start/terminate at Kinveachy Junction, with proposal to the north of this point being common to both routes.

Orange Route

2.5.50. The first of the main options is Orange Route O2 which commences at Kinveachy Junction. The start of Orange Route O2 coincides with the northern extents of the Blue Route B7/B8 and Purple Route P4.

2.5.51. Orange Route O2 is approximately 3.5km in length and is new construction with a 3m wide bound surface, 1m wide verges and a 1.5m wide minimum separation from live traffic. The proposed route runs parallel to the B9153 on the east side of the existing carriageway. If Blue Route emerges as the Preferred Route, then it will be necessary to introduce a crossing of the B9153 to tie-in to the southern end of Orange Route O2.

2.5.52. Orange Route O2 will require extensive tree felling along its length and there is also a significant impact on property frontage at Docharn Lodge.

2.5.53. Orange Route O2 will cross 2 no. known watercourses along its length, with one culvert extension and another requiring a small bridge over the Feith Mhor watercourse.

2.5.54. Orange Route O2 terminates at the southern extent of Carrbridge where there is currently a new housing development under construction to the east of the B9153. At this point, pedestrians and wheelchair users will continue to walk or wheel, using the adjoining footway with cyclists re-joining the existing on-carriageway NCN7 through Carrbridge. It is anticipated that the route will terminate at the proposed

re-located position for the 30mph speed limit signs with the exact location and arrangements confirmed at detailed design.

2.5.55. The other main option is Orange Route O3 which is broadly similar to Orange Route O2; however, it is situated on the west side of the B9153. Orange Route O3 is approximately 3.5km in length with the same proposed cross section as Orange Route O2. If Purple Route P4 emerges as the Preferred Route, then it will be necessary to introduce a crossing of the B9153 to tie-in to the southern end of Orange Route O3 and a minor crossing of an access road to Kinveachy Lodge which is also an existing local NMU route.

2.5.56. There are potential conflicts with utilities including high voltage power cables in the western verge of the B9153. It may be possible to mitigate the impact on the power cables through obtaining more detailed information and aligning the route to avoid or minimise disruption to the existing infrastructure. Similar to Orange Route O2, there will be a need for significant tree clearance along this route.

2.5.57. Orange Route O3 also crosses 2no. known watercourses and the solutions described for Orange Route O2 will also apply. Approximately 550m north of the B9153 junction with the A95, the Orange Route O3 diverts around the western edge of a small pond. The origins of the pond are not known, although its eastern edge appears to have been modified where it abuts the northbound lane of the B9153. Further investigations may be required as part of the detailed design phase if this option is preferred.

2.5.58. Both Orange Route O2 and O3 will present opportunities to connect into existing woodland NMU facilities on the southern approach to the village on both sides of the B9153. These existing routes are Core Path (LBS53) and Core Path (LBS56).

3. Outline Cost Estimates

3.1. Overview

3.1.1. Indicative costs were prepared for each of the route options to inform the Initial Sifting, the Options Comparison and ultimately the Preferred Route.

3.2. Basis of Outline Cost Estimates

3.2.1. The approach adopted was to establish a cost per km for each of the proposed design scenarios, i.e. new construction off-carriageway, upgrading/widening of existing facilities and utilising existing on-carriageway sections. The cost per km was applied to the appropriate lengths and supplemented by corridor specific items. For example, one off cost allowances added for items such as provision of structures, relocation of traffic signs, adjustments to road restraint systems, provision of road crossings, etc.

3.2.2. Cost estimates are based on data from Spon's Civil Engineering and Highway Works Price Book 2017, adjusted for inflation (Q1, 2020) and supplemented by information received from specialist suppliers, applied in accordance with The Method of Measurement for Highway Works.

3.2.3. Once the costings for the works elements were finalised, an uplift allowance of 15% has been made for Preliminaries and 5% for Public Utility diversion or protection works (which are as yet undefined).

3.2.4. The preliminary design and cost estimates have been prepared based on the following:

- The preliminary design has been prepared based on GIS based Digital Terrain Model, as on-site topographical survey has not yet been carried out;
- No ground investigation has been undertaken for the study. Assumptions made for the earthworks and sub grade are therefore subject to adjustment; and,
- No allowance has been made for land costs and fees.

3.2.5. The indicative costs estimates have been prepared for comparison purposes at this stage, with no allowance for risk. There will be a fully costed Risk & Opportunities Register developed after the Preferred Route has been identified.

3.2.6. The indicative cost estimates at this stage are high level with potential for significant variation. It has therefore been considered appropriate to apply an Optimism Bias of 25% in accordance with the HM Treasury Green Book to reflect the status of the study. This approach is in line with the application of Optimism Bias on recent A9 road schemes at a similar stage in the planning / design development process.

3.3. Outline Cost Estimates

3.3.1. The outline cost estimates for each of the Route Options presented in the Individual Appraisal Summary Tables (refer to **Appendix G**) are outlined below in **Table 4.1**.

Route Option	Length of Section (approx.)	Outline Cost Estimate (£s)
Orange Route O1	0.6km	175,850
Blue Route B1	1.1km	316,850
Blue Route B2	1.2km	618,800
Blue Route B3	1.2km	517,650
Blue Route B4	1.1km	584,750
Blue Route B5	0.5km	72,900
Blue Route B6	0.5km	142,100
Blue Route B7	1.4km	616,650
Blue Route B8	1.3km	604,650
Purple Route P1	1.0km	348,750
Purple Route P2	5.4km	1,353,150
Purple Route P3	2.0km	10,000
Purple Route P4	2.4km	811,200
Orange Route O2	3.5km	2,077,150
Orange Route O3	3.5km	2,024,200

Table 3-1 – Outline Cost Estimate

3.3.2. Refer to **Appendix F** for further details in relation to the outline cost estimates.

3.3.3. Refer to **paragraph 5.2.18** for details of the Outline Cost Estimates for the identified Blue and Purple Routes only for options appraisal purposes.

3.4. Summary

3.4.1. The outline cost estimates prepared at this stage will be for the sole purpose of informing the Options Appraisal study.

3.4.2. There will be a need to revisit the cost estimates on completion of the outline design and in advance of the submitting a planning application.

4. Initial Sifting of Sub-Options

4.1. Overview

4.1.1. The purpose of this chapter is to report the key differentiators between the pairs of options associated with each of the routes. This sifting exercise follows on from the design development reported in **Chapter 2** and draws on the information collated in the Individual Appraisal Summary Tables included in **Appendix G**.

4.1.2. An assessment was undertaken considering engineering, environmental and cost. The following paragraphs describe the criteria adopted and the findings of the initial sifting exercise is reported in this chapter and outlined in the 'Initial Sifting' table included in **Appendix H**.

4.1.3. As stated in **paragraph 2.2.4**, the 5 core design principles identified in 'Cycling by Design' were adopted in developing the route options. These same principles have been adopted to inform the basis of the engineering appraisal of each sub-option and were supplemented by additional criteria set out in 'Cycling by Design' for conducting project appraisals. The engineering criteria used to undertake the initial sifting is summarised as follows:

- Safety;
- Coherence;
- Directness;
- Comfort (including Design Compliance);
- Attractiveness;
- Accessibility and Socio-economic Inclusion;
- Implementability (includes land use and private assets); and,
- Utilities.

4.1.4. The engineering criteria listed in **paragraph 4.1.3.** is not exhaustive; however, it is considered proportionate to assesses the options to identify a preferred route. A definition for each of the headings is provided in **Appendix G**.

4.1.5. The environmental appraisal was predominantly qualitative and covers the following topics:

- ecology & nature conservation;
- landscape;
- visual;
- cultural heritage; and,
- water environment (including flood risk).

4.1.6. Topics scoped out of the appraisal included:

- noise and vibration (during construction effects will be low level, temporary and localised; during operation there will be negligible effect);
- air quality (during construction there may be localised, low level and temporary dust generation; during operation there will be negligible operational effect);
- land use (on the basis that this is to be covered under the integration theme in the engineering appraisal); and,

- geology and soils (on the basis that extensive excavations will not be required).

4.1.7. Commensurate with the stage of design development, the environmental appraisal comprises a high-level desk-based study with data derived primarily from online publicly available sources. The environmental topics listed in **paragraph 4.1.5** are based on DMRB Volume 11 topics which were screened for relevance to the project and environmental context.

4.1.8. No on-site field surveys were carried out as part of this study. Taking a proportionate approach to environmental assessment, field surveys will only be undertaken for the purposes of environment impact assessment of the Preferred Route. The scope and level of detail of environmental assessment which will form part of the application for planning permission will be informed by consultation with the planning authority and other stakeholders.

4.1.9. The sifting exercise has been undertaken in order to remove from further consideration options where impacts are either significant or where there are key differentiators between similar options being considered. If one of two options had higher associated impacts than another similar option, consideration was given to sift out the option with higher impacts. The sifting was based on the information available at the time. Any new information relating to these sifting options that become available through stakeholder engagement, landowner engagement or public consultation was considered before concluding the identification of a preferred route.

4.2. Engineering Appraisal

Blue Route B2 vs B3

Sifting Assessment Criteria	B2	B3
Safety	Least Favourable	Favourable
Coherence	Least Favourable	Favourable
Directness	Neutral	Neutral
Attractiveness	Neutral	Neutral
Accessibility and Socio-economic Inclusion	Neutral	Neutral
Implementability	Neutral	Neutral
Design Compliance	Neutral	Neutral
Utilities	Least Favourable	Favourable
Ecology and Nature Conservation	Favourable	Least Favourable
Landscape	Neutral	Neutral

Sifting Assessment Criteria	B2	B3
Visual	Neutral	Neutral
Cultural Heritage	Neutral	Neutral
Water Environment	Neutral	Neutral
Outline Cost	Least favourable	Favourable
Public Exhibition Feedback	Neutral	Neutral
Landowner Information	Neutral	Neutral

Table 4-1 – B2 v B3 Summary Sifting Table

4.2.1. The route progressing for further appraisal is Route B3.

Safety

4.2.2. Blue Route B2 and B3 both require crossings of the A95; however, Blue Route B3 will utilise a crossing location immediately to the north of the roundabout at Granish Junction at connection with A9/A95/B9152, which forms part of the proposed Dalraddy to Slochd project, where speeds will be reduced. It was therefore concluded that in terms of relative option impact for 'safety', Blue Route B3 is 'favourable' in this instance.

Coherence

4.2.3. Blue Route B2 and B3 both link to the south which provide connections to the Aviemore Orbital Path, The Speyside Way and NCN7. Blue Route B2 provides a better connection given that the route remains on the same side of the A95/B9152 as the preceding proposed sections, i.e. Blue Route B1 and Orange Route O1. However, Blue Route B3 provides good connectivity with existing NMU routes to the west of the A9 via the link road at the proposed Granish Junction at connection with A9/A95/B9152 included in the Dalraddy to Slochd project which would not be available in Blue Route B2 unless an additional road crossing was introduced. It was therefore concluded that in terms of relative option impact for 'coherence', Blue Route B3 is 'favourable' in this instance.

Directness

4.2.4. The most direct line from Aviemore to Carrbridge is one that closely follows the existing road corridors; the B9152, A95 and the B9153. By ensuring that there are no significant detours from these existing corridors, users will benefit from a shorter route and consequently reduced journey times. Both Blue Routes B2 and B3 run parallel to the B9152, it was therefore concluded that the relative option impact for 'directness' is 'neutral' in this instance.

Attractiveness

4.2.5. Blue Route B2 and B3 run parallel to the A95 to the east and west side respectively. The NMU route will typically run parallel to the A95 with a minimum offset of 1.5m from the edge of the road; however, wherever possible this will be

increased to minimise earthworks and to maximise user comfort. Due to the similarities of both these route options, it was concluded that the relative option impact for 'attractiveness' is 'neutral' in this instance.

Accessibility and Socio-economic Inclusion

4.2.6. It is considered that the provision of an overall NMU link between Aviemore and Carrbridge along with connectivity with existing routes along this corridor with increase community accessibility for local trips and there is potential for local businesses to benefit from such a facility; however, in terms of differentiating between Blue Routes B2 and B3 there is little to separate the two options. It was therefore concluded that the relative option impact for 'accessibility and socio-economic inclusion' is 'neutral' in this instance.

Implementability (including land use and private assets)

4.2.7. There is very little to separate the options in terms of potential land impact or private assets impacts with no significant impacts on private property frontages along this section. Both options also have a minor interface with land included in the Compulsory Purchase Orders for the Dalraddy to Slochd scheme; however, this is over a relatively small area near the proposed Granish Junction at connection with A9/A95/B9152. It was therefore concluded that the relative option impact for 'implementability', is 'neutral' in this instance.

Design Compliance

4.2.8. There are no significant design compliance issues in relation to Blue Route B2 and B3 associated with horizontal or vertical geometry. It was therefore concluded that the relative option impact for 'design compliance' in these instances is 'neutral'.

Utilities

4.2.9. The existing utility records from the Dalraddy to Slochd project were used to inform this sifting exercise. It recognised that further information would be required to fully determine the potential impact to existing utility apparatus. The full extent of protection and/or diversionary works will be determined as the design develops for the Preferred Route.

4.2.10. From the information available, there are no utility clashes for Blue Route B3, whereas our records indicate that Blue Route B2 may encounter existing BT and Scottish Power apparatus within the eastern verge of the A95. It is worth noting that although this potential clash has been identified, it may be possible to align the route to avoid these constraints at detailed design should land be available. It was therefore concluded that in terms of relative option impact for 'utilities', Blue Route B3 is 'favourable' in this instance based on the level of information available.

Blue Route B5 vs B6

Sifting Assessment Criteria	B5	B6
Safety	Least favourable	Favourable
Coherence	Neutral	Neutral
Directness	Least favourable	Favourable
Attractiveness	Least favourable	Favourable
Accessibility and Socio-economic Inclusion	Neutral	Neutral
Implementability	Neutral	Neutral
Design Compliance	Least favourable	Favourable
Utilities	Neutral	Neutral
Ecology and Nature Conservation (biodiversity)	Neutral	Neutral
Landscape	Neutral	Neutral
Visual	Neutral	Neutral
Cultural Heritage	Neutral	Neutral
Water Environment	Neutral	Neutral
Outline Cost	Favourable	Least favourable
Public Exhibition Feedback	Least favourable	Favourable
Landowner Information	Least favourable	Favourable

Table 4-2 – B5 v B6 Summary Sifting Table

4.2.11. The route progressing for further appraisal is Route B6.

Safety

4.2.12. Blue Routes B5 and B6 provide alternative alignments to a route running parallel to the A95 which is constrained by a lack of available verge width under the Highland Mainline Railway overbridge. Both alternative routes navigate around the proposed SuDS pond included in the Dalraddy to Slochd project. The potential conflict between NMU users and the movement of cattle or other farming activities along Blue Route B5 presents safety concerns. It was therefore concluded that in terms of relative option impact for 'safety', Blue Route B6 is 'favourable' in this instance.

Coherence

4.2.13. Blue Routes B5 and B6 both sit within a relatively short section of the overall route with no connection opportunities with existing NMU facilities over this length. It was therefore concluded that the relative option impact for 'coherence' is 'neutral' in this instance.

Directness

4.2.14. Blue Route B5 and B6 are relatively short and take the route to the west side of the Highland Mainline Railway overbridge. Blue Route B5 makes use of the combined NMU facility / maintenance track incorporated as part of the Dalraddy to Slochd project. The alignment for Blue Route B6 is far more direct than that of Blue Route B5. It was therefore concluded that in terms of relative option impact for 'directness', Blue Route B6 is 'favourable' in this instance.

Attractiveness

4.2.15. Blue Route B6 is likely to be considered a more attractive route than Blue Route B5 for commuters as it is set back from the A95 and provides a more direct route than Blue Route B5. Also, Blue Route B5 may be considered less attractive with tight horizontal radii and steeper gradients. It was therefore concluded that in terms of relative option impact for 'attractiveness', Blue Route B6 is 'favourable' in this instance.

Accessibility and Socio-economic Inclusion

4.2.16. Blue Routes B5 and B6 sit within a relatively short section of the overall route with no properties or businesses within the extents of these sections. It was therefore considered that the relative option impact for 'accessibility and socio-economic impact inclusion' is 'neutral in this instance.

Implementability (including land use and private assets)

4.2.17. Blue Route B5 proposes to utilise a track included as part of the Dalraddy to Slochd Project and as such the land is already included within the associated Compulsory Purchase Order (CPO) for that project. Blue Route B6 passes through farmland and the landowner has supported the tenant farmers preference for this option as Blue Route B5 would result in conflicts with farming activities and in particular the movement of farm stock. It was therefore concluded that the relative option impact for 'implementability', is 'neutral' in this instance.

Design Compliance

4.2.18. Blue Route B5 contains design non-compliances in terms of both horizontal and vertical. The route has steep gradients up to 9%. As noted in **paragraph 2.5.39**, the absolute maximum gradient is 7% in Cycling by Design. Note that for gradients greater than 5%, landings and measures to control speeds would need to be considered. The maximum gradient stated in 'Roads for All' is 8% in extreme circumstances. In contrast, Blue Route B6 is relatively flat with no horizontal geometry concerns. It was therefore concluded that in terms of relative option impact for 'design compliance', Blue Route B6 is 'favourable' in this instance.

Utilities

4.2.19. Both Blue Routes B5 and B6 potential conflict with an underground low power cable which may require protection or diversion. Further information to be obtained as part of the design development of the identified preferred route. However, based on the level of information available at this stage, it was therefore concluded that in terms of the relative option impact for 'utilities' is 'neutral' in this instance.

Blue Route B7 vs B8

Sifting Assessment Criteria	B7	B8
Safety	Least Favourable	Favourable
Coherence	Least favourable	Favourable
Directness	Least favourable	Favourable
Attractiveness	Neutral	Neutral
Accessibility and Socio-economic Inclusion	Least favourable	Favourable
Implementability	Least Favourable	Favourable
Design Compliance	Least favourable	Favourable
Utilities	Favourable	Least favourable
Ecology and Nature Conservation (biodiversity)	Favourable	Least favourable
Landscape	Favourable	Least favourable
Visual	Favourable	Least favourable
Cultural Heritage	Neutral	Neutral
Water Environment	Neutral	Neutral
Outline Cost	Neutral	Neutral
Public Exhibition Feedback	Least favourable	Favourable
Landowner Information	Least favourable	Favourable

Table 4-3 – B7 v B8 Summary Sifting Table

4.2.20. The route progressing for further appraisal is Route B8.

Safety

4.2.21. Blue Route B8 runs parallel to the adjacent A95, it therefore could be perceived as more dangerous than Blue Route B7 which stays behind the railway embankment for most of the route and remote from live traffic for a large percentage of the route. In addition, Blue Route B8 will also need to pass the frontage of existing properties which may lead to a reduced cross section or set back at this location. However, the reduced set back would be in line with current design standards. Due to its remoteness from the A95, it was concluded that in terms of relative option impact for 'safety', Blue Route B7 is 'favourable' in this instance.

Coherence

4.2.22. There is very little to separate Blue Route B7 and B8 in terms of coherence; however, Blue Route B8 will provide access to the overall route for residents at properties adjacent to the route. It was therefore concluded that in terms of relative option impact for 'coherence', Blue Route B8 is 'favourable' in this instance.

Directness

4.2.23. Blue Route B7 and B8 provide a link between the preceding section, i.e. Blue Route B5/B6 and Kinveachy Junction. Blue Route B8 closely follows the alignment of the A95 and is therefore more direct than Blue Route B7. It was therefore concluded that in terms of relative option impact for 'directness', Blue Route B8 is 'favourable' in this instance.

Attractiveness

4.2.24. Blue Route B8 is on a more direct line to Kinveachy Junction than Blue Route B7 which involves a slight detour alongside the Highland Mainline Railway and the A9. This detour may be considered an attractive setting for some users; however, this results in additional distance and perhaps perceived personal security concerns. It was therefore concluded that the relative option impact for 'attractiveness', is 'neutral' in this instance.

Accessibility and Socio-economic Inclusion

4.2.25. Blue Route B8 runs parallel to the A95 and passes immediately in front of a number of residential properties which would provide easy access to the route for those residents. Blue Route B7 is less direct and doesn't have the same ease of access for nearby residents. It was therefore concluded that in terms of relative option impact for 'accessibility and socio-economic inclusion', Blue Route B8 is 'favourable' in this instance.

Implementability (including land use and private assets)

4.2.26. Blue Route B7 appears to present significant challenges in terms of the land made available for a route with constraints on both sides as a result of the proximity of the railway embankment and the Dalraddy to Slochd works. However, Blue Route B7 does include a portion of land included in the Compulsory Purchase Order for the Dalraddy to Slochd scheme which potentially gives greater certainty in terms

of implementability for this length of the route. However, Blue Route B7 does pass through an underpass owned by Network Rail which would require consultation to agree consents for utilising this as part of the route. Blue Route B7 is also not supported by the landowner/tenant due to the potential conflicts between NMU users and the movement of farm stock. Blue Route B8 also has constraints due to the proximity of residential property frontages reducing the available space for the route; however, it is anticipated that by providing a minimum set back of 1.5m from the edge of the A95 and reducing the NMU cross section locally this impact could be minimised. On balance, it was concluded that in terms of relative option impact for 'implementability', Blue Route B8 is 'favourable' in this instance.

Design Compliance

4.2.27. Blue Route B7 has gradients between 16% and 23% over two discrete sections (40m or thereabouts in total) of this route coupled with non-compliant in horizontal geometry. The potential to design out these steep sections are restricted by the narrow corridor that is available through this section. Blue Route B8 has no design compliance concerns in terms of the horizontal and vertical geometry; however, the cross section may have to be reduced due to conflict near the property boundary wall on the west of the A95 carriageway. The excessive gradients evidenced in Blue Route B7 would be a significant departure from the recognised standards and could restrict usage for a range of different types of users. For this reason, it was considered to be a differentiator between the options, and it is therefore concluded that in terms of relative option impact for 'design compliance', Blue Route B8 is 'favourable' in this instance.

Utilities

4.2.28. Blue Route B7 and B8 both appear to have potential clashes which may require either a re-alignment of the NMU facility or the protection / diversion of the existing utility apparatus. Blue Route B7 appears to have less impact on existing apparatus with a potential clash with a Scottish Water main, whereas Blue Route B8 potentially clashes with a BT cable and a Scottish Water main. Both route options have an overhead power line in the vicinity which is not thought to be impacted by the works. It was therefore concluded that in terms of relative option impact for 'utilities', Blue Route B7 is 'favourable' in this instance based on the level of information available.

Orange Route O2 vs O3

Sifting Assessment Criteria	O2	O3
Safety	Neutral	Neutral
Coherence	Neutral	Neutral
Directness	Neutral	Neutral
Attractiveness	Neutral	Neutral
Accessibility and Socio-economic Inclusion	Neutral	Neutral
Implementability	Least favourable	Favourable

Sifting Assessment Criteria	O2	O2
Design Compliance	Neutral	Neutral
Utilities	Favourable	Least favourable
Ecology and Nature Conservation (biodiversity)	Neutral	Neutral
Landscape	Neutral	Neutral
Visual	Least favourable	Favourable
Cultural Heritage	Neutral	Neutral
Water Environment	Neutral	Neutral
Outline Cost	Neutral	Neutral
Public Exhibition Feedback	Least favourable	Favourable
Landowner Information	Least favourable	Favourable

Table 4-4 – Summary Sifting Table

4.2.29. The route progressing for further appraisal is Route O3.

Safety

4.2.30. Orange Routes O2 and O3 run parallel to the B9153 on the east and west side respectively. Based on the level of information available, it is anticipated that both these routes will be identical in terms of the proposed cross section and in practical offsets from the edge of the B9153. The need for crossings at either end of both route options are likely to have similar safety considerations / implications and will be influenced by the emerging preferred option to the south of Kinveachy Junction. It was therefore considered that the relative option impact for 'safety' is 'neutral' to inform this stage of the assessment.

Coherence

4.2.31. Both Orange Routes O2 and O3 provide similar opportunities to connect with existing NMU routes along this section. Both route options provide connection opportunities for alternative access routes into Carrbridge from the south through woodland. It was therefore considered that the relative option impact for 'coherence' is 'neutral'.

Directness

4.2.32. Both Orange Routes O2 and O3 run parallel and adjacent to the B9153 for approximately 3.5km. It was therefore considered that the relative option impact for 'directness' is 'neutral' in this instance.

Attractiveness

4.2.33. Both Orange Routes O2 and O3 run parallel and adjacent to the B9153 for approximately 3.5km within a similar or identical environment. It was therefore considered that the relative option impact for 'attractiveness' is 'neutral' in this instance.

Accessibility and Socio-economic Inclusion

4.2.34. Both Orange Routes O2 and O3 run parallel and adjacent to the B9153 for approximately 3.5km. There is very little to separate these options in terms of the relative option impact for 'accessibility and socio-economic inclusion', it was therefore considered 'neutral' in this instance.

Implementability (including land use and private assets)

4.2.35. In terms of implementability, the main difference between the Orange Routes O2 and O3 relate to constraints associated with an existing property on the east side of the B9153 approximately 600m north of Kinveachy Junction. Orange Route O2 is situated in the verge to the east of the B9153 at this location with the property boundary fence at the back of a narrow verge (approximately 1.5m). The B9153 is in slight cutting as it passes this property and it is considered that there would be a significant impact on the property frontage to provide even a reduced width NMU route through this section. Option O2 also affects the driveway to Docharn Lodge at the same location. It was therefore considered in terms of relative option impact for 'Implementability' that Orange Route O3 is 'favourable' in this instance.

Design Compliance

4.2.36. Both Orange Routes O2 and O3 run parallel and adjacent to the B9153 for approximately 3.5km. Based on the level of information available, it was considered that the relative option impact for 'design compliance' is 'neutral' in this instance.

Utilities

4.2.37. Based on the level of information available, there is potentially more significant impacts on utilities associated with Orange Route O3. However, it is possible that this impact could be mitigated by careful alignment design. As such, it was considered that in terms of relative option impact for 'utilities' is Blue Route O2 is 'favourable' in this instance.

4.3. Environmental Appraisal

Ecology & Nature Conservation

Methods

Desk Study

4.3.1. The ecological options appraisal was based on data which has been gathered through a desk study exercise. At this stage of route option selection, no site based ecological surveys have been undertaken. This section sets out the approach to the desk study exercise.

4.3.2. The geographical area for obtaining ecological data through desk studies was determined using best practice guidance and professional judgement. Baseline data has been gathered from a range of sources through data requests and using online resources as outlined below. This included data gathering in relation to statutory and non-statutory designated sites and protected and priority species[2]. The study areas used for the data gathering are detailed in **Table 4.5**. For species records collected, only those within 10 years of the data collection date have been considered within the appraisal.

4.3.3. The following online resources were accessed:

- Scottish Natural Heritage (SNH) Sitelink[3;]
- Scottish Natural Heritage's Ancient Woodland Inventory (AWI)[4];
- Joint Nature Conservation Committee (JNCC) website[5];
- Woodland Trust Ancient Trees Inventory[6];
- Ordnance survey (OS) maps[7]; and,
- MAGIC website[8].

4.3.4. The following organisations were contacted to request relevant desk study data, including details of non-statutory designated sites:

- North East Scotland Biological Record Centre (NESBReC);
- Royal Society for the Protection of Birds (RSPB) – specifically contacted for capercaillie records; and,
- Ordnance Survey maps and the Grid Reference Finder website (https://gridreferencefinder.com/) were used to identify the presence of waterbodies within 500m of the proposed route options, in order to establish if the land within and immediately surrounding the Application Site could be used as terrestrial habitat for great crested newt. This species typically use suitable terrestrial habitat up to 500m from a breeding pond. However, there is a notable decrease in great crested newt abundance beyond a distance of 250m from a breeding pond.

2 These are defined in CIEEM (2017) Guidelines for Preliminary Ecological Appraisal 2nd Edition
3 https://sitelink.nature.scot/home
4 https://data.gov.uk/dataset/c2f57ed9-5601-4864-af5f-a6e73e977f54/ancient-woodland-inventory-scotland
5 https://jncc.gov.uk/
6 https://ati.woodlandtrust.org.uk/
7 https://osmaps.ordnancesurvey.co.uk/
8 https://magic.defra.gov.uk/

Data Type	Study areas (dist. from route Options)
Statutory designated sites	2km
Non-statutory designated sites	2km
Ancient woodland	2km
Veteran trees	1km
Protected and priority species (including capercaillie)	2km
Watercourses	1km
Waterbodies	500m

Table 4-5 – Data search areas

4.3.5. A review of policies relevant to the ecological differentiating factors was undertaken as detailed in the appraisal sections below. A full review of national and local planning policy relevant to the Proposed route options will be undertaken at the assessment stage.

4.3.6. Relevant legislation and policy considered as part of this appraisal relating to designated sites and protected species is provided in **Appendix D**.

Appraisal Method

4.3.7. The appraisal considered locations of statutory and non-statutory designated sites and important habitats including ancient woodland within the study areas. From a species perspective the appraisal focused on capercaillie as a differentiating factor between options due to the importance and sensitivity of this species. The Survey Area supports capercaillie populations within the Abernethy Forest and Cairngorms area. These populations form the Scottish stronghold of this species which is rare in other parts of the Highlands, and absent from all other areas of the UK. It is a key species of conservation value, and a qualifying feature of SPAs within the Study Area. It is also a priority species of the Cairngorms National Park. A qualitative (and where possible quantitative) appraisal of the routes was then undertaken (See **Appendix G** for full details).

4.3.8. All other protected and priority species records are represented to provide a complete view of the desk study; however, due to their widespread distribution and the scale of the proposal it was considered unlikely that they would prove to be deciding factors between options and as such are not reviewed within the options appraisal.

Limitations

4.3.9. This section identifies any limitations to the desk study and options appraisal and provides an explanation as to the effect of the overall appraisal process.

4.3.10. The desk study reviewed the Woodland Trust's Veteran Trees inventory, this provides records of veteran trees, but is not an exhaustive list and other veteran trees may be present in the area.

4.3.11. The search for water bodies within 500m of the Site was undertaken by using Ordnance Survey plans only. This source may not show all ponds and or water bodies within 500m of the Site boundary and therefore some water bodies may not have been identified.

4.3.12. NESBReC and RSPB records are not exhaustive, and the absence of records does not demonstrate the absence of species.

4.3.13. Data obtained with respect to capercaillie may not show all sites that could provide functional land[9] for this species as specific surveys were not undertaken as part of this study and the data represented only forms records received from RSPB covering a 10-year period. Therefore, further species-specific surveys will be required for this species prior to the detailed design stage.

4.3.14. The above limitations have been addressed through taking the precautionary approach within the appraisal. Furthermore, as each option has been assessed using the same parameters, any limitations in the data obtained is unlikely to influence the options appraisal. Once a route option is selected, detailed ecological survey should be undertaken to feed into the detailed design stage.

Results

Statutory and Non-statutory Designated Sites

4.3.15. Statutory designated Sites identified though the desk study are detailed in **Table 4.6** and shown on **Figure B.1** in **Appendix B**. There are no non-statutory sites within the Study area.

Site Name	Designation	Location of Designated Site[10] in Relation to Route Section at Closest Point	Features of Interest[11]
Loch Vaa	Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI)	Adjacent to Blue route Approximately 870m west of Purple route Approximately 900m to the	Loch Vaa is been designated a SPA due to its population of Slavonian Grebe (*Podiceps auritus*). The interest features of the SSSI are listed as a small, oligotrophic loch designated as a SSSI due to its populations of

[9] Functional land is defined as land that provides important habitat for the maintenance of a qualifying species (capercaillie) at a favourable conservation status, i.e. maintaining the integrity of the designated site(s)
[10] Where designated sites are situated outside of the Site boundary, the distance and direction is given to the closest point that the designated site is from the Site.
[11] including qualifying features of internationally designated sites and reasons for designation for SSSIs

Site Name	Designation	Location of Designated Site[10] in Relation to Route Section at Closest Point	Features of Interest[11]
		south of the Orange route	Slavonian Grebe (*Podiceps auritus*), Goldeneye (*Bucephala clangula*) and aquatic beetles such as *Berosus luridus* and *Hydrochus brevis*.
Craigellachie	National Nature Reserve (NNR) and SSSI	Approximately 550m southwest of Blue and Orange routes Approximately 550m southwest of Purple route	Craigellachie is a large birchwood designated a SSSI and NNR due to its upland birch woodland of aspen (*Populus tremula*), hazel (*Corylus avellane*), sessile oak (*Quercus petraea*) and juniper (*Juniperus communis*), in addition to a varied flora and high diversity of northern moths such as Kentish glory (*Endromis versicolora*), great brocade (*Eurois occulta*) and cousin German (*Protolampra sobrina*).
River Spey	Special Area of Conservation (SAC) and SSSI	Approximately 920m east of Blue and Orange routes Approximately 215 m east of Purple route	The River Spey is the second-largest river in Scotland, with very good water quality. Designated a SAC and SSSI due to large population of Atlantic Salmon (*Salmo salar*), Sea lamprey (*Petromyzon marinus*), Freshwater pearl mussel (*Margaritifera margaritifera*) and Otter (*Lutra lutra*).
Kinveachy Forest	SAC, SPA and SSSI	Approximately 975 m west of Blue and Orange routes	Kinveachy Forest pinewoods represent a major remnant of Caledonian pine forest. Designated as a SAC due to its combination of Bog

Site Name	Designation	Location of Designated Site[10] in Relation to Route Section at Closest Point	Features of Interest[11]
		Approximately 975m west of Purple route	woodland and Caledonian forest and as a SPA due to its populations of Annex I Scottish crossbills and Capercaillie. It is designated a SSSI due to its native pinewood and breeding bird assemblage of Capercaillie (*Tetrao urogallus*), Scottish crossbill (*Loxia scotia*) and Crested tit (*Lophophanes cristatus*).
Abernethy Forest	SPA, SSSI and RSPB Reserve	Approximately 790m east of Purple route Over 2km from Blue and Orange routes	Abernethy Forest is one of the largest areas of native pinewood in Britain. Designated as a SPA and due to its populations of Annex I bird species including Osprey (*Pandion haliaetus*), Crested tit (*Lophophanes cristatus*), Capercaillie (*Tetrao urogallus*) and Scottish crossbill (*Loxia scotica*). It is designated a SSSI due to its beetle, dragonfly, breeding bird, lichen, fungi and vascular plant assemblages, in addition to its Basin fen and Raised bog habitats.It is also designated as a RSPB Reserve.
Cairngorms	SAC	Approximately 790m east of Purple route Over 2km from Blue and	The Cairngorms represents a diverse area of alpine and boreal habitats, with areas of blanket bog, bog woodland, Caledonian forest, Juniper on heaths and wet heathland.

Site Name	Designation	Location of Designated Site[10] in Relation to Route Section at Closest Point	Features of Interest[11]
		Orange routes	Designated as a SAC due to these habitat types and its populations of Otter (Lu*tra lutra*), and as a SPA due to its populations of Annex I bird species including Golden eagle (*Aquila chrysaetos*), Peregrine (*Falco peregrinus*), Dotterel (*Charadrius morinellus*) and Osprey (*Pandion haliaetus*).

Table 4-6 – Statutory designated Sites within 2km of Route Options

4.3.16. The Blue, Purple and Orange routes pass through, or are directly adjacent to, 15 parcels of woodland listed on the Ancient Woodland Inventory. The largest of which is Site 21 (listed in the inventory as semi-natural ancient woodland) which runs along the west side of the Blue and Orange routes. There are several more parcels within 2km of the proposed route options. These are shown on **Figure B.2** Ancient Woodland Inventory in **Appendix B**. **Table 4.7** details the areas of approximate loss of ancient woodland along areas of new route. However, it should be noted that there may be localised losses within the areas of existing route where upgrades are required, these are also estimated within **Table 4.7**.

Route Option	Existing Infrastructure Footprint within Areas of Ancient Woodland (sq. m)	Proposed New Infrastructure within Routes – Estimated Area of Ancient Woodland Loss (sq. m)
Blue Route B1	191	3390
Blue Route B2	0	1268
Blue Route B3	0	5338
Blue Route B4	0	658
Blue Route B5	0	0
Blue Route B6	0	0
Blue Route B7	0	0

Route Option	Existing Infrastructure Footprint within Areas of Ancient Woodland (sq. m)	Proposed New Infrastructure within Routes – Estimated Area of Ancient Woodland Loss (sq. m)
Blue Route B8	0	4182
Orange Route O1	0	0
Orange Route O2	0	21157
Orange Route O3	0	21372
Purple Route P1	277	626
Purple Route P2	4577	1489
Purple Route P3 (Existing Only)	0	0
Purple Route P4	0	0

Table 4-7 – Areas of Approximate Loss of Ancient Woodland

4.3.17. **Table 4.8** details the locations of veteran trees identified through desk study, noting that no veteran trees are closer than 1.5km to the proposed routes.

Location of veteran trees	Description of tree/s
NH9641918970; 1.5 km from Purple route and over 2 km from Blue and Orange routes	51 Scots Pine
NH 94020 15580; 1.8 km from Purple route and over 2 km from Blue and Orange routes	1 Laburnam

Table 4-8 – Veteran trees within 2km of the Route Options

Watercourses

4.3.18. **Table 4.9** identifies the locations along each route where watercourses will be crossed, noting that none of the watercourses are designated. This is shown on **Figure B.3** in **Appendix B**.

Route Option Section	Name of Watercourse	Locations (Grid Ref) of Crossing Point
Purple Route P1	Unnamed tributary of the River Spey	NH90391405, north of McInnes Place.
Blue Route B1 and Purple Route P1	Unnamed tributary of the River Spey	B1: NH89751427 P1: NH90391405

Route Option Section	Name of Watercourse	Locations (Grid Ref) of Crossing Point
Blue Route B1	Unnamed tributary of the River Spey	NH 8990 1457, near Sluggangranish.
Blue Routes B2 and B3	Tributary of Allt na Criche, (tributary of the River Spey)	NH90501564, near Loch nan Carraigean
Blue Route B4	Unnamed tributary and drain	Tributary at: NH90411634 and drain at: NH9051167, near Avielochan
Blue Routes B7 and B8	Allt Cnapach	B7: NH91121849 B8: NH91221841
Purple Route P4	Gormack Stripe	NH92351919, near Deshar Primary School.
Purple Route P4	Gormack Stripe	NH91671899, near Chapelton.
Orange Route O2 and O3	Gormack Stripe	NH91411939, near Avingormack
Orange Route O3	Fèith Mhòr	NH90982133, northeast of Crannaich.
Orange Route O2	Drain of Fèith Mhòr	NH90942224. Just south of Carrbridge.

Table 4-9 – Watercourse crossings along Route Options

Protected and Priority Species

4.3.19. A summary of the protected and priority species results from the desk study are provided in **Tables 4.10**, **4.11** and **4.12** and below. A summary of invasive species records is given in **Table 4.9**. Records are displayed on **Figure B.4**, sheets 1 to 13 in **Appendix B**. Details of legislation relating to protected species is provided in **Appendix D**.

Species	Distance of Record from Nearest Route Section (m)	Grid Reference	Total Number of Records
Common pipistrelle	15m west from Blue Route B7	NH9118	25

Species	Distance of Record from Nearest Route Section (m)	Grid Reference	Total Number of Records
Unknown pipistrelle species	790m west from Orange Route O1	NH890140	3
Daubenton's bat	410m north-east from Purple Route P4	NH946191	2
Eurasian badger	<5m south from Purple Route P4	NH915189	82
European otter	80m from Purple Route P4	NH924191	111
Water vole	No records	N/A	N/A
Eurasian red squirrel	40m south from Purple Route P4	NH9338218980	219
Pine marten	560m south-west from Purple Route P4	NH925186	76
Scottish wildcat	270m west from Orange Route O2	NH910190	18

Table 4-10 – Protected Mammals Recorded within 2km of the Route Options

Species	Distance from route options (m) of closest record	Grid Reference	Total Number of Records / Comments
Common toad	1660m south-west from Orange Route O1	NH888123	24
Great crested newt	60m east of Blue Route B8	NH911177	Dead on road.
	140m east of Blue Route B8	NH912178	Seen running across road.
	50m east of Blue Route B8	NH911177	1 adult female; 1 juvenile male; 2 adult males.

Table 4-11 – Amphibian Species Recorded within 2km of the Route Options

Species	Distance from Route Options (m) of Closest Record	Grid Reference	Total Number of Records
Common lizard	5m south from Purple Route P4	NH929191	8
Slow worm	5m west from Purple Route P3	NH940183	5

Table 4-12 – Reptile Species within 2km of the Route Options

Species	Distance from Route Options (m) of Closest Record	Grid Reference	Total Number of Records
American mink	1940m south-east from Orange Route O1	NH89771170	2

Table 4-13 – Non-native Invasive Species within 2km of the Route Options

4.3.20. With respect to birds, three capercaillie records were obtained from NESBReC (NH934189) and 1738 records from the RSPB. The RSPB data on capercaillie details 77 lekking sites within 2km of the Route Options. These records are shown on Confidential **Figure B.5**).

4.3.21. In summary, from the NESBReC data, a total of 28 protected and priority bird species were recorded within the study area:

- Four Annex 1 species including peregrine falcon, Slavonian grebe, black grouse and osprey;
- Four species listed on Schedule 1 including peregrine falcon, Slavonian grebe, osprey and brambling;
- 23 species of principal importance in accordance with the SBL;
- 14 Red List species of conservation concern; and,
- 11 Amber List species of conservation concern.

4.3.22. With respect to invertebrates, 41 species of notable invertebrate were recorded within the study area comprising 155 records in total. The species with the most records is the Northern damselfly with 16 records (NH91071776), autumnal rustic with 11 records (NH940184) and small mesh weaver with 10 records (NH913225). The CNPA priority species narrow headed ant was also recorded four times (NH909214).

Appraisal

4.3.23. Below provides a summary of the key ecological aspects considered in the ecological appraisal. Differentiating factors between route options have been identified where relevant. The details specific to each route option section are set out in **Appendix G** - Individual Appraisal Summary Tables. **Appendix H** – Initial Sifting Table presents a summary of the comparative appraisal of pairs of options associated with each route.

Statutory Designated Sites

4.3.24. Loch Vaa Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) is located adjacent to the Blue Route B8 on the opposite side of the A95. This site is designated primarily due to its population of Slavonian Grebe (*Podiceps auritus*). Although this will not be directly affected by the proposed route options, it is possible that Blue Route B8 may indirectly affect the site.

4.3.25. Two SPA sites designated due to the presence of breeding populations of capercaillie are present within the study area (Abernethy Forest and Kinveachy Forest SPAs) (as detailed in **Table 4.6**). Although these will not be directly affected by any of the proposed route options, it is possible that the routes may affect areas of functional habitat supporting the SPA populations of capercaillie.

4.3.26. Any potential effects on qualifying features of the SPAs would require assessment, initially through a Habitat Regulations Appraisal (HRA) Screening exercise which would determine whether there is a need for a full HRA Appropriate Assessment.

4.3.27. Craigellachie SSSI and NNR is located within the study area to the south of the proposed routes. This site is designated due to its upland birch woodland and moth assemblage. There are no effects pathways from any of the proposed routes to this site and these are separated from the designated site by the A9.

Ancient Woodland and Other Areas of Woodland Habitat

4.3.28. The details of areas of ancient woodland within the study area are shown on **Figure B.2** in **Appendix B**. The areas of ancient woodland loss are set out in **Table 4.7** above.

4.3.29. Ancient woodland loss is identified as a primary differentiator between Blue route options B2 and B3 where the former involves 1268m^2 and the latter 5338m^2. It is also a differentiator in the case of Blue route options B7 and B8 where the former involves no ancient woodland loss whilst the latter would result in loss of 4182m^2.

4.3.30. The majority of the area of ancient woodland loss would occur along the Blue and Orange routes. The majority of the Purple route through areas of ancient woodland is proposed along existing NMU route (Speyside Way) and therefore habitat loss would be minimal and restricted to localised areas of drainage improvements and verge widening.

4.3.31. The majority of loss along the Blue route would be along the edges of areas of ancient woodland with the Orange route running through the centre of larger blocks of woodland. However, Orange Route O2 and O3 are alongside the existing B9153 road.

4.3.32. Orange Route O2 would result in the loss of 21157m^2 of ancient woodland area, with Orange Route O3 resulting in a loss of 21372m^2.

Watercourses and Waterbodies

4.3.33. The details of watercourses and waterbodies within the study area are shown on **Figure B.3** in **Appendix B**. The location of the crossings and number of

watercourse crossings per section are set out in **Table 4.9** of the results section and the Individual Appraisal Tables in **Appendix G**.

Protected Species

4.3.34. The details of protected species within the study area are shown on **Figure B.4**, Sheets 1-13 in **Appendix B** and within **Tables 4.10 - 4.12** in the results section. With regards to protected species, the majority of those recorded within the study area are widespread within Scotland and occur along the Blue, Orange and Purple route options. Suitable habitat to support protected species such as badger, wildcat, otter, red squirrel, and pine marten occur in the areas surrounding both routes and it is anticipated that these species occur locally along both routes. Therefore, this does not form a differentiating factor between either option.

Capercaillie

4.3.35. The details of capercaillie records within the study area are shown on Confidential **Figure B.5** and are discussed in the results section.

4.3.36. Several capercaillie strongholds were identified within the woodlands within the study area. The majority of the records along the Blue and Orange routes occur over 1km from the route on the opposite side of the A9 to the proposed route options; however, functional habitat is likely to extend further downslope towards the A9 within areas of suitable habitat although this is still separate to the A9 scheme.

4.3.37. The records along the Purple route mostly occur within 1km to the west of the route. Levels of activity within this woodland appear to be high with breeding activity as well as feeding and roosting recorded, it is likely that areas of suitable habitat within this woodland will form functional habitat for capercaillie.

4.3.38. In summary, ecological factors have generally been found to be 'neutral' in terms of relative impacts in conducting the comparative appraisal of options associated with the Blue and Orange routes. That is, with the exception of the comparison of options B2 and B3 (B3 is less favourable) and also B7 and B8 (B8 is less favourable) where ancient woodland loss is a clear differentiator.

Landscape & Visual

4.3.39. The landscape and visual impacts to receptors along the route options were considered. The high-level landscape and visual appraisal were desk-study based.

4.3.40. Applying professional judgement, the landscape appraisal considered landscape and landscape-related designations and Landscape Character Areas on or in close proximity to the route options and the Special Landscape Qualities (SLQ) of the Cairngorms National Park. The visual appraisal considered likely visual receptors (residential, commercial and recreational) along the route options. The details specific to each route option section are set out in **Appendix G** - Individual Appraisal Summary Tables and **Appendix H** – Initial Sifting Table presents a summary of the comparative appraisal of pairs of options associated with each route.

Landscape

4.3.41. In conducting the comparative appraisal of pairs of options associated with the Blue and Orange Routes landscape factors have generally been found to be 'neutral' in terms of relative impacts. The exception being the comparison between options B7 and B8. With Blue Route B8 it was considered that the reduction in trees and vegetation would diminish the localised landscape character and the contrasting textures would be slightly diminished in localised areas. In contrast, it was considered that there would be little perceptible change associated with Blue Route B7.

Visual

4.3.42. Visual factors are broadly considered to be 'neutral' in terms of relative impacts on pairs of options associated with the Blue and Orange routes. However, there would be localised visual change for a cluster of residential receptors at Kinveachy associated with B8 but in comparison little perceptible change associated with the alternative B7.

4.3.43. In addition, there would be a change to the view and direct loss of part of the curtilages of two residential properties (Avingormack and Docharn Lodge) associated with Orange Route O3. Although there will be a change in the view for two residential receptors associated with Orange Route O2, there is scope for mitigation with this option, in contrast with Orange Route O3 where there is considered little room for mitigation.

Cultural Heritage

4.3.44. Purple Route P3 is the only route which is in proximity to a designated cultural heritage asset (Listed Building LB259 at Boat of Garten, as shown on **Figure B7** in **Appendix B**) but this will not be affected. Whilst there are undesignated heritage features in the vicinity of several routes including Blue Routes B1, B4, B5 & B8 and Orange Routes O2 & O3, these are not considered to present a constraint. In summary, comparative appraisal of pairs of options specific to individual routes identified no differentiators across the range of factors considered and therefore relative impacts have been categorised as 'neutral' as presented in **Appendix H** – Initial Sifting Table.

Water Environment (including flood risk)

4.3.45. According to Ordnance Survey Mapping, the majority of the routes cross at least one minor watercourse. Blue Routes B2, B3, B7 and B8 cross at least one watercourse whilst Blue Route B4 and Purple Route P4 cross at least two minor watercourses. Blue Route O1 and Orange Routes O2 and O3 cross at least three minor watercourses and Purple Route P1 appears to cross the same watercourse multiple times.

4.3.46. The majority of route sections are located within a Potentially Vulnerable Area (PVA) 05/11 Aviemore and Boat of Garten[12]. SEPA flood mapping indicates the presence of isolated pockets of surface water flooding within the extents of all route sections. Fluvial flood risk affects B1 (Allt na Criche watercourse), B4 (Avie

[12] https://www2.sepa.org.uk/frmstrategies/pdf/pva/PVA_05_11_Full.pdf (accessed 05/05/2020)

Lochan watercourse), B7 and B8 (Allt Cnapach watercourse), P1 (Allt Cnapach and The Sheiling watercourses). The southern end of P2 is susceptible to flooding with a high risk (1:10) of localised river flooding from the River Spey.

4.3.47. Considering the above localised flood risks, comparative appraisal of pairs of options specific to individual routes identified no substantial differentiators and therefore relative impacts have been categorised as 'neutral' as shown in **Appendix H** – Initial Sifting Table.

4.3.48. The level and scope of flood risk assessment required to support the application for planning permission will be determined following the selection of a preferred route. Watercourses and waterbodies are shown on **Figure B3** in **Appendix B**.

4.4. Identified Route Options for Comparison Assessment

4.4.1. The Sifting exercise involved a robust review of the engineering and environmental constraints associated with the route pairings of B2 v B3, B5 v B6, B7 v B8 and O2 v O3.

4.4.2. The findings reported in this chapter, along with the Individual Route Appraisal Summary Tables in **Appendix G** and the Initial Sifting Tables in **Appendix H**, identified the following options for progressing to the Route Options Comparison Assessment stage:

- Blue Route B3;
- Blue Route B6;
- Blue Route B8; and,
- Orange Route O3.

4.4.3. The individual Route Options listed in **paragraph 4.4.2** were marked in the Initial Sifting Table as either favourable, least favourable or neutral for each assessment criteria. There was no specific weighting applied in this assessment. This approach was considered appropriate for the level of assessment required for this study.

4.4.4. The Blue Route Options identified above, along with the Blue Route Options where there was no alternative option considered in the sifting stage (B1 and B4), were then subject to a Comparison Assessment against the Purple Route Options. This includes B1, B3, B4, B6 and B8 vs P1, P2, P3 and P4.

4.4.5. The preferred Orange Route Option was identified as O3. This option will therefore form part of the overall Preferred Route for the Aviemore to Carrbridge NMU scheme.

5. Route Option Comparison Assessment

5.1. Overview

5.1.1. The purpose of this chapter is to undertake a comparison assessment between the Blue and Purple routes to identify an overall Preferred Route. The comparison assessment has been undertaken reviewing the same engineering and environmental criteria applied during the initial sifting of Blue and Orange options. The Route Option Comparison Table for this assessment is included in **Appendix I** with a summary provided in **Table 5.1**.

5.1.2. The route comparison exercise between the Blue and Purple route options extends from the northern end of Orange Route O1 in Aviemore to the start of Orange Route O3 at Kinveachy Junction. This comparison of the Blue and Purple routes considers B1, B3, B4, B6 and B8 vs P1, P2, P3 and P4.

5.2. Engineering Appraisal

Sifting Assessment Criteria	Blue Route	Purple Route
Safety	Favourable	Least favourable
Coherence	Favourable	Least favourable
Directness	Favourable	Least favourable
Attractiveness	Favourable	Least favourable
Accessibility and Socio-economic Inclusion	Favourable	Least favourable
Implementability	Least favourable	Favourable
Design Compliance	Favourable	Least favourable
Utilities	Least favourable	Favourable
Ecology and Nature Conservation (biodiversity)	Favourable	Least favourable
Landscape	Least favourable	Favourable
Visual	Least favourable	Favourable
Cultural Heritage	Neutral	Neutral
Water Environment	Neutral	Neutral

Sifting Assessment Criteria	Blue Route	Purple Route
Outline Cost	Favourable	Least favourable
Public Exhibition Feedback	Favourable	Least favourable
Landowner Information	Favourable	Least favourable

Table 5-1 – Blue Vs Purple Summary Table

5.2.1. The route progressing for further appraisal is the Blue Route.

Safety

5.2.2. The Blue route runs predominately parallel to the B9152 and the A95 and will be segregated from live traffic in line with current design standards with this offset maximised where possible. The Blue route will have a crossing of the A95 immediately north of the proposed roundabout at Granish Junction at connection with A9/A95/B9152 included in the Dalraddy to Slochd project.

5.2.3. The majority of the Purple route is offline (Purple Routes P1 and P2), with Purple Route P3 an on-carriageway and Purple Route P4 is mostly segregated similar to the Blue Route. Purple Route P4 will have a crossing of the A95, and the B9153 (to connect to O3). The crossing of the A95 is an existing crossing and care will need to be taken at detailed design to ensure the layout complies with current design standards for such a crossing.

5.2.4. Both the Blue and Purple routes require a road crossing of the A95; however, it is anticipated that traffic speeds at the proposed crossing on the Blue route (Granish Roundabout) will be lower than the crossing of the A95 on the Purple Route. Both routes also require a crossing of the B9153. Similarly, higher speeds are anticipated at the Purple route crossing location at Kinveachy junction when compared against the Blue route pedestrian crossing required within the 30mph extents of Carrbridge. Although the Purple route has long sections which are remote from the carriageway, it also contains on-carriageway sections which will consequently lead to a higher interface between non-motorised users and vehicles travelling on these sections. It was therefore concluded that in terms of safety, the Blue route is ‘favourable’ in this instance.

Coherence

5.2.5. The Blue route provides links with a number of existing NMU routes along its length, including links to the west side of the A9, as well as providing connectivity to the Aviemore Orbital, The Speyside Way and NCN7.

5.2.6. The Purple route also provides links to existing NMU routes including upgrading part of The Speyside Way and NCN7 and linking to the Aviemore Orbital Path. As noted previously, this upgrade will include widening, re-profiling and providing a bituminous surface.

5.2.7. Both the Blue and Purple routes link well with existing NMU routes within the study area; however, it is considered that the Blue route will offer greater connectivity with the wider NMU network in the study area. In particular, the Blue route will provide added value by creating a circular route between Aviemore, Kinveachy and Boat of Garten via the existing Speyside Way. It was therefore concluded that in terms of coherence, the Blue route is 'favourable' in this instance.

Directness

5.2.8. The Purple route is approximately 11km in length and provides a route to Kinveachy junction via Boat of Garten.

5.2.9. The Blue route is approximately 5.5km in length and closely follows the existing road corridors of the B9152 and the A95.

5.2.10. The Blue route is approximately 5.5km shorter than the Purple route and will consequently lead to shorter journey times. It was therefore concluded that in terms of directness, the Blue route is 'favourable' in this instance.

Attractiveness

5.2.11. Assessing the feedback received during the public consultation, the Blue route was considered more attractive to users within the local community due to its shorter length. The on-carriageway sections of the Purple route were identified as unfavourable and it was deemed that surfacing the existing Speyside Way could have an adverse affect on the character and attractiveness of the existing route because of how it blends with its natural surroundings. It was therefore concluded that in terms of attractiveness, the Blue route is 'favourable' in this instance.

Accessibility and Socio-economic Inclusion

5.2.12. The Blue route has the potential to significantly improve connectivity between Aviemore and Carrbridge by providing a safe route for all users which is direct and accessible. The route has the potential to increase active travel between the settlement of Aviemore and Carrbridge, link into existing NMU routes to Boat of Garten and more locally improve links to locations such as the Aviemore Kart Centre and Oakwood Caravan & Camping Park, whilst providing direct access for a number of residents along the route.

5.2.13. The Purple route has the potential to improve connectivity between Aviemore and Boat of Garten by improving the existing path along this route; however, it may not be considered as an attractive option for an Aviemore to Carrbridge NMU route due to the increased distance between the start and end points. It was therefore concluded that in terms of accessibility and socio-economic inclusion, the Blue route is 'favourable' in this instance.

Implementability

5.2.14. The Purple route is considered more favourable than the Blue route in terms of implementability. The Blue route contains greater lengths of new construction which is often through adjacent farmland which will consequently require land negotiation to deliver the route. The Blue route will also likely to have more challenges than the Purple Route in terms of developing a design to minimise the

conflicts with existing road infrastructure and utilities. The Purple route is likely to be more straightforward given that by in large the proposal is to widen, re-profile and provide a bituminous surface on an existing shared use route. It was therefore concluded that in terms of implementability, the Purple route is 'favourable' in this instance.

Comfort (including Design Compliance)

5.2.15. The horizontal and vertical alignments of the Blue route generally have a smoother profile than the sharp changes in direction and steep sections associated with following the existing path in the Purple route. It was therefore concluded that in terms of design compliance, the Blue route is 'favourable' in this instance.

Utilities

5.2.16. As the Purple route is an existing path which is predominately remote from existing road corridors, the likely interface with existing utility apparatus is much less. It was therefore concluded that in terms of utilities, the Purple route is 'favourable' in this instance.

Outline Cost

5.2.17. The cost estimates associated with the Blue and Purple routes are outlined in **Table 5.2** below for comparison purposes. Refer to **Section 3.2** for the basis of the cost estimates and **Section 7** for outline cost estimate for the Preferred Route.

Option	Cost Estimate (£s)
Blue Route (B1, B3, B4, B6 and B8)	2,045,000
Purple Route (P1, P2, P3 and P4)	2,515,000

Table 5-2 – Outline Cost Estimate (Blue Vs Purple Comparison)

5.3. Environmental Appraisal

Ecology & Nature Conservation

5.3.1. Two main differentiating ecological factors between the Blue and Purple route options have been identified following the review of the desk study data. These comprise the loss of areas of ancient woodland and the presence of capercaillie within habitat adjacent to the route options.

Ancient Woodland

5.3.2. Scottish Planning Policy[13] identifies that Ancient semi-natural woodland is an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, especially veteran trees of high nature conservation and landscape value, should be protected from adverse impacts resulting from development.

[13] https://www.gov.scot/publications/scottish-planning-policy/pages/2/

5.3.3. The Scottish Government's policy on control of woodland removal (Feb 2019)[14] states that there is a strong presumption in favour of protecting Scotland's woodland and woodland removal should only be allowed where it would achieve significant and clearly defined additional public benefits (there is a particularly strong presumption against removal of ancient woodland). In addition, it sets out that removal should be conditional, demonstrating how the development and compensation measures (including offside compensation planting) will deliver significant public benefits.

5.3.4. The Blue route will result in the greatest loss of area of ancient woodland (approx. 11,453m^2 more than the Purple Route); however, for the majority of this loss the area affected will be along the edge of woodland blocks which are already bisected by the B9153 and/or A95, with the Blue route running alongside these roads. Therefore, in most cases this woodland edge already experiences disturbance effects from traffic movements. However, the addition of an NMU route would push this effect further into the woodland block than is currently experienced.

5.3.5. The Purple route for the most part runs along an existing NMU route or road and would have minimal land take through areas of ancient woodland or other habitats as loss is only anticipated in localised areas where upgrade works are required, e.g. potential widening and drainage upgrades.

Capercaillie

5.3.6. Capercaillie are highly sensitive to disturbance especially near breeding sites. Over 80% of the National population of capercaillie occur within the Cairngorms National Park (predominantly within Strathspey)[15]. This species has seen significant declines in population numbers over the last 50 years and the Strathspey population has been highlighted as crucial to the long-term survival of the species in the UK.

5.3.7. Due to the fragmented nature of the forests of the Cairngorms National Park, the capercaillie population must be considered as a metapopulation, i.e. a group of spatially separated populations of the same species which are interacting and are dependent on one another[15]. Therefore, the spatial requirements for capercaillie include areas of suitable habitat both within the SPA boundaries and in the wider Speyside area.

5.3.8. Two SPAs designated due to the presence of breeding populations of capercaillie (listed as the SPAs qualifying feature) occur within the study area with Abernethy forest located approximately 790m to the east of the Purple route at its nearest point and Kinveachy Forest approximately 975m west of the Blue and Orange routes at its nearest point. Suitable habitat to support capercaillie occurs within 1km of the Blue, Orange and Purple routes. This forms functional habitat for capercaillie populations associated with the SPAs and as such is subject to the same level of protection afforded to the designated sites.

5.3.9. Data from the RSPB shows a high concentration of capercaillie activity within the woodland directly to the west of the Purple route, this includes feeding, roosting and breeding activity. Some of the records in this area occur close to the proposed

[14] The Scottish Government's policy on control of woodland removal: Implementation Guidance (Feb 2019).
[15] Cairngorms National Park Authority, Cairngorms Capercaillie Framework Phase 1 Report, January 2015.

route with lekking sites recorded within 1km of the NMU route and the nearest capercaillie record. Increased use of this route could potentially therefore pose a risk of increased levels of disturbance to this species.

5.3.10. Capercaillie are present within the study area adjacent to the Blue route; however, these records occur on the western side of the A9 which is likely to form a barrier to easy movement of capercaillie between the habitats on either side of the A9. It is anticipated that any disturbance that could arise from use of the NMU route would not be greater than that of the A9 which sits between the NMU route of the known capercaillie population to the west of the A9. As such it is considered unlikely that this route option would have an effect on capercaillie.

Conclusions

5.3.11. Although the Blue route will result in the loss of a greater area of ancient woodland (approx. 13,568m^2 in total compared to 2,115m^2 for the Purple route), this is predominantly along the edge of woodland already bordered by the B9153 or the A95. Capercaillie habitat is present on the western side of the A9 but is unlikely to be affected by the Blue route due to the presence of the A9.

5.3.12. The Purple route although already in existence for the majority of its length and adjacent to existing roads for the rest of the route runs adjacent to a woodland which is known to be used by capercaillie. This woodland is considered to be functional land associated with the designated Special Protection Areas which are present in the wider areas. Capercaillie are a qualifying feature of the SPAs. Capercaillie are highly sensitive to disturbance. Habitat Regulation Appraisal (HRA) Screening would need to be undertaken to determine if proposals for the Proposed Purple Route could affect the integrity of the designated sites. Given the sensitivity of the species, the increased levels of human disturbance created by the NMU route could potentially affect the conservation status of the capercaillie. Taking into the account the potential for a likely significant effect on the conservation status of the capercaillie population, the Blue route was considered favourable from an ecological basis.

Landscape & Visual

5.3.13. The landscape appraisal considers landscape and landscape-related designations and Landscape Character Areas on or in close proximity to the Route Options and the Special Landscape Qualities (SLQ) of the Cairngorms National Park (CNP. The visual appraisal considers likely visual receptors (residential, commercial and recreational) along the Route Options.

Landscape Appraisal

5.3.14. Figures were produced indicating the landscape constraints (National Parks and National Scenic Areas) and landscape-related constraints (Ancient Woodland Inventory). Each of the route options were considered against the key characteristics of these designations. The Special Landscape Qualities of the Cairngorms National Park were also considered. Landscape designations are shown on **Figure B7**, landscape character areas are shown on **Figure B8** and ancient woodland is shown on **Figure B2** all in **Appendix B**.

5.3.15. All route options for all sections lie within the Cairngorms National Park. No route options or sections lie within the National Scenic Area (see **Figure B.7** in **Appendix B**). Due to the scale of the Route Options in relation to the scale of the CNP, it was considered that there is no impact on the overall CNP designation. However, the key landscape characteristics of each Landscape Character Area (LCA) within the CNP as relevant to each route has been considered alongside the Special Landscape Qualities of the CNP as relevant to each ACNMU section. Detail of the effect of the Route Options on AWI can be found within the Ecology section of this report.

5.3.16. The key landscape elements which contribute to the landscape character of the Blue Route are undulating terrain, scattered broadleaf woodland, agricultural land, lochs and lochans, coniferous forestry plantation fringed with birch and woodland copses. The Special Landscape Quality of the CNP most relevant is the attractive and contrasting textures.

5.3.17. The key landscape characteristics which contribute to the landscape character of the Purple Route are residential properties associated with the fringe of Aviemore, agricultural land, coniferous forestry plantation edged with birch woodland and the vernacular buildings of Boat of Garten. The Special Qualities of the CNP most relevant are the dark and venerable pine forest and the perception of wildness, and attractive contrast and textures.

5.3.18. The Purple Route is more favourable because it would result in less loss of landscape elements contributing to the character, including trees including Ancient Woodland Inventory trees.

Visual Appraisal

5.3.19. The visual appraisal was limited to a desk study and therefore does not include supporting figures and photographs. OS maps, and Google Earth were used, along with notes from field surveys undertaken earlier by others during the route optioneering process.

5.3.20. The key receptors for the Blue Route are users of the B9152 and A95. The NatureScot office (north of Aviemore) will have little change in the view. There will be some reduction in trees along the A95; however, this would generally not impact on the focus of the view. While the route would have a direct impact on the footprint of the land at Avielochan Farm and would be perceptible as a new element from Avielochan Farm and some residential properties nearby, it would not change the focus of the view. Views are unlikely to be more than fleeting glimpses from the Highland Main Line railway. The properties known as Birch View, Taighban and The Knoll would experience more views of the A95 and traffic on it due to the reduction/loss of roadside vegetation, hedgerow and hedgerow trees to facilitate the proposal.

5.3.21. While a small part of the Purple Route may be perceptible for residents on the fringe of Aviemore and from a small part of the industrial estate there, the key visual receptors are users of the NCN7 and the Speyside Way long-distance walking route, receptors in Boat of Garten settlement and properties to the west of Boat of Garten (Strathspey Cottage, Applegrove Cottage, Big Husky Lodge and

the property adjacent to it). The proposed route will be visible from the school and NCN7.

5.3.22. As the Purple Route follows existing NMU routes there is less change to the view resulting from its introduction and associated loss of trees than for the Blue Route. Therefore, there is less visual impact and the Purple Route is more favourable.

Cultural Heritage

5.3.23. In terms of the presence or absence of designated cultural heritage assets, there is nothing to differentiate the routes.

Water Environment (including flood risk)

5.3.24. A number of new watercourse crossings will be required in relation to the Blue Route, whereas with the Purple Route it is anticipated that existing crossings can generally be utilised. However, with appropriate mitigation in place it is expected that there will be negligible risk to the water environment during construction and therefore this aspect is not considered a differentiator between the two routes. Localised surface water and fluvial flood risk, associated with both routes, is not considered to be a substantial constraint given the development type and footprint and can be mitigated through appropriate scheme design.

6. Stakeholder & Landowner Engagement

6.1. Overview

6.1.1. The feedback obtained from Stakeholder and Landowner engagement is vital in the development and assessment of the route options. This section of the report summarises feedback received from both the Baseline Assessment stage and the Option Appraisal stage.

6.2. Summary of Baseline Assessment Stakeholder and Landowner Engagement

6.2.1. As part of the Baseline Assessment Stage, Public Exhibitions were held in Aviemore and Carrbridge on the 25th and 26th September 2019. The exhibitions provided an overview of the background of the study, the findings of the Baseline Assessment and outlined the next steps.

6.2.2. Details of the public exhibitions, including display materials, exhibition feedback and AMJV responses can be found on the Transport Scotland website.

6.2.3. The exhibitions provided an opportunity for members of the public to discuss the study with Transport Scotland representatives and their consultants, as well as providing an opportunity to provide formal feedback on the study. The feedback forms were analysed with the data presented in **Figures 6.1** to **6.4**.

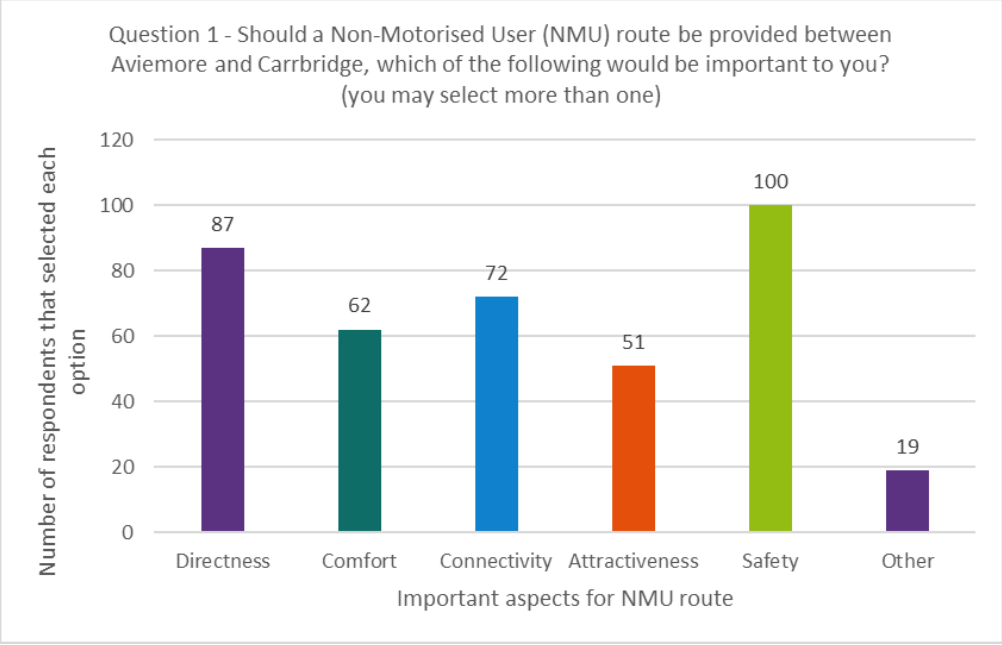

Figure 6-1 - Feedback form Question 1

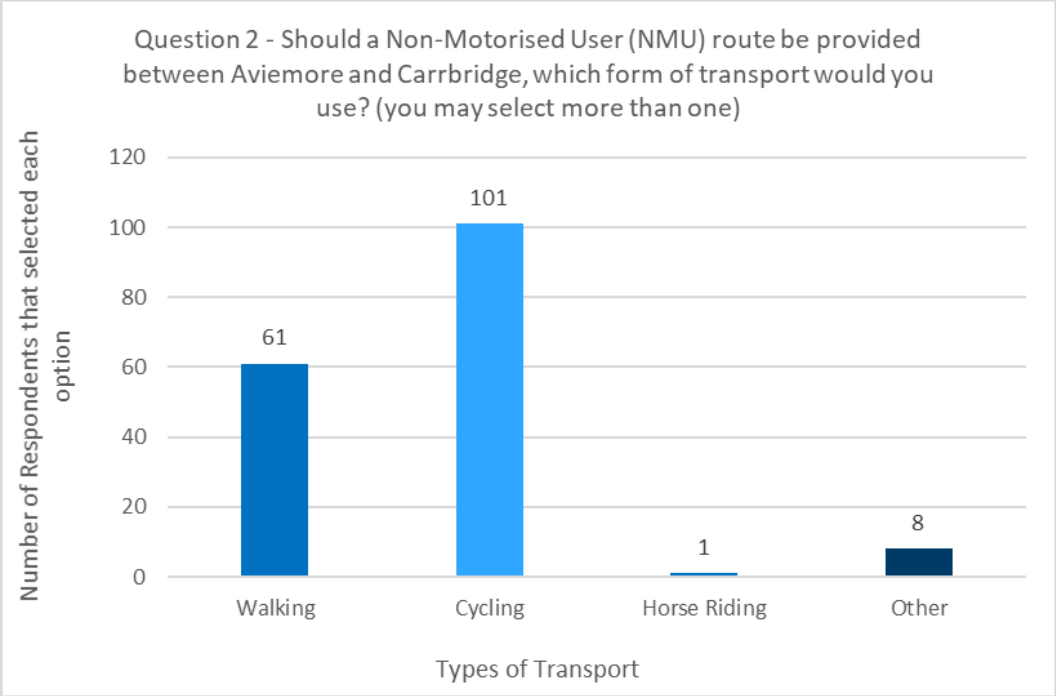

Figure 6-2 - Feedback form Question 2

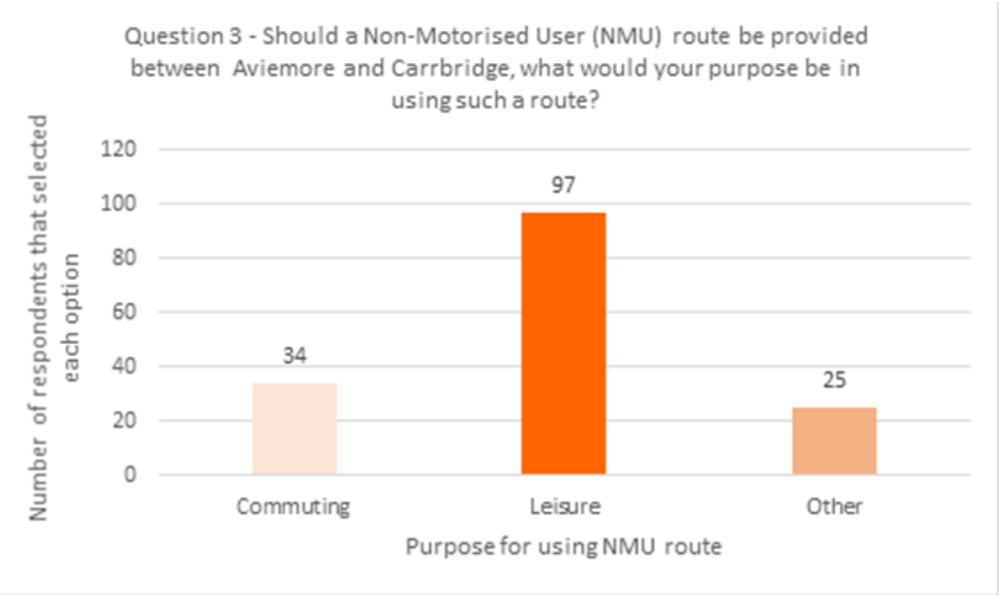

Figure 6-3 - Feedback form Question 3

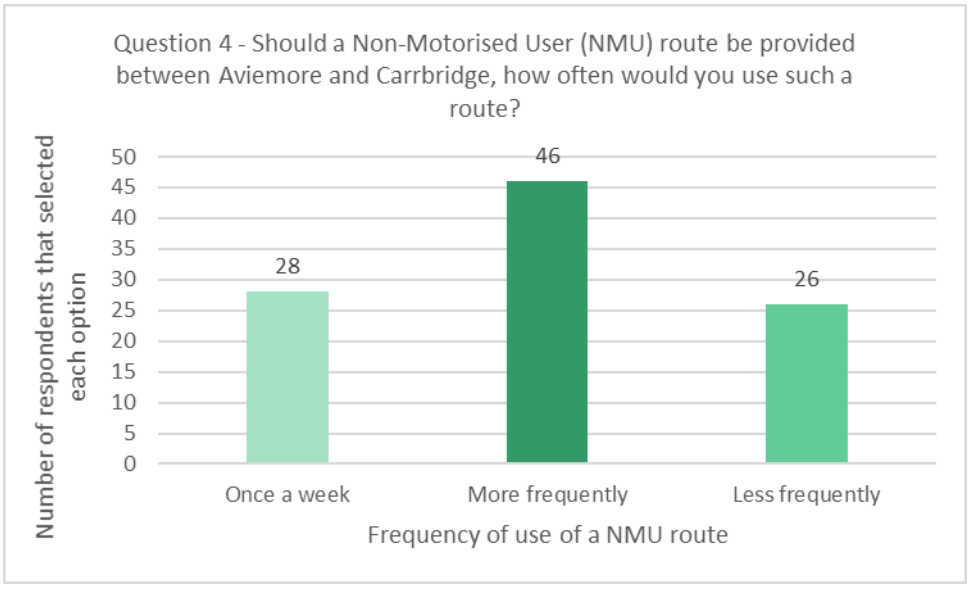

Figure 6-4 - Feedback form Question 4

6.2.4. In addition to the above, the feedback form also allowed an opportunity for further comments. The key areas of feedback and comments that were received focused on: Safety, Directness, Comfort and Cohesion with other NMU routes in the area.

6.2.5. The overall impression from discussions with members of the public was very positive, with feedback received in the consultation period confirming this.

6.3. Options Appraisal – Stakeholder and Landowner Engagement

Public Engagement/Consultation

6.3.1. As a result of the ongoing restrictions associated with the coronavirus pandemic during 2020 and 2021, it was not possible to host a 'face to face' public engagement event for the Options Appraisal stage. It was therefore decided that a Virtual Public Engagement Event would be held from 17th November 2020 until the 18th December 2020 incorporating a live webinar which was held on 24th November 2020.

6.3.2. Details of the public exhibitions, including display materials, exhibition feedback and AMJV responses can be found on the Transport Scotland website.

6.3.3. Attendance statistics were recorded by TS's digital team via Google Analytics. These statistics confirmed that the exhibition was well attended with a total of 4,535 unique page views to the project landing page during the consultation period. There were also 954 unique page views of the virtual exhibition room. Also, 64 members of the public attended the live webinar providing 93 submissions on the Feedback Form.

6.3.4. This feedback was analysed to identify common themes and coded as Positive, Constructive or Negative. For analysis purposes, the definition of these were as follows:

- **Positive** – If feedback is generally positive, i.e. the individual or organisation is happy with the options available;
- **Constructive** – If feedback is generally positive; however, the individual or organisation have included suggested changes or updates they would like to be incorporated in the project;
- **Negative** – If feedback is generally negative, i.e. the individual or organisation is unhappy with the options available with multiple suggestions for change;

6.3.5. **Figure 6-5** illustrates the common themes emerging from the feedback. The findings appear to reinforce the data returned at the baseline assessment, i.e. Safety, Directness and Connectivity were once again identified as key topics. Furthermore, it is apparent that the width and surfacing of the route continue to be considered important to respondents.

6.3.6. The baseline assessment stage feedback suggested the majority of users would be leisure users; however, the feedback received at the Options Appraisal Stage indicates that commuter use was mentioned more regularly than leisure use.

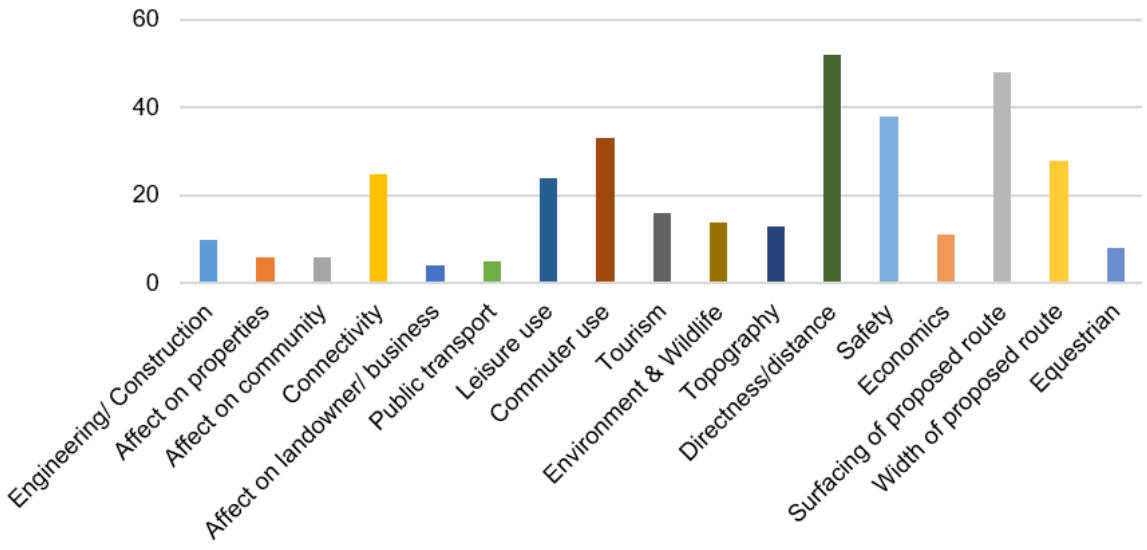

Figure 6-5 - Feedback Common Themes

6.3.7. The analysis of the feedback confirmed that the Blue Route received 61 positive and 1 negative mentions (see **Figure 6.6**). 34 positive mentions related to the directness of the route and 26 related to the connectivity with existing facilities (see **Figure 6.7**).

6.3.8. The Purple Route received 4 positive and 42 negative mentions (see **Figure 6.6**). 28 negative mentions related to the directness of the route and 25 mentions were against the surfacing of the existing Speyside Way (Route Options P1 & P2) (see **Figure 6.8).**

6.3.9. The majority of the feedback received was focussed on the Blue and Purple Routes; however, the Orange Route did receive 10 positive and 0 negative mentions (see **Figure 6.6**).

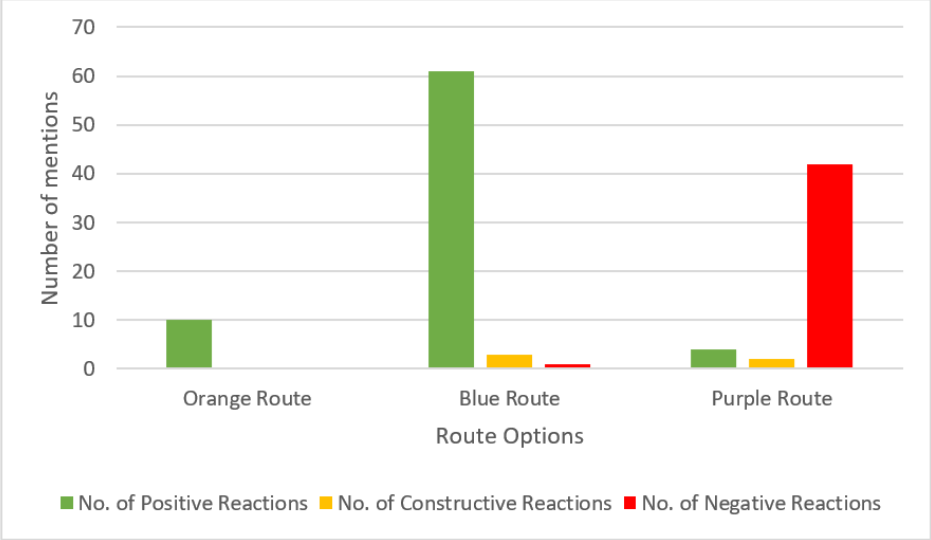

Figure 6-6 - Response Reaction to Route Options

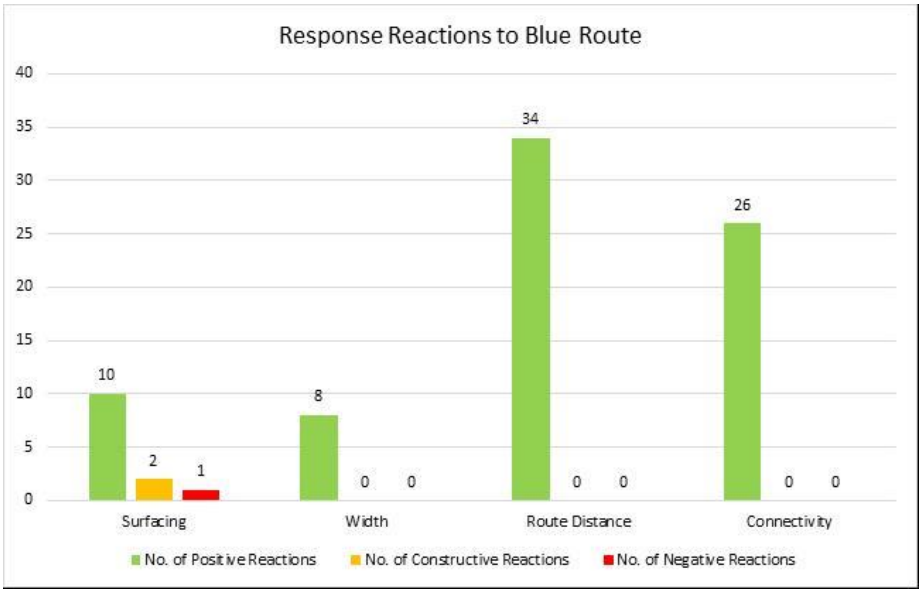

Figure 6-7 - Response Reaction to Blue Route

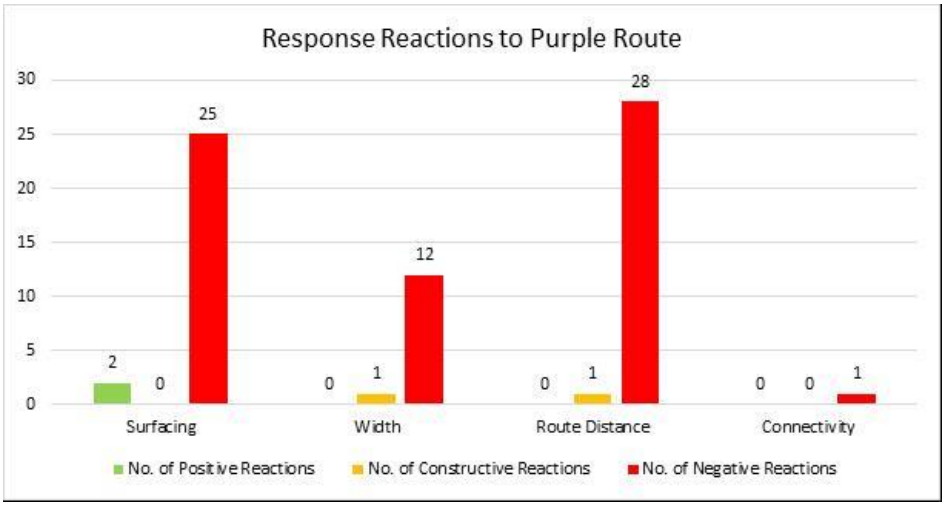

Figure 6-8 - Response reaction to the Purple Route

Stakeholder Consultation

6.3.10. Transport Scotland (TS) has worked closely with CNPA, THC, HITRANS and Sustrans throughout the options appraisal process. This included hosting a Microsoft Teams call to provide an update on progress to date and outlined the emerging options being considered. The comments received from this stakeholder group were generally positive and there was a high level of support for the scheme.

6.3.11. Consultation meetings have been held with TS Roads Directorate and BEAR Scotland to seek feedback with regards to the proposals. No major concerns have been raised by TS Roads or BEAR Scotland in relation to the proposals which affect the Trunk Road network.

6.3.12. Similarly, an initial call was held with Network Rail (NR) to discuss potential interfaces between the NMU proposals and existing NR infrastructure. This largely relates to the need to incorporate existing rail underpasses into potential options; however, it is not anticipated that there will be a need to modify or alter existing structures. Further meetings will be required with NR as the design evolves with a need to establish landownership and rights of access at key points in the design development.

6.3.13. In addition, a presentation was delivered to the A9 Dualling Environmental Steering Group on the 6th October 2020 to provide a provide a project overview and outline the next steps for the project.

Planning Process

6.3.14. Transport Scotland hosted a Microsoft Teams call with the Planning Authority (THC) and CNPA on the 3rd June 2020 to provide a project overview and to better understand the likely planning requirements for promoting the project. The main outcome of this meeting was the need to arrange a Pre-Application Advice meeting at the earliest opportunity.

6.3.15. The Pre-Application Advice meeting took place on the 9th September 2020 which was attended by TS, CNPA, THC, HITRANS and Sustrans. Following on from the meeting, a Pre-Application Advice response pack was received on 15th October 2020 capturing the feedback from the participants on the call and other key stakeholders including NatureScot and Historic Environment Scotland.

6.3.16. TS will ensure the requirements identified in the Pre-Application Advice pack are addressed in advance of future survey work and a subsequent planning application. It should be noted that this will be necessary regardless of the preferred route selected.

Landowner Engagement/Consultation

6.3.17. In May 2020, 144 Land Interest Questionnaires (LIQs) were issued to landowners in the vicinity of the Orange, Blue and Purple Route. Initially, 40 responses were received with completed LIQ returned. In September 2020, TS re-issued the LIQ packs to those who had yet to respond resulting in a further 21 responses. A total of 61 responses were received from the 144 LIQs that were issued. A summary of comments received is provided in Appendix E.

6.3.18. Analysis of the outstanding responses confirms that approximately 80% of the unanswered LIQs relate to properties along Kinchurdy Road and Deshar Road, i.e. the Purple Route.

6.3.19. The LIQs allowed respondents to confirm ownership details and offered an opportunity to provide further feedback on the project. In general, the comments received from those living along the Purple Route were more negative than those living along the Blue Route.

6.3.20. In April/May 2021, in lieu of site visits due to ongoing restrictions associated with the coronavirus pandemic, virtual meetings were offered to all directly affected landowners and occupiers that were identified as being potentially affected by the route options. Through GIS analysis of data from the LIQs and Registers of Scotland tile information, it was possible to identify affected parties.

6.3.21. The views from these parties were fundamental to informing the selection of the preferred route. Further consultation at outline design stage will be required to minimise impacts on landowners as far as possible.

7. Selection of Preferred Route

7.1. Preferred Route Option

7.1.1. The findings of the Options Appraisal Assessment strongly support a combination of the Blue and Orange sub-options to form the preferred route.

7.1.2. This is further reinforced though stakeholder engagement undertaken to date and the majority of the feedback received in response to the virtual public engagement event.

7.1.3. The Orange Route O1 has been identified as the only feasible option at the northern extents of Aviemore which essentially upgrades and takes advantage of an existing shared use path with potential links to the wider network of existing paths. There is also an opportunity to co-ordinate and align with design work being undertaken under the Active Aviemore proposals at the B9152/Dalfaber Drive junction which will provide a logical start/end point for the scheme.

7.1.4. The Blue Route was found favourable between Aviemore and Kinveachy Junction primarily for the following reasons:

- **More direct** – Blue route approximately 5.5km shorter making commuting an attractive option;
- **Safer route** – Both Route options require a crossing of the A95; however, the Blue route crossing locations are located where traffic speeds are anticipated to be lower at the proposed Granish roundabout. The Purple Route has on-carriageway sections through Boat of Garten where the speed limit is 30mph; although traffic volumes are likely to be low this route presents a greater interface with vehicular traffic which would not be required on the Blue Route.
- **Coherence –** Both routes offer improved connectivity with existing path networks; however, the Blue presents an additional opportunity to effectively provide a circular route between the settlements of Aviemore, Kinveachy and Boat of Garten via the Speyside Way / NCN7 and along the existing road corridor; and,
- **Surfacing / width –** A sealed bituminous surface has been identified as the most appropriate solution to cater for the majority of users of the NMU facility. As one of the main goals for the route is to be accessible and attractive to all users, 'Roads for All' states that a bound surface is preferable; however, it is noted that this is not the optimum surface for equestrians. There are concerns raised through consultation that proposals to surface the Purple Route with bituminous material with a 3m width would detract from the rural character of the existing route and have a negative impact on current users. This may not be well supported based on the feedback from key stakeholders and the wider public.

7.1.5. The Orange Route O3 was found more favourable than Orange Route O2 between Kinveachy Junction and Carrbridge primarily due to significant impacts on property frontage and potential land issues along the B9153. The difference between these sub-options were otherwise marginal.

7.1.6. The recommendation for the preferred route is therefore a combination of the Blue Route and Orange Route which will allow the promotion of a more direct and safer route linking well with existing path networks. The recommended preferred route is as follows:

- **Orange Route** – O1 & O3; and,
- **Blue Route** – B1, B3, B4, B6 & B8.

7.1.7. The preferred route is shown in **Figure 7-1** and **Appendix J**.

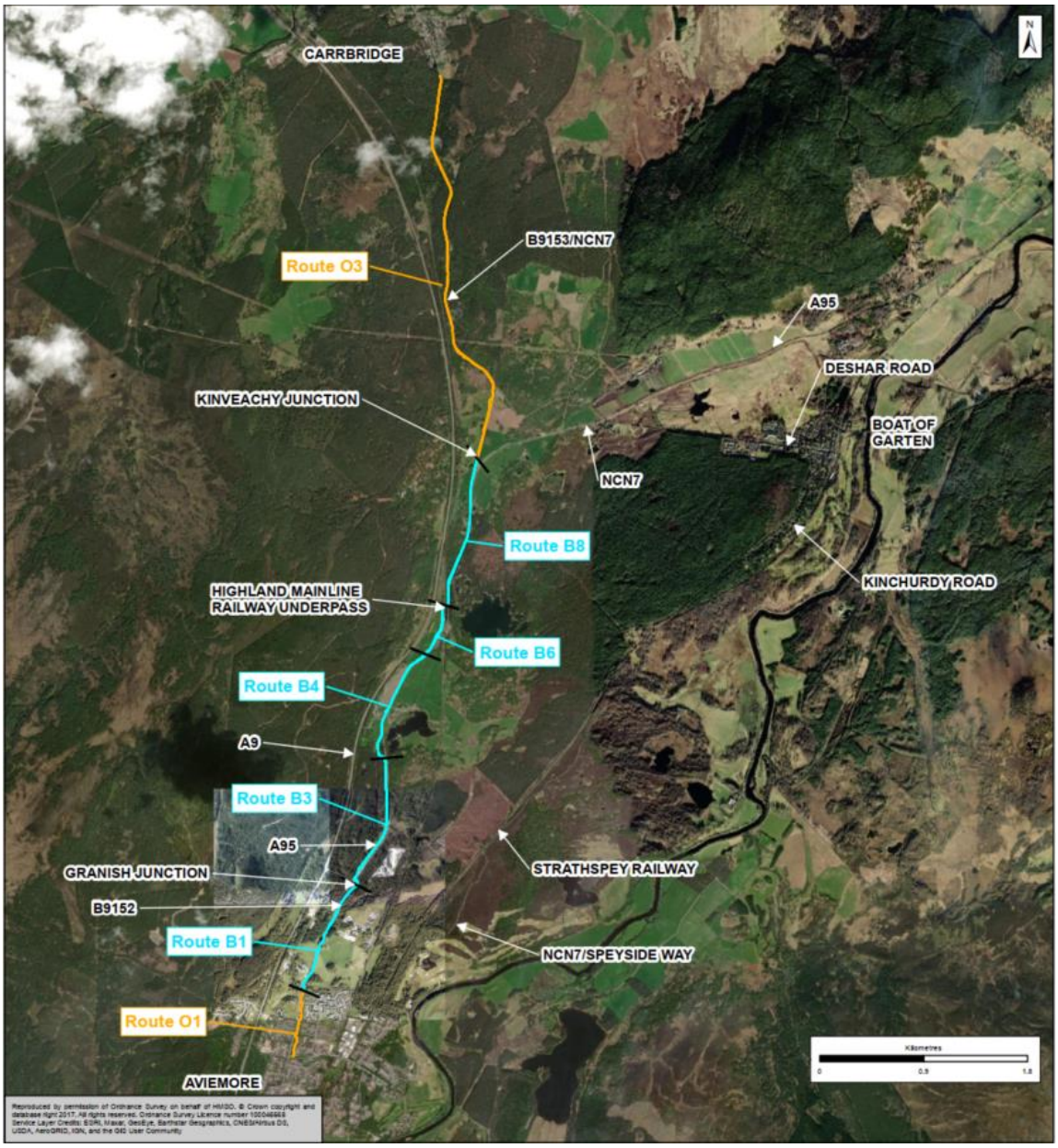

Figure 7-1 Recommended Preferred Route

7.1.8. The cost estimate for the recommended preferred route is approx. £4,370,000.

7.1.9. As described in **Section 3**, this cost estimate is based on construction costs only (including preliminaries (15%), public utility diversions (5%) and optimism bias (25%)) and does not include for risk/opportunity or for land costs and associated

fees. Refer to **Appendix F** for a more detailed breakdown of the individual sub-options including length of sections and cost estimates.

8. Conclusion and Next Steps

8.1. Conclusion

8.1.1. The Options Appraisal process as outlined in this report confirms that the recommendation for the preferred ACNMU route should be a combination of the Orange and Blue routes. This recommendation is further supported by the majority of feedback received during public and stakeholder engagement. The route as recommended will provide a safe and direct NMU route between the settlements of Aviemore and Carrbridge while linking to the wider network of existing paths in the area.

8.2. Next Steps

8.2.1. The following key tasks have been identified as the next steps:

- **Outline Design** – Design work to be progressed for the preferred route to a sufficient level of detail to inform land requirements and the footprint of the proposals for further environmental assessment work and planning application;
- **Environmental Assessment** – An Environmental Impact Assessment will be required to support the planning application. As such, a programme of ecological surveys and assessment work will be necessary;
- **Planning Application** – It is anticipated that the proposals will be considered a major planning application. A further public engagement event is required ahead of the planning submission; and,
- **Land Agreements** - Land acquisition by agreement will follow on from obtaining planning consent.

8.2.2. In addition to the key tasks identified in **paragraph 8.2.1**, there will be the need for ongoing engagement with affected landowners and key stakeholders such as utility providers and the Trunk Road Operator (BEAR) as the detailed design develops.

Appendix A – Constraints Mapping (Engineering)

The drawings contained in this Appendix show the route options and associated engineering constraints as described in **Section 2.5.**

Drawing List

ACNMU-AMJ-HGN-Z_ZZZZZ_CT-DR-RD-0000 – Engineering Constraints – Key Plan

ACNMU-AMJ-HGN-Z_ZZZZZ_CT-DR-RD-0001 to 0006 – Engineering Constraints – Sheet 1 to 6

Appendix B – Constraints Mapping (Environmental)

The drawings contained in this Appendix show the route options and associated environmental constraints as described in **Section 4.3.**

Drawing List

Character Areas

ACNMU-AMJ-ELS-X_ZZZZZ_XX-DR-GI-0004 – Figure B.1 - ACNMU – Statutory Designated Sites within 2km

ACNMU-AMJ-ELS-X_ZZZZZ_XX-DR-GI-0002 & 0006 – Figure B.2 - ACNMU – Ancient Woodland Inventory Figure – 2 Sheets

ACNMU-AMJ-ELS-X_ZZZZZ_XX-DR-GI-0005 & 0007– Figure B.3 - ACNMU – Watercourses and Waterbodies – 2 Sheets

ACNMU-AMJ-EBD-X_ZZZZZ_XX-DR-GI-0001 to 0013 – Figure B.4 - ACNMU – Protected and Priority Species– 13 Sheets

ACNMU-AMJ-EBD-X_ZZZZZ_XX-DR-GI-0014 to 0025 – Figure B.5 - ACNMU – Capercaillie Desk Study Records– 13 Sheets (NOT INCLUDED – CONFIDENTIAL)

ACNMU-AMJ-EGN-X_ZZZZZ_XX-DR-GI-0001 – Figure B.6 – ACNMU – Cultural Heritage

ACNMU-AMJ-ELS-X_ZZZZZ_XX-DR-GI-0001 – Figure B.7 – ACNMU – Landscape Designations

ACNMU-AMJ-ELS-X_ZZZZZ_XX-DR-GI-0003 – Figure B.8 – ACNMU – Landscape

Appendix C – Route Options Plans

The drawings contained in this Appendix show the route options as described in **Section 2.5.**

Drawing List

ACNMU-AMJ-HGN-Z_ZZZZZ_CT-DR-RD-0008 – Options Appraisal Routes Plan

ACNMU-AMJ-HGN-Z_MLZZ_ML-DR-RD-0000 – Route Options – Key Plan

ACNMU-AMJ-HGN-Z_MLZZ_ML-DR-RD-0001 to 0013 – Route Options – Sheet 1 to 13

Appendix D - Summary of Relevant Ecological Legislation in Scotland

Appendix E – Stakeholder and Landowner Information

Appendix F – Outline Cost Estimates

Appendix G – Individual Appraisal Summary Tables

Appendix H – Sifting Table

Appendix I – Route Comparison Table

Appendix J – Preferred Route Plan

The drawing contained in this Appendix shows the preferred route as described in **Section 7.**

Drawing List

ACNMU-AMJ-GEN-X_ZZZZZ_XX-DR-GI-0387 – Preferred Route Plan