

Appendix A

Pairing assessments

A1 Pairing assessment – Blue vs Pink route options

| Pairing Assessment | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | Comment |
| Engineering | | | | |
| Geometric Standard | One step relaxation in desirable minimum horizontal geometry (R720m) on section C2 and horizontal and vertical geometry to desirable minimum or higher on sections B1, B2 & B3. | All sections (C1, Br1, P2, P3, V1 & V2/3) have geometry to desirable minimum or higher. | | Pink Pink is preferred as it achieves desirable minimum or higher over its full length compared to Blue which requires a one-step relaxation in horizontal geometry on section C2. |
| Geotechnics/ Earthworks | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Viaduct structure at Kirkton of Culsalmond crossing the Urie valley, River Urie and associated floodplain (approx.720m long) on alluvium. (C2) Fingask junction (J63) - Flood plain and crossing of Lochter Burn. Crossing of flood plain requires a new underbridge. Ground conditions shown to be alluvium. Additional foundations associated with slip roads at this location. (B2) Embankment (approx. 150m long) up to 9m high on Glen Dye Silts, located just east of Muirton. (B3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Cutting up to 7m deep through alluvium (potentially compressible) as alignment diverges from existing A96. Existing topography results in the cutting to run up the slope. This is localised earthworks between new mainline and re-aligned existing A96. (C2) Cutting up to 8m deep through glacial till/rock at Kirkton Farm. However, a retaining wall will be required due to topography and to limit impact on existing properties. (C2) Cutting up to 6m deep through rock at Mummer's Reive. The cutting chases the existing topography which results in cutting of 10m due to side long ground. Retaining structure likely required between mainline and new Culsalmond side road realignment. (C2) Underbridge over A920 (approx. length 100m), on alluvium. (C2/B1) Snipefield Woods - Embankment >5m in height on alluvium. (B1) Moss of Cairnhill / Bonnyton Burn - Embankment >5m in height on alluvium. (B1) Warthill House woodland - Embankment up to 4m high (approx.200m length) on peat. (B1) Meikle Wartle junction (J9) and proximity of Den Burn – Embankment on alluvial soils associated with Den Burn (150m) and junction underbridge on alluvial soils. (B1/B2) North of Daviot - Cutting through shallow rock up to 18m deep. Cutting extent approximately 550m. (B2) Wicketslap - Cutting greater than 10m deep in till (100m). (B2) Underbridge 70m long crossing the Kings Burn. Ground conditions Alluvium. (B2) West Fingask / East Fingusk - Embankment greater than 10m high on till (50m). (B2) Embankment (approx. 250m long) up to 11m high on glacial till at Lochend of Barra. (B3) Embankment (approx. 100m long) up to 12m high on rock at Smithy cottage. (B3) <p>Other Considerations</p> <ul style="list-style-type: none"> None. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Viaduct structure (approx. 200m long) over the River Urie at Mains of Williamston on alluvium. (P2) Structure (approx. 150m long) crossing the Bonnyton Burn ground conditions shown to be alluvium. (P3) Embankment (approx. length 250m) up to 7m high on peat at Pitscurry Moss. (V1) Underbridge and embankments greater than 5m high over Lochter burn and associated floodplain, on alluvium and Glen Dye Silts. (structure length approx. 230m, embankment length approximately 750m) at Uryside junction (J22). (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Cutting up to 7m deep through alluvium (potentially compressible) as alignment diverges from existing A96. Existing topography results in the cutting to run up the slope. This is localised earthworks between new mainline and re-aligned existing A96. (C1) Embankment up to 5m high on alluvium near Morgan McVeighs. The embankment side slopes chase the existing ground profile. (C1) Embankment (approx. 100m long) up to 11m high on glacial till at Boghead. (C1) Cutting up to 13m deep through rock/glacial till at Fallow Hill. (C1) Embankment (approx. 100m long) up to 12m high on alluvium between the A96 and River Urie Crossing at Mains of Williamston. (P2) Cutting (approx. 100m long) up to 11m deep through glacial till in proximity to Brankanentum. (P2) Embankment (approx. 150m long) approximately 11m high on glacial till at Gleniston Cottage. (P2) Cutting up to 12m deep (approx. 150m long) through glacial till at Bishopton. (P3) Cutting up to 11m deep (approx. 150m Long) through rock/glacial till at Gallows Hill. (P3) 2 No. 100m long structures (mainline and slip road) crossing the Burn of Durno. Ground conditions shown to be alluvium. (P3) Embankment (approx. 100m long) up to 12m high on sand and gravel at Burn of Durno. (P3) Cutting up to 15m deep between Burn of Durno and Pitscurry Moss through rock. (V1) Cutting and embankment greater than 10m on/through glacial till and rock required for Uryside junction (J22), eastbound slip roads and junction connection. Westbound half of junction sits on Glen Dye Silts. (V2/V3) <p>Other Considerations</p> <ul style="list-style-type: none"> None | | Pink Pink has one more major impact compared to Blue, however Blue has more moderate impacts. Overall the two routes have broadly similar impacts and therefore no preference between the routes. |
| Structures | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Viaduct at Kirkton of Culsalmond approximately 720m in length with long spans crossing variable topography, Urie Valley, River Urie and floodplain. (C2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Approximately 200m length of retaining wall 12-15m high to Kirton Farm and Culsalmond. (C2) Approximately 60m length of retaining wall 3-4m high associated with Culsalmond side road realignment adjacent to Mummer's Reive. (C2) Underbridge over A920 at junction 2, Adverse construction and O&M requirements due to interface with an A class road, length 100m. (C2/B1) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Underbridge for existing A96, length 100m. Adverse construction interface with existing A class road. (P2) Underbridge over River Urie and floodplain, length 200m, Pier Height 15m. (P2) Underbridge crossing over a watercourse (Burn of Durno) and its associated flood plain for mainline, overall length to approx. 100m. (P3) | | Pink Pink is preferred as Blue requires a major structure at Kirkton of Culsalmond over the River Urie and significant retaining structures adjacent to Kirkton Farm and Mummer's Reive. |

| Pairing Assessment | | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | Comment | |
| | <ul style="list-style-type: none"> Underbridge over Lochter Burn, length 80m. Adverse construction and O&M requirements. (B2) Underbridge to span over King's Burn and flood plain, length 70m. Adverse construction and O&M requirements. (B2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Underbridge over Lochter Burn, length 80m. Adverse construction and O&M requirements. (B2) Underbridge to span over King's Burn and flood plain, length 70m. Adverse construction and O&M requirements. (B2) <p>There are a further eleven side road crossings required:</p> <ul style="list-style-type: none"> Underbridge for B992 and burn at Newbigging. (B1) Overbridge at Smiddyhowe / Tocher. (B1) Underbridge at Nether Tocher. (B1) Overbridge at Meikle Wartle. (B1) Underbridge on B9001 for proposed Meikle Wartle junction (J9). (B1/2) Overbridge for Daviot to Whitemyres. (B2) Overbridge for Daviot to Wicketslap. (B2) Underbridge Netherton of Mounie. (B2) Underbridge for Fingask junction (J63). (B2/3) Overbridge for Mill of Bourtie to Lochend of Barra. (B3) Underbridge on B9170 for Barra Junction (J16). (B3) | <ul style="list-style-type: none"> Slip road at Durno junction (J21) requires additional structure to cross Burn of Durno and floodplain. (P3) Underbridge over Lochter Burn and floodplain at Uryside junction (J22), length approximately 230m due to high level difference. (V2) Bonnyton Burn - Underbridge over watercourse and adjacent flood plain (150m). (P3) <p>Other Considerations:</p> <p>There are a further eleven side road crossings required and two watercourse/floodplain crossings:</p> <ul style="list-style-type: none"> Underbridge for Colpy junction (J3). (C1) Overbridge for Lawrence Road at Mellenside. (P2) Underbridge for Lawrence Road/realigned B992 at Lawrence Road junction (J13). (P2) Overbridge for Old Rayne to Bonnyton. (P3) Overbridge for Mill of Bonnyton. (P3) Overbridge for Old Rayne to Durno. (P3) Underbridge for Bishopston. (P3) Underbridge at Mackstead for C Class road. (V1) Underbridge associated with Daviot junction (J62). Junction proposal allows B9001 to be crossed by a simple underbridge with two C Class side roads locally realigned at junction to use the single underbridge. (V1) Underbridge on B9170 for Uryside junction (J22). (V3) Underbridge for C Class road and Ides Burn at Lethenty House but potential opportunity to remove structure as part of Uryside junction (J22) realignment of side roads. (V2) B9001 and Ides Burn Crossing at Daviot junction (J62). In this vicinity there is a need for a large culvert watercourse crossing (3m wide x 2m high). (V1) North of Hillhead of Lethenty, a viaduct is required to span up to 150m of floodplain associated with the Ides Burn. (V2) | | | |
| Drainage & Hydrology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Viaduct structure over variable topography, Urie Valley, River Urie and floodplain with crossing at skewed angle resulting in a longer structure. Third-party requirements (SEPA) may have an adverse impact on construction programme and / or result in complex construction methodologies. (C2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> Potential diversion of Urie required but impact captured by Environment Water Discipline. Seven watercourse crossings – six culverts and one underbridge. Two attenuation impacts. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Diversion of Ides Burn and relocation of associated floodplain. Large culverted crossing (3m wide by 2m high) of new road required and provision of compensatory storage. Although, poor quality watercourse, opportunity for betterment. (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> One location with culvert on tributary. Three watercourse crossings on Jordan Burn, tributary, Bonnyton Burn and River Urie. Two attenuation impacts on River Urie and tributary. | | Pink | Pink is preferred as Blue requires a major structure across the River Urie flood plain at Kirkton of Culsalmund. |
| Utilities | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Crossing of SSE 275kV electricity transmission lines at Tocher. (B1) Muirton - Skewed crossing of National Grid 1050mm gas pipeline. Diversion / replacement of pipe required. (B3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> West of Bourtie House - Alignment crosses 300mm Scottish Water (water main) apparatus. Alignment in cut requiring diversion of pipe. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> None | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> SSE High Voltage 275Kv line crossing at Colpy for mainline dual carriageway and realignment of the existing A96. Crossing at 90 degrees and therefore diversion unlikely. (C1) South of Durno - Crossing of 275kV electricity transmission lines. (P3) Newton of Lewesk/Lawfolds - skewed crossing of SSE 275kV electricity transmission lines (P3) 1050mm dia. National Grid High Pressure Gas Main crossing near to Lethenty House. Additional crossing of same National Grid pipeline at Uryside junction (J22) for slip road and for connection to B9001. (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Uryside junction (J22)– Scottish Water (300mm main) apparatus crosses mainline in vicinity of proposed underbridge location and eastbound slip roads and loop. Diversion will be required. (V2) <p>Other Considerations</p> <ul style="list-style-type: none"> Non | Blue | | Blue is preferred as it has fewer interfaces with major utility apparatus. |

| Pairing Assessment | | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | | Comment |
| Residual hazards for mitigation (CDM) | <p>The following hazards were identified:</p> <ul style="list-style-type: none"> Interaction with live traffic and working near carriageway. SSE 275kV overhead transmission lines crossing. Potentially compressible material where structure is proposed over River Urie and the A920. Construction of major watercourse crossing associated with River Urie – high / long/complex structure with limited access. Maintenance activities associated with inspection of structure Difficulties and H&S hazards associated with working near and over watercourses and in areas of floodplain. In particular, the Viaduct at River Urie has significant challenges in working at height and complexity of structure. Diversion / replacement of section of crossing major gas main. Cuttings in shallow rock may require blasting. | <p>The following hazards were identified:</p> <ul style="list-style-type: none"> Difficulties and H&S hazards associated with working near watercourse and on a floodplain as well as working at height at Lochter Burn. Cuttings in shallow rock may require blasting. Interaction with live traffic and working near carriageway. Potentially compressible material where structures and embankments are proposed over Jordan Burn, the existing A96 and River Urie. Crossing of SSE 275Kv overhead transmission lines. Embankments on peat requiring regular maintenance Potentially compressible material where structures and embankments are proposed over Jordan Burn, the existing A96 and River Urie. Diversion / replacement of section of crossing major gas main Cuttings in shallow rock may require blasting. | | Pink | Pink is preferred due to the significant challenges presented by the major structure over the River Urie on Blue. |
| Cost | <p>Comparative cost 110%</p> <ul style="list-style-type: none"> The Blue route option has a larger overall volume of earthworks compared to the Pink route option. The Blue route option also requires a long and complex viaduct (approx. 720m) to cross the River Urie at Kirkton of Culsalmond | <p>Comparative cost 100%</p> | | Pink | The combination of higher earthworks and structures cost results in the Blue route option being more expensive than the Pink route option, therefore the Pink route option is preferred. |
| Overall Engineering Summary | <ul style="list-style-type: none"> Blue performs better for Utilities. Pink performs better for Standards Compliance, Structures, Drainage & Hydrology, Residual Hazards and Cost. Overall Pink is better performing and is therefore preferred. | | | Pink | |
| Environmental | | | | | |
| Landscape & Visual | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Visual impacts on the receptors in Kirkton of Culsalmond. (C2) Colpy junction (J2) located at Snipefield adds to the visual intrusion in this area due to significant earthworks, however the impact remains as major adverse. (C2/B1) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting impacts on Scheduled Monument Mummer's Reive Cairn for approximately 200m (with limited opportunities for mitigation). (C2) Setting impact on Williamston House GDL. (C2) Approximately 500m of earthworks of 5-15m in height across the Snipefield woodland plantation. (B1) Length of alignment within undesignated areas of high landscape sensitivity Area 3 (C2/B1), Area 10 (B1), and Area 15. (B3) Ancient woodland impacted at Meikle Wartle. (B1) The Meikle Wartle junction (J9) has potential to impact on visual receptors at Northside and Pardes of Glack and severs woodland (B1/B2) The Barra junction (J16) severs ancient woodland. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> None | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Visual impacts on receptors in Colpy. (C1) Colpy junction (J3) is likely to add to the visual intrusion at Colpy, however the impact remains as major adverse. (C1) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Long sections of earthworks 5-15m, including loss of ancient woodland. (C1) Severance of tree lines and impacts on the setting of Newton House Inventory GDL as well as in the landscape connectivity between this GDL and Williamston House Inventory GDL. (P2) Many earthworks of 5-15m in height and depth, and a new structure of >15m in height across the River Urie to the south of Mains of Williamston. (P2) Length of alignment within undesignated areas of high landscape sensitivity Area 4 (C1), Area 8 (P2), Area 12 (P3/V1) and Area 15 (V2). Colpy junction (J3) impacts on the setting of Colpy and impacts ancient woodland at Jordan Burn. (C1) Lawrence Road Junction impacts on the NE corner of Newton House GDL at Lawrence Road (B992) and on the setting of this GDL. (P2) Durno junction (J21) impacts ancient woodland due to the slip roads for the roundabout. (P3) Uryside Junction impacts on the setting of Battle of Harlaw battlefield due to the formation of the roundabout access roads to B9001. This junction impacts ancient woodland to the SW and from the proposed roundabout at B9170. <p>Other Considerations:</p> <ul style="list-style-type: none"> Mitigation could reduce the impacts on the setting of the two GDLs. | | Blue | Blue is preferred as it has less impact on GDLs, is a better fit in the natural topography, has fewer structures and affects less ancient woodland. There are more visual receptors on Blue but there may be more opportunity for mitigation than on Pink. |
| Water | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> River Urie crossing s skewed, taking a longer route across the floodplain than the Pink route. (C2) A short realignment may be required where the route passes close to the River Urie, however, the floodplain is confined within a steep-sided valley with limited space for realignment. (C2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> 18 watercourse crossings are required, five of which are named water bodies. Potential realignments of three unnamed watercourses with a total approximately 675m of watercourse to be realigned. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Ides Burn – route crosses the edge of a wide area (~325m) of floodplain). (V3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> River Urie crossing is perpendicular to flow, taking a shorter route across the floodplain than the Blue route. (P2) 16 watercourse crossings are required, four of which are named water bodies. Potential need for realignments of four unnamed watercourses with approximately 1,375m of existing watercourses to be realigned. | | Pink | Pink crosses more locations with mapped floodplain and has a greater length of realignment than Blue. The C2 section on Blue route passes near the River Urie and there are challenges at this location for realignment due to the narrow valley and potential for active morphology. From the assessments undertaken to date, there is more opportunity to |

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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | Comment |
| | <ul style="list-style-type: none"> Fingask junction (J63) crossing of Lochter Burn will need to be longer to accommodate the slip roads. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Colpy junction (J2) may require an additional crossing of a minor watercourse. (C2/B1) At Meikle Wartle junction (J9) the slip road impacts a minor watercourse and will require a short diversion and an additional watercourse crossing (minor watercourse). The floodplain here is not mapped (catchment is too small). (B1) Route crosses four additional areas of mapped floodplain: <ul style="list-style-type: none"> Bonnyton Burn floodplain ~ 60m wide. (B1) Kings Burn floodplain ~ 50m wide. (B2) Lochter Burn floodplain ~ 60m wide. (B2) Tributary of Lochter Burn floodplain ~ 80m wide. (B2) | <ul style="list-style-type: none"> At Daviot junction (J62) the slip road is located within the floodplain of the Ides Burn. The Ides Burn and a minor tributary will need to be diverted (see Engineering). The side road connecting B9001 to the northbound roundabout also crosses Ides Burn and existing floodplain. An assessment of flood risk to the new road infrastructure will be required and compensatory flood storage provided. (V1/V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Colpy junction (J3) is likely to require additional crossing or crossings of minor watercourse, and potentially a short realignment. (C1) The slip road at Durno junction (J21) may require the crossing of the Burn of Durno to be wider and could encroach on the floodplain. (P3) Route crosses additional six areas of mapped floodplain: <ul style="list-style-type: none"> River Urie floodplain ~ 90m. (P2) Bonnyton Burn floodplain ~ 60m wide. (P3) Burn of Durno floodplain ~ 60m wide. (P3) Tributary of Ides Burn floodplain ~ 50m wide. (V2) Ides Burn floodplain ~ 60m wide. (V2) Lochter Burn floodplain ~ 85m wide. (V2/V3) | | mitigate impacts on Pink than Blue and therefore Pink is preferred. |
| Ecology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> River Urie crossing which is a named SEPA water body, with a floodplain that is likely to contribute to the overall habitat connectivity of the area and may be affected. (C2) Impact on southern part of Wartle Moss LNCS. This is likely to be hydrologically connected to Wartle Moss SSSI which is located north of the A920, and therefore, although the land take is not considerable, the impact on the hydrology of the area could be significant and cause adverse impacts to the SSSI. (B1) <p>Other Considerations:</p> <ul style="list-style-type: none"> This route would skirt immediately to the south of Cairnhill LNCS and potentially cause adverse impacts to this site to the south of the A920. (B1) Minor water crossings would be required for both routes. Mitigation would be focussed on the impacts caused to two designated sites. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> River Urie crossing, which is a named SEPA water body, with a floodplain that is likely to contribute to the overall habitat connectivity of the area and may be affected. (P2) Pitscurry Moss LNCS. (V1) This route has the potential to sever high and moderate habitat corridor west of Durno. <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor water crossings would be required for both routes. Mitigation would focus upon alleviating the effects of fragmentation, through incorporation of green bridges and/or underpasses. Mitigation for crossing the River Urie would likely be through the design of a single span structure which does not directly impact the watercourse or the surrounding riparian habitat. (P2) | | Pink Pink impacts on a designated site of local importance. Blue impacts on Wartle Moss LNCS which is likely to be hydrologically connected to Wartle Moss SSSI, which is of national importance and therefore Pink is preferred. |
| People & Community | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Severance of the community at Culsalmond/Snipefield. (C2) Snipefield Wood community facility is directly impacted. (B1) Colpy junction (J2) has potential impact the community due to the earthworks associated with the side road. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Approximately 8.5km of the route falling within prime agricultural land (PAL) which would be lost. Meikle Wartle junction (J9) is located on PAL. (B1/2) Fingask junction (J63) is located within PAL minor adverse impact on cycle path GA3. (B2/3) Barra junction (J16) is located on PA. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor impact due to severance of cycle path at one location. (B2) Minor adverse impact due to severance of a core path at two locations. (B1) Meikle Wartle junction (J9) impacts on cycle path GA3. (B1/2) Fingask junction (J63) impacts on cycle path GA3. (B2/3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Severance of the community at Colpy. (C1) Private commercial property lies on the earthworks. (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Approximately 10km of the route falling within prime agricultural land (PAL) which would be lost. Colpy junction (J3) is partially located on PAL (C1) Lawrence Road junction (J13) is located on PAL. (P2) Durno junction (J21) is located on PAL (P3) Uryside junction (J22) is located on PAL. (V2/3) Daviot junction (J62) is located on PAL (V1/2) <p>Other Considerations:</p> <ul style="list-style-type: none"> 200m of Local Development Land (LDP) Reserved Land for a northern link road would be affected. The link road has been built with landscape works to be completed. This area would be replaced with embankment and planting. (V2) Severance of cycle path at two separate locations. (P3/V1) Severance once each of three different core paths. (P3) Daviot junction (J62) impacts cycle path GA3. (V1/2) | | Pink Pink is preferred as Blue severs the community around Culsalmond and Snipefield with a direct major impact on Snipefield Wood which is a community woodland. Both routes have a similar impact on prime agricultural land. |

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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | Comment |
| Noise | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> There are potential beneficial effects upon receptors located immediately adjacent to the existing A96, including communities of Inverurie, Whiteford and Old Rayne. This is due to existing traffic being rerouted to areas with fewer receptors. Potential adverse impacts on receptors close to Kirkton of Culsalmond (C2), Meikle Wartle (B1) and Daviot (B2). <p>Other considerations:</p> <ul style="list-style-type: none"> Within 300m of the proposed route, there are 74 residential receptors. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> There are potential beneficial effects upon receptors located immediately adjacent to the existing A96, including communities of Colpy, Inverurie, Whiteford and Old Rayne. This is due to existing traffic being rerouted to areas with fewer receptors. There are potential adverse effects upon the scattered receptors located around the proposed route. <p>Other considerations:</p> <ul style="list-style-type: none"> Within 300m of the route, there are 101 residential receptors, 1 Hotel and two Local Development Plan (LDP) Opportunity Sites (including App/2008/4145 for 253 houses and 4 commercial units, APP/2017/1367 erection of 416 dwelling houses and 4 commercial units). | Blue | Blue is preferred as there are fewer receptors and no LDP Opportunity Sites in its vicinity. |
| Air Quality | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> Less receptors within 200m of Blue route than the Pink Route. There are no significant LDP Opportunity Sites within 200m of the route corridor. It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation or that increases in concentrations will be significant. Concentrations of NO2 and PM will be slightly higher nearby junctions due to increased emissions associated with accelerating/ braking actions. However, as mentioned previously, background concentrations throughout the study area are low and conditions favourable for pollution dispersion. When considering low background concentrations and anticipated traffic flow across the route sections, it is unlikely that the introduction of junctions along either the Blue or Pink/Violet routes will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to and at these locations. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Significant LDP Opportunity sites at Inverurie & Port Elphinstone settlement area. <p>Other Considerations:</p> <ul style="list-style-type: none"> There are more receptors within 200m of the Pink route than the Blue route. It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation, and due to the proximity of the route to the current A96 route it is unlikely that any changes in concentrations will be significant. Concentrations of NO2 and PM will be slightly higher nearby junctions due to increased emissions associated with accelerating/ braking actions. However, as mentioned previously, background concentrations throughout the study area are low and conditions favourable for pollution dispersion. When considering low background concentrations and anticipated traffic flow across the route sections, it is unlikely that the introduction of junctions along either the Blue or Pink/Violet routes will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to and at these locations. | Blue | Blue is preferred due to the lower numbers of receptors and avoidance of the LDP Opportunity Sites. |
| Cultural Heritage | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> The route runs between the Loanhead of Daviot Stone Circle & enclosed cremation cemetery (SM90202 & PIC) and Newcraig, stone circle (SM37)/New Craig, cupmarked boulder (SM12154). The route would be 0.3km to the north of Loanhead, stone circle (SM90202) and 0.1km south of Newcraig, stone circle (SM37). Key views are to the SSW from Newcraig stone circle over the recumbent stone and the intervisibility between the sites at Newcraig and the Loanhead stone circle are key. Loanhead stone circle is a Promoted Visitor Site and an Historic Environment Scotland (HES) Property in Care. HES consider that the route would have a significant effect on the setting of these three scheduled monuments and have raised this as a significant issue. (B2) Setting of Culsalmond Old Parish Church (Category A Listed Building LB2960). The proximity of the route to the Old Parish Church would substantially alter its current rural setting and mitigation would not reduce the impact. (C2) Setting of Mummers Reive Cairn (Scheduled Monument SM11629). It is situated at a prominent location on the hill of Meikle Tom and has extensive views to the east through to west. The presence of the route in immediate proximity would detract from the cairn's prominent location and mitigation would not reduce the impact. (P1) At the Colpy junction (J2) (located at Snipefield), the impact on setting of Mummers Reive Cairn (Scheduled Monument SM11629) will remain as major adverse. (P1) Setting of Mounie Castle (LB2793). The castle is set within the remnants of a small non-inventory designed landscape which forms its setting. Mature woodland is situated to the north-east of the listed building and screens views out from the castle (although views out may be achievable from upper storeys). Key views within the setting of the castle are the tree lined avenues which form part of the designed landscape. The route runs c.0.3km to the south-west of the castle and would bisect an avenue which runs to the south-west from the castle. (B2) Colpy junction (J2) would have a direct effect on Scheduled Monument Mummer's Reive, cairn (SM11629). (C2/Br1) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Colpy Cottage (SM11511). The site comprises a prehistoric enclosed settlement visible as a cropmark on aerial photographs, but which cannot be seen on the ground. (C1) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Colpy Cottage, palisade enclosure (Scheduled Monument SM11511). The site comprises a prehistoric enclosed settlement visible as a cropmark on aerial photographs, but which cannot be seen on the ground. (C1) Colpy junction (J3) will add to the major adverse impact on Colpy Cottage, palisade enclosure (Scheduled Monument SM11511). (C1) Setting of Williamston House Inventory GDL (GDL00386) located east of the route. The route would be visible in key views out to the south-west from Williamston House, which lies at the centre of the GDL, but the edges of the GDL are tree-lined and would help screen views of the route. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (Br1/P2) Setting of Durno, Roman temporary camp (SM4123) which survives as a cropmark site. As a defensive site, it was intentionally situated to have extensive views of the surrounding land. Views towards Bennachie are also of importance (Bennachie is believed to have been the site of the battle of Mons Graupius and Logie Durno may represent the Agricola camp for the battle). The route passes within 100m of the north-eastern corner of the Scheduled Monument. (P3) Setting of Newton of Lewesk, enclosure (SM12137) which survives as a cropmark feature visible on aerial photographs. Its location cannot be readily appreciated on the ground. The visual connection with the adjacent site of Durno Roman Temporary Camp (SM4123) may be of importance but would not be affected by the route. The route passes immediately to the north of the SM. (P3) Setting of Pitscurry, cairn (SM12302). The site comprises a Bronze Age burial cairn sited on the summit of a hill 200m to the south of the route. (V1) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Newton House Inventory GDL (GDL00300) located south of this route. The proximity to the route may affect the setting of the GDL. Additional tree planting along northern edge of GDL would help screen views of the route and minimise impact. (P2) Setting of The Law, cairn (SM12113) located 300m north-east of the route. The SM was intentionally situated at the summit of East Law and has extensive views across the | Pink | Pink is preferred due to the relatively lower number of high level/sensitive heritage assets that would be potentially affected. Blue is in immediate proximity of Mummers Reive, cairn (SM11629) and would detract from its prominent location having a significant impact on its setting. Blue also impacts on Loanhead, stone circle & enclosed cremation cemetery (SM90202 & PIC), Newcraig, stone circle (SM37) and New Craig, cupmarked boulder (SM12154). The route would be 0.3km to the north of Loanhead, stone circle (SM90202) and 0.1km south of Newcraig, stone circle (SM37). Key views are to the SSW from Newcraig stone circle over the recumbent stone and the intervisibility between the sites at Newcraig and the Loanhead stone circle are key. Loanhead stone circle is a Promoted Visitor Site and an Historic Environment Scotland (HES) Property in Care. The proximity of the route would cause a significant change to the surroundings of the scheduled monument. HES consider that the route would have a significant effect on the setting of these three scheduled monuments and have |

| Pairing Assessment | | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | | Comment |
| | <ul style="list-style-type: none"> Setting of Williamston House Inventory GDL (GDL00386) south of the route. Additional tree planting to provide screening and/or suitable landscaping would help minimise the impact upon the setting of the GDL. (C2) Williamston House Inventory GDL (GDL386) lies to the south 0.1km at its closest point. The route would not be visible in key views out to the south-west from Williamston House, which lies at the centre of the GDL. The route would be a new modern feature within a rural landscape visible from farmland that forms the northern half of the GDL, however, its presence in the wider landscape surrounding the GDL would unlikely significantly affect the setting of the GDL. (C2/B1) Setting of Battle of Barra Inventory Historic Battlefield (BLT18) to the east of the route. The route would be visible running passed the western edge of the battlefield. The route would not affect the core battlefield area or cross any of the lines of advancing/retreating troops (as currently understood). The route would be visible in the wider landscape surrounding the battlefield and would add a major new feature to the landscape in the vicinity of the battlefield, although intervening topography and shelterbelts/trees edging fields and roads would provide some screening from the core battlefield area. The main area of fighting is believed to have taken place to the northwest of the Hill of Barra. The hill would have provided and continues to provide an excellent elevated location from which to view the wider battlefield landscape. The construction of the route within a relatively unchanged rural landscape northwest of the battlefield area would add a major new feature to the landscape near the battlefield. (B3) Setting of Bourtie House (Category A Listed, LB2819) east of the route. Principal views from the house are aligned south overlooking areas of parkland and surrounding arable fields. Some screening of views out from the house is provided by existing surrounding woodland/shelterbelts. Additional tree planting to provide screening and/or suitable landscaping would help minimise the impact. (B3) Fingask junction (J63) would be near Category B Listed Fingask House (LB2798). Some screening of the route and proposed junction is provided already by trees that edge the garden in which the listed building stands. Additional tree planting to provide screening and / or suitable landscaping would help minimise the setting impact. (B2/3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Setting of Barra Castle (Category A Listed, LB2821) just over 1km from the route. The castle stands just west of the B9170 public road within a small associated designed landscape and views from the castle are principally to the west overlooking surrounding arable farmland. The route would introduce a new modern feature to the currently predominately arable landscape over which the castle looks. (B3) Setting of Hill of Barra, fort (SM3997), over 1.9km southwest of the route. The fort stands at the summit of Hill of Barra and has open, wide views out in all directions. The route would introduce a new modern feature to the currently predominately rural landscape which surrounds the fort. (B3) Setting of Fingask House (Category B Listed, LB2797) 500m northeast of the route (B3). Views from the house are aligned principally to the south south-west, overlooking surrounding arable farmland. Some screening of the route and proposed junction is provided already by trees that edge the garden in which the house stands. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (B3) Barra junction (J16) located 500m north of Category A Listed Bourtie House. The junction would not be visible in key views from the house to the south. The listed building is surrounded by mature woodland which would provide screening out to the junction. (B3) | <p>surrounding landscape. Views to the north-east towards White Inches cairn (SM12188) form a key element of its setting but would not be affected by this route. The route would be set down slope from the cairn (to the south/southwest), would unlikely interfere with the current open views from the cairn to the south and would not change the natural slope/topography of the hill on which the cairn stands. (P3)</p> <ul style="list-style-type: none"> Setting of Bourtie House (Category A Listed, LB2819) located north of the route. Principal views from the house are aligned south overlooking areas of parkland and surrounding arable fields. Some screening of views out from the house is provided by existing surrounding woodland/shelterbelts. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (V2) Setting of Battle of Harlaw Inventory Historic Battlefield (BLT11) located west of the route. The battlefield covers a slightly raised, flat, plateau to the north of Inverurie Town. Principal views from the battlefield look to the south. The route would not affect the core battlefield area or cross any of the lines of advancing/retreating troops (as currently understood), nor visible in principally views to the south. The route would run along the eastern edge of the battlefield, and intervening topography would screen views of the route from the core areas of the battlefield. (V2) Colpy junction (J3) - Williamston House Inventory GDL (GDL386) lies to the east of the junction, which will be on the opposite side of the existing A96 from the GDL. The junction would not be visible in key views out to the south-west from Williamston House, which lies at the centre of the GDL. The edges of the GDL are tree-lined and would help screen views of the junction. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (C1) <p>Other Considerations:</p> <ul style="list-style-type: none"> Culsalmond Parish Church (Category A Listed Building LB2960) is located to the east of the route (C1). Its setting is unlikely to be significantly impacted as the route would lie to the west, beyond the existing A96 road. (C1) Lawrence Road junction (J13) - Newtown House Inventory GDL (GDL300) lies to the immediate south-west of the junction. Key views out from the GDL are south from the House at its centre and would not be affected by this junction. The edges of the GDL are tree-lined and would help screen views of the junction. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (P2) Durno junction (J21) is west of Pitscurry Cairn (SM12393). The junction is likely to be visible in the wider landscape setting of the scheduled monument. The junction would be over 0.7km from the cairn and set down in the valley and would not interrupt views out from the cairn. (P3) Uryside junction (J21) is immediately east of Battle of Harlaw Inventory Historic Battlefield. Intervening topography would principally screen views of the junction from the core areas of the battlefield and the presence of the junction would not affect an ability to understand or appreciate the landscape context of the battlefield. (V2/3) Daviot junction (J62) is 800m from the Battle of Harlaw Battlefield. The junction would introduce a new modern feature to the wider landscape setting of the battlefield but would not affect the core of the battlefield or affect an ability to understand or appreciate the landscape context of the battlefield. (V1/2) | | | raised this as the most significant issue in relation to the proposed routes. |
| Plans & Policies | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> The route is close to several small scale committed developments. (C2, B1, B2) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> none <p>Other Considerations:</p> <ul style="list-style-type: none"> Colpy junction (J3) Junction is close to a small scale committed development. (C1) The route passes close to several small-scale committed developments. (P2, P3) Route is adjacent to an approved application for 'Erection of Additional 200kg Explosive Storage Bunker and 10kg Deto Annexe'. (V1) The route does impacts on an area of Local Development Plan Reserved land for the northern link road and landscaping improvements, to the north of Inverurie. However, the link road itself is complete, but some landscaping works are ongoing. (V2) | Blue | | Blue is preferred as it does not infringe on any LDP reserved land. |
| Soil & Geology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> | | | There is no preference between the routes. Pink impacts on more prime agricultural land, while Blue has a bigger impact on peat and the |

| Pairing Assessment | | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | | Comment |
| | <ul style="list-style-type: none"> 8,000m of the route is within PAL (7,450 Class 3.1, 550m Class 2). Fingask junction (J63) is located entirely on Class 2 PAL. (B2/3) Barra junction (J16) is located entirely on PAL. (B3) Meikle Wartle junction (J9) is partially located above potential peat (associated with Den Burn) and PAL. (B1) <p>Other Considerations:</p> <ul style="list-style-type: none"> 1,400m of the route is within peat (200m Peat, 1,220m Potential Peat). 150m of potential (SNH) peat adjacent to the B992 (embankment) 400m of potential (SNH) peat associated with Moss of Cairnhill (embankment) 150m potential peat at Viewfield (embankment) 150m potential peat at Nether Tocher (embankment) 200m Peat at Wartle (embankment) 150m potential (SNH) peat at Wartle (embankment) 150m potential (SNH) peat at Den Burn (embankment) 120m potential (SNH) peat at Pardes of Glack (embankment) Potential contamination sources: - <ul style="list-style-type: none"> Historic pit adjacent to the existing road at Hill of Skares. Former quarries at Tocher, Mounie and Netherton of Mounie. Former railways at Burn of Wartle and Lochter Burn. | <ul style="list-style-type: none"> 9,700m of the route is within PAL (Class 3.1). Colpy junction (J3) and associated slips is partially on PAL.(C1) Lawrence Road junction (J13) is mostly on PAL. (P2) Durno junction (J21) roundabouts and most of the footprint is on PAL. (P3) Both roundabouts at Daviot junction (J62) and most of the footprint is on PAL. The embankments are partially on potential peat. (V1/2) Uryside junction (J22) is located entirely on PAL and historic tanks at Hillcrest are a potential contamination source. (V2/3) <p>Other Considerations:</p> <ul style="list-style-type: none"> 550m of the route is within peat (450m Peat, 150m Potential (SNH) Peat) 400m of Peat at Pitscurry Moss (embankment). 150m (Potential from SNH) Peat at Hillhead of Lethenty (embankment). Potential contamination sources: - <ul style="list-style-type: none"> Former quarry near Colpy. Historic Railway adjacent to Burn of Durno Historic Railway at Lochter Burn. New side road at Mill of Bonnyton intercepts an area of former industrial use. | | | potential to encounter more possible contamination sources. |
| Overall Environmental Summary | <ul style="list-style-type: none"> Blue is better performing for Landscape, Plans and Policies, Noise and Air Quality as it is a better fit in the natural topography, has fewer structures and affects less ancient woodland, avoids LDP allocated sites and has fewer receptors. Blue impacts the setting of the Category A Listed Building Culsalmond Old Parish Church and Mummer's Reive Cairn Scheduled Monument which cannot be mitigated and for People and Community severs the sensitive community receptors around Culsalmond and Snipefield. Blue also impacts on Wartle Moss LNCS which is connected hydrologically to Wartle Moss Site of Special Scientific Interest and is a site of national importance. Pink is better performing for Cultural Heritage, Ecology, Communities and Water as it avoids impacts on a greater number of ecologically and culturally designated sites, in particular the Loanhead of Daviot Stone Circle, Newcraig Stone Circle and New Craig Cupmarked Boulder Scheduled Monuments. The Loanhead of Daviot Stone Circle is also an HES Property in Care and a Promoted Visitor Site. HES have identified this as the most significant site in relation to the proposed routes. Overall Pink is better performing and is therefore preferred. | | | Pink | |
| Traffic Commentary | | | | | |
| SO1.1 Reduced journey times | <ul style="list-style-type: none"> Very slightly shorter journey times however, at a strategic level this difference is marginal, and the routes are considered comparable. | <ul style="list-style-type: none"> Very slightly longer journey times, however, at a strategic level this difference is marginal, and the routes are considered comparable. | | | No preference between the routes |
| SO1.2 Improved journey time reliability | <ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision and consistent road standard. Options offer comparable improvement in journey time reliability. | <ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision and consistent road standard. Options offer comparable improvement in journey time reliability. | | | No preference between the routes |
| SO1.3 Increased overtaking opportunities; | <ul style="list-style-type: none"> Blue attracts a lower number of vehicles per day and therefore more traffic remains on single carriageway roads with no formal overtaking provision. | <ul style="list-style-type: none"> Pink attracts a higher volume of traffic and therefore more trips benefit from dual carriageway and full overtaking provision. | | Pink | Pink is preferred as it attracts more traffic to the new dual carriageway than Blue, resulting in more traffic benefitting from increased overtaking opportunities. |
| SO1.4 Improved efficiency of freight movements along the transport corridor; | <ul style="list-style-type: none"> Options offer comparable economic freight benefits No industrial areas in vicinity of route | <ul style="list-style-type: none"> Options offer comparable economic freight benefits No industrial areas in vicinity of route | | | No preference between the routes. The difference in economic benefits to freight vehicles is less than 1%. The routes are considered to perform comparably. |
| SO1.5 Reduced conflicts between local traffic and strategic journeys | <ul style="list-style-type: none"> Both options offer the same level of reduction in the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies | <ul style="list-style-type: none"> Both options offer the same level of reduction in the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies | | | No preference between the routes. Both routes similarly reduce the average trip length on existing A96 indicating a significant reduction in strategic traffic travelling on the existing A96. |
| SO1.6 Improved network resilience | <ul style="list-style-type: none"> Improved road standard will reduce the likelihood of accidents and associated delays/disruption. Provision of secondary carriageway will provide alternative road space in the event of an incident | <ul style="list-style-type: none"> Improved road standard will reduce the likelihood of accidents and associated delays/disruption. Provision of secondary carriageway will provide alternative road space in the event of an incident | | | No preference between the routes. Both routes similarly improve network resilience |

| Pairing Assessment | | | | | |
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| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | | Comment |
| SO2.1 Reduced accident rates and severity | <ul style="list-style-type: none"> Blue route offers lower reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes | <ul style="list-style-type: none"> Pink route offers greater reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes | | Pink | Pink is preferred as it offers a greater reduction in accident rates. Accident severity is likely to be reduced similarly in both options through improved alignment and overtaking provision. |
| SO2.2 Reduced driver stress | <ul style="list-style-type: none"> Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision | <ul style="list-style-type: none"> Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision | | | No preference between the routes. Both options considered to reduce driver stress equally through improved alignment, junction form and introduction of full overtaking provision. |
| SO2.3 Reduced potential conflicts between Motorised and Non-Motorised Users | <ul style="list-style-type: none"> Route crosses the Warthill House Circular core path twice and the Oldmeldrum to Old Rayne cycle route twice. It is assumed that access will be maintained and safe crossing facilities will be provided where necessary. Blue route offers lower level of traffic reduction along the existing A96 between Port Elphinstone and Thainstone. This reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities. | <ul style="list-style-type: none"> Route crosses the Old Rayne Village Link, Jenny's Trees via Urie Riverside and Logie Woods to Durno core paths. It also crosses the Oldmeldrum to Old Rayne cycle route twice. It is assumed that access will be maintained and safe crossing facilities will be provided where necessary. Pink route offers greater traffic reduction along the existing A96 between Port Elphinstone and Thainstone, as higher traffic volumes are attracted to the new dual carriageway. This reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities. | | Pink | Pink is preferred as it offers slightly greater reduction in traffic volumes alongside existing NMU facilities on existing A96 at Inverurie. Potential for conflicts between NMUs and motorised users on Blue and Pink routes is low and it is assumed that any interaction will be managed through the provision of safe crossing facilities. |
| SO3.1 Improved access to the wider strategic transport network | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure. | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure. | | | No preference between the routes. Routes offer similar improvement in journey times. No preference. |
| SO3.2 Enhanced access to jobs and services | <ul style="list-style-type: none"> Blue offers lower improvements in journey times from key trip generators to reach employment and service areas | <ul style="list-style-type: none"> Pink offers greater improvements in journey times from key trip generators to reach employment and service areas Pink to Violet alignment offers more direct connection to retail and employment areas in Inverurie | | Pink | Pink is preferred as it offers lower journey times and more directly serves Inverurie where the majority of services and employment areas are located. |
| SO4 To facilitate active travel in the corridor. | <ul style="list-style-type: none"> Potential to better connect communities in Meikle Wartle and Daviot via improved NMU provision | <ul style="list-style-type: none"> Potential to better connect communities in Old Rayne, Whiteford and Pitcaple via improved NMU provision | | | No preference between the routes. Both routes offer some potential to better connect small communities along the corridor through enhanced NMU provision |
| SO5 To facilitate integration with Public Transport Facilities. | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach public transport interchanges Potential to offer improved connection to public transport hubs in Inverurie and Huntly for communities north of the A920 (Rothienorman, Fisherford, Meikle Wartle) | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach public transport interchanges Potential to offer improved connection to public transport hubs in Inverurie and Huntly for communities in Colpy, Old Rayne, Whiteford, Durno and Pitcaple. | | | No preference between the routes. Both routes offer potential to better connect small communities to public transport facilities in Inverurie and Huntly. |
| STAG 2 Safety | <ul style="list-style-type: none"> See Scheme Objective 2.1 | <ul style="list-style-type: none"> See Scheme Objective 2.1 | | | See Scheme Objective 2.1 |
| STAG 3.1 Transport Economic Efficiency | <ul style="list-style-type: none"> Economic benefits are comparable between the two options | <ul style="list-style-type: none"> Economic benefits are comparable between the two options | | | No preference between the routes. Economic benefits are comparable between the two options |
| STAG 3.2 Wider Economic Impacts | <ul style="list-style-type: none"> Not assessed at this stage. Will be considered as part of the Scheme Business Case. | <ul style="list-style-type: none"> Not assessed at this stage. Will be considered as part of the Scheme Business Case. | | | Not assessed at this stage. Will be considered as part of the Scheme Business Case. |
| STAG 4.1 Transport Integration | <ul style="list-style-type: none"> See Scheme Objective 5 | <ul style="list-style-type: none"> See Scheme Objective 5 | | | See Scheme Objective 5 |
| STAG 4.2 Transport and Land-use Integration | <ul style="list-style-type: none"> Blue route serves existing and proposed development in Inverurie but not does benefit existing and proposed small scale developments in Insch, Old Rayne. | <ul style="list-style-type: none"> Pink route serves existing and proposed development in Inverurie and could improve access to existing and proposed small scale developments in Insch, Old Rayne. | | Pink | Pink is preferred as it better serves existing settlements in Insch and Old Rayne. |
| STAG 4.3 Policy Integration | <ul style="list-style-type: none"> Re-assignment away from the existing A96 is lower under the Blue option. The Blue route on attracts lower traffic volumes to the new dual carriageway compared to the Pink route. Traffic volume reduction on the A947 east of Oldmeldrum is lower under the Blue alignment as fewer vehicles re-assign to the new A96 dual carriageway | <ul style="list-style-type: none"> Pink route attracts more traffic to the new dual carriageway compared to the Blue route. Traffic volumes on the A947 east of Oldmeldrum are reduced more significantly under the Pink alignment as vehicles re-assign to the new A96 dual carriageway. This could relieve | | Pink | Both options support Aberdeenshire Council's LDP aspiration to relieve traffic in Inverurie, however, Pink offers greater traffic reduction on the |

| Pairing Assessment | | | | | |
|---|---|---|-------------------|------|--|
| Discipline | Blue (C2/B1/B2/B3) | Pink (C1/Br1/P2/P3/V1/V2) | Better performing | | Comment |
| | | some pressures on the A947 local road which is reported to have issues associated with congestion and accidents. | | | existing A96 and A947 routes and is therefore preferred. |
| STAG 5 Accessibility & Social Inclusion | <ul style="list-style-type: none"> Provision of junctions with the B9001 and B9170 improves access to the trunk road for communities to the north of Inverurie by removing the need to travel through the town e.g Rothienorman, Meikle Wartle. Also improves access to services and public transport for these communities. Alignment is more remote from settlements currently served by the A96 | <ul style="list-style-type: none"> Provision of junctions with the B9001 and B9170 improves access to the trunk road for communities to the north of Inverurie by removing the need to travel through the town e.g Rothienorman, Meikle Wartle. Also improves access to services and public transport for these communities. Provision of junction with the B992 improves access to Insch and Old Rayne | | Pink | Pink is preferred as it improves accessibility for a wider range of communities (Insch, Old Rayne, Daviot, Rothienorman, Oldmeldrum) compared to Blue. |
| STAG 6 Public acceptability | <ul style="list-style-type: none"> Blue route has the potential for less public support than the Pink route as it attracts less traffic than the Pink route and removes less traffic from the existing A96. It is also more remote from the existing A96 and its settlements along this corridor. There is also some public concern over the proximity of the route to Snipefield Woods (logging and recreational impacts), Wartle Moss, Daviot Stone Circle and Rayne North Primary School. The Blue route passes through less prime agricultural land than the Pink route, however it passes through some higher quality (Class 2) agricultural land. | <ul style="list-style-type: none"> Pink route may have more public support than the Blue route as it attracts more traffic than the Pink route and removes more traffic from the existing A96. It is closer to the existing A96 and its settlements along this corridor. There is some public concern over the proximity of the Pink route to Roman Camp and Logie Estate (impact on wildlife and recreational use). The route passes through more prime agricultural land than the Blue route, albeit lower than Class 2. In addition, residents of Durno, Whiteford and Pitcaple have concerns that the Pink route will sever these communities. | | Pink | <p>There is little to differentiate between the routes in terms of Public Acceptability, as there are concerns voiced over both routes, primarily by those most affected by the alignments.</p> <p>However, Pink is preferred as it is closer to the existing A96, attracts more traffic to it and removes more traffic from the existing A96. Therefore, the Pink route is likely to perform marginally better in terms of the public perception of an A96 Dualling Scheme.</p> |
| Value for Money | <ul style="list-style-type: none"> Comparative cost 110% Comparable TEE benefits but higher construction cost than Pink | <ul style="list-style-type: none"> Comparative cost 100% Comparable TEE benefits and lower construction cost than Blue | | Pink | Pink is preferred as it offers better value for money |
| Overall Traffic Summary | <ul style="list-style-type: none"> Pink attracts a higher volume of traffic to the new A96 and offers a greater reduction in traffic on the existing A96 than Blue. Pink also reduces accident rates on the existing and new A96 routes more significantly than Blue and offers better value for money. There is little to differentiate between the routes in terms of journey time savings and reliability as the alignments are comparable in length, however, Pink will benefit a wider range of communities than Blue which is remote from the existing A96 route. Overall Pink is better performing and is therefore preferred. | | | Pink | |
| Overall Pairing Conclusion | | | | | |
| Pink is preferred by Engineering, Traffic and Environment and it is recommended that the Pink route is progressed for development in further stages | | | | | |

A2 Pairing assessment – Alternative route option combination utilising G3

| Pairing Assessment 2 | | | | | |
|-------------------------|--|---|-------------------|-------|--|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | | Comment |
| Engineering | | | | | |
| Geometric Standard | All sections (B3/V3) have horizontal and vertical geometry to desirable minimum or higher. | Section (G3) has horizontal and vertical geometry to desirable minimum or higher. | | | There is no preference between the routes. |
| Geotechnics/ Earthworks | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Embankment (approx. 150m long) up to 9m high on Glen Dye Silts, located just east of Muirton. (B3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Cutting and embankment greater than 10m on/through glacial till and rock required for Uryside junction (J22), eastbound slip roads and junction connection. Westbound half of junction sits on Glen Dye Silts. (V3) Section of embankment (approx. 150m in length) up to 11m high on glacial till at Hillbrae. (V3) Embankment (approx. 200m in length) up to 12m high on rock at Hill of Selbie. (V3) Embankment (approx. 250m long) up to 11m high on glacial till at Lochend of Barra. (B3) Embankment (approx. 100m long) up to 12m high on rock at Smithy cottage. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> None | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Embankment (approx. length 250m) approximately 10m high on peat at Sunnybrae. (G3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Embankment (approx. length 300m) up to 12m high on glacial till at Bructor Cottage. (G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> None. | | Green | Green is preferred as it has fewer moderate impacts. |
| Structures | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <p>There are a further five side road crossings required:</p> <ul style="list-style-type: none"> Underbridge on B9170 for Uryside junction (J22). (V3) Underbridge at Hillbrae for C Class road. (V3) Underbridge for B993 crossing. (V3) Overbridge for Mill of Bourtie to Lochend of Barra side road. (B3) Underbridge for Barra Junction (J16). (B3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <p>There are a further five side road crossings required:</p> <ul style="list-style-type: none"> Underbridge for realigned B9170 and watercourse at Barra junction (J15). (G2/3) Two underbridges at Shadowside / Smithycroft for C Class roads if cannot be realigned into one structure. (G3) Underbridge at Sunnybrae for C Class road. (G3) Underbridge for B993 crossing. (G3) | | | There is no preference between the routes. |
| Drainage & Hydrology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> None. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> None. | | | There is no preference between the routes. |
| Utilities | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Diversion of 400mm dia. Scottish Water, water main, at Hillbrae. (V3) <p>Other Considerations:</p> <ul style="list-style-type: none"> West of Bourtie House - Alignment crosses 300mm Scottish Water (water main) apparatus. Alignment in cut requiring diversion of pipe. (B3) Hillbrae - diversion of Scottish water apparatus (400mm water main, 300m length). (B3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Diversion of 300mm dia. Scottish Water, water main, Shadowside to Old Bourtie (600m approx. length). (G3) Removal of private wind turbine at Old Bourtie. (G3) Scottish Water - water main crossing west of Sunnybrae (150m approx). (G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> None. | | | There is no preference between the routes. The utility interfaces are similar for both routes. |

| Pairing Assessment 2 | | | | | |
|---------------------------------------|---|---|-------------------|-------|---|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | | Comment |
| Cost | Comparative cost 100% | Comparative cost 103% <ul style="list-style-type: none"> Green route option requires more extensive side road diversion works Green route requires more extensive structures than Violet | Violet | | The combination of more extensive side roads diversion works and larger structures results in a higher cost for the Green route option in comparison to Violet route option. The Violet route option does have increased earthworks cost in relation to Green. Overall, the Violet route option costs are lower and this route option is preferred. |
| Residual hazards for mitigation (CDM) | <ul style="list-style-type: none"> Interaction with live traffic and working near carriageway. Cuttings in shallow rock may require blasting. | <ul style="list-style-type: none"> Interaction with live traffic and working near carriageway. Embankments on peat requiring regular maintenance | | Green | Green is preferred as Violet may require blasting of shallow rock. |
| Overall Engineering Summary | <ul style="list-style-type: none"> Green performs better for Earthworks/ Geotechnics and Residual Hazards. Violet performs better for Cost. There is no preference for Structures Overall Green is better performing and is therefore preferred. | | | Green | The extent of impacts identified on Green would not offset the major impacts on the remainder of the Blue route in the full Blue vs Pink Pairing Assessment. Therefore, Pink is preferred irrespective of how Blue connects to Violet. |
| Environmental | | | | | |
| Landscape & Visual | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Visual receptors east of Inverurie at Boynds. (V3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Three areas of ancient woodland impacted: <ul style="list-style-type: none"> North of Boynds (NE of Inverurie). (V3) West of Bourtie House. (B3) South of Bourtie House (Barra Junction). There are approximately five areas of embankments, however the route is improved at the Hill of Selbie as it follows the contours around the hill and avoids a small area of conifer plantation on the hillside. (V3) Route within undesignated area of high landscape sensitivity Area 15. Area 15 is located between Inverurie and Oldmeldrum and features small copses of woodland with sparse population. Conifer plantation impacted at Ordiefauld. (V3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Setting of Keith Hall GDL, north eastern corner. (V3) Some embankments have potential for mitigation planting, however the presence of more linear stretches of woodland will not be in keeping with the existing landscape planting/local landscape character of the areas. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Areas of conifer plantation impacted Ordiefauld. Route within undesignated areas of high landscape sensitivity Area 15. <p>Other Considerations:</p> <ul style="list-style-type: none"> Areas of the route are in cutting with some areas of embankments. Some embankments have the potential for mitigation planting, however the presence of more linear stretches of woodland will not be in keeping with the existing landscape planting/local landscape character of the areas. | | Green | Green is preferred as it does not impact Keith Hall GDL or ancient woodland. |
| Water | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> Four watercourse crossings (no named water bodies). Crosses one area of mapped floodplain (tributary of Lochter Burn (~60m wide). (B3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> Three watercourse crossings (no named water bodies). Crosses no areas of mapped floodplain. However, G3 crosses the same tributary of the Lochter Burn as B3 slightly further upstream (beyond the limit of the SEPA flood maps); the floodplain may be the same width here as for B3. | | | No preference between the routes. |

| Pairing Assessment 2 | | | | | |
|----------------------|---|--|-------------------|--|---|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | | Comment |
| Ecology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Two large culverted water crossings required. (B3). <p>Other Considerations:</p> <ul style="list-style-type: none"> Additional minor water crossings would also be required. Mitigation would be focussed on alleviating the impacts of fragmentation caused by bisecting the landscape. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> This option would cut through Sunnybrae Moss LNCS, likely destroying the majority of this designated site. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Five large culverted crossings, four of which would be of the same unnamed tributary of the Lochter Burn. <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor water crossings would be required for both options. Mitigation for both options would be focussed on the impacts to the LNCS and the potential impacts to protected species using the landscape for foraging, commuting, and breeding. | Violet | | Violet is preferred as it does not impact any designated sites and is likely to affect fewer watercourses. |
| People & Community | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Over 3km of prime agricultural land (PAL) impacted <p>Other Considerations:</p> <ul style="list-style-type: none"> Cycle route GA3 severed by alignment. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Over 2km PAL impacted <p>Other Considerations:</p> <ul style="list-style-type: none"> At Smithycroft there is potential for a paddock to be directly impacted. Cycle route GA3 severed by alignment. | | | No preference between the routes. |
| Noise | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> There are potential adverse effects upon the scattered receptors located north of Inverurie. <p>Other Considerations:</p> <ul style="list-style-type: none"> There are potential beneficial effects upon receptors close to Inverurie and located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. Within 300m of the proposed alignment, there are 20 residential receptors. The average distance from the residential receptors (captured within 300m of the alignment) to the alignment is 220m. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> There are potential adverse effects upon the scattered receptors located north of Inverurie, especially around Smithycroft and Shadowside Cottage. <p>Other Considerations:</p> <ul style="list-style-type: none"> There are potential beneficial effects upon receptors close to Inverurie and located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. Within 300m of the proposed alignment, there are 33 residential receptors. The average distance from the residential receptors (captured within 300m of the alignment) to the alignment is 172m. | Violet | | Violet is preferred as it captures fewer receptors and the average separation distance between the receptors and the alignment is greater than Green. |
| Air Quality | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> 18 sensitive receptors within 200m of the route. It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation, and due to the proximity of the route to the current route it is unlikely that any changes in concentrations will be significant. Concentrations of NO₂ and PM₁₀ will be slightly higher nearby junctions due to increased emissions associated with accelerating/braking actions. However, as mentioned previously, background concentrations throughout the study area are low and conditions favourable for pollution dispersion. When considering low background concentrations and anticipated traffic flow across the route sections it is unlikely that the introduction of junctions along the B3+V3 route will lead to exceedances of the NO₂ or PM₁₀ air quality objective values at sensitive receptors near to and of these locations. | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> 27 sensitive receptors within 200m of route. It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation or that increases in concentrations will be significant. Concentrations of NO₂ and PM₁₀ will be slightly higher nearby junctions due to increased emissions associated with accelerating/braking actions. However, as mentioned previously, background concentrations throughout the study area are low and conditions favourable for pollution dispersion. When considering low background concentrations and anticipated traffic flow across the route sections it is unlikely that the introduction of junctions along the G3 route will lead to exceedances of the NO₂ or PM₁₀ air quality objective values at sensitive receptors near to and of these locations. | Violet | | Violet is preferred as it has fewer receptors. |

| Pairing Assessment 2 | | | | |
|----------------------|---|--|-------------------|--|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | Comment |
| Cultural Heritage | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Keith Hall Inventory GDL (GDL232) located to the west of the route. Views from the GDL look over parkland, with many views westwards towards the River Urie and Inverurie Town. An avenue dating from the 17th century leads south from the house and forms a key view. The route would be visible in views to the east from the GDL. The route is very close to the western edge of the GDL (approximately 50m), particularly at the north-eastern corner of the GDL. Additional tree planting to provide screening and / or suitable landscaping would help minimise the setting impact. (V3) Setting of Battle of Barra Inventory Historic Battlefield (BLT18) to the east of the route. The route would be visible running passed the western edge of the battlefield. The route would not affect the core battlefield area or cross any of the lines of advancing/retreating troops (as currently understood). The route would be visible in the wider landscape surrounding the battlefield and would add a major new feature to the landscape in the vicinity of the battlefield, although intervening topography and shelterbelts/trees edging fields and roads would provide some screening from the core battlefield area. The main area of fighting is believed to have taken place to the northwest of the Hill of Barra. The hill would have provided and continues to provide an excellent elevated location from which to view the wider battlefield landscape. The construction of the route(B3) within a relatively unchanged rural landscape northwest of the battlefield area would add a major new feature to the landscape near the battlefield. (B3) Setting of Bourtie House (Category A Listed, LB2819) east of the route. Principal views from the house are aligned south overlooking areas of parkland and surrounding arable fields. Some screening of views out from the house is provided by existing surrounding woodland/shelterbelts. Additional tree planting to provide screening and/or suitable landscaping would help minimise the impact. (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Setting of Hill of Selbie Cairn (SM1243) located on the summit of Hill of Selbie, approximately 300m from the route. The prehistoric burial cairn has good views to the east, south and west. The route would be set down slope from the cairn (to the south/southwest) and would unlikely interfere with the current open views from the cairn to the south and would not change the natural slope/topography of the hill on which the cairn stands. (V3) Setting of Barra Castle (Category A Listed, LB2821) just over 1km from the route. The castle stands just west of the B9170 public road within a small associated designed landscape and views from the castle are principally to the west overlooking surrounding arable farmland. The route would introduce a new modern feature to the currently predominately arable landscape over which the castle looks. (B3) Setting of Hill of Barra, fort (SM3997), over 1.9km southwest of the route. The fort stands at the summit of Hill of Barra and has open, wide views out in all directions. The route would introduce a new modern feature to the currently predominately rural landscape which surrounds the fort. (B3) Setting of Fingask House (Category B Listed, LB2797) 500m northeast of the route. Views from the house are aligned principally to the south south-west, overlooking surrounding arable farmland. Some screening of the route and proposed junction is provided already by trees that edge the garden in which the house stands. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact. (B3) Barra junction (J16) is located 500m north of Category A Listed Bourtie House. The junction would not be visible in key views from the house to the south. The listed building is surrounded by mature woodland which would provide screening out to the junction. (B3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Battle of Barra Inventory Historic Battlefield (BLT18) located east of the route. There could be a direct impact on the southwestern corner of the battlefield site, although this would be minimal and affect a small area of the battlefield site. The route would be visible running past the western/southwest edges of the battlefield. The route crosses the line of the advance of troops (Bruce's troops) from the south and HES consider this area to be a sensitive area of the battlefield. Barra junction (J15) is located close to the southwest end of the Battle of Barra Inventory Historic Battlefield (BLT18). The junction location is close to/within the line of the advance of troops (Bruce's troops) from the south and HES considers this area to be a sensitive area of the battlefield. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Barra Junction is located to the west of Hillhead of Barra, standing stone (SM12393). The junction would be visible to the southwest of the standing stone and the slip road would pass the standing stone on its west side (within 170m from the cairn). <p>Other Considerations:</p> <ul style="list-style-type: none"> Setting of Barra Castle (Category A Listed, LB2821), located just over 1km to the east of the route. The castle stands just west of the B9170 public road within a small associated designed landscape and views from the castle are principally to the west overlooking surrounding arable farmland. The route would introduce a new modern feature to the currently predominately arable landscape over which the castle looks. Setting of Fingask House (Category B Listed, LB2797) located approximately 500m northeast of the route. Views from the house are aligned principally to the south south-west, overlooking surrounding arable farmland. Some screening of the route and proposed junction is provided by trees that edge the garden in which the house stands. Additional tree planting would help minimise the impact. Setting of Hill of Barra, fort (SM3997), located over 1.6km southwest of the route. The fort stands at the summit of Hill of Barra and has open, wide views out in all directions. The route would introduce a new modern feature to the currently predominately rural landscape which surrounds the fort, but at such a distance that significant impacts are considered unlikely. Setting of Bourtie House (Category A Listed, LB2819) located south of the route. Principal views from the house are aligned south overlooking areas of parkland and surrounding arable fields. Some screening of views out from the house is provided by existing surrounding woodland/shelterbelts. Additional tree planting would help minimise the impact. Setting of Hill of Selbie Cairn (SM1243) which stands on the summit of Hill of Selbie, approximately 800m from the route (G3). The prehistoric burial cairn is situated at the edge of the slope with good views to the east, south and west. The route would pass north to southeast from the cairn, set down on the lower slopes of the hill. Intervening topography would partially screen views of the route from the cairn, particularly in views to the north. Setting of Keith Hall Inventory GDL (GDL232) located west of the route. Views from the GDL look over parkland, with many views westwards towards the River Urie and Inverurie Town. An avenue dating from the 17th century leads south from the house and forms a key view. The route is over 500m from the GDL, visible in views to the east from the GDL. Some screening is provided by woodland and trees that edge fields within the GDL. Additional tree planting would help minimise the impact. | Violet | Violet is preferred as it is further from the Battle of Barra Inventory Historic Battlefield, avoiding any potential direct impact on the battlefield site and avoiding crossing the line of the advance of troops from the south. |
| Plans & Policies | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> None | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Other Considerations:</p> <ul style="list-style-type: none"> None | | No preference between the routes. |

| Pairing Assessment 2 | | | | | |
|--|---|--|-------------------|-------|--|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | | Comment |
| Soil & Geology | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Prime Agricultural Land = Total 2,400m <ul style="list-style-type: none"> ~1,000m at Bructor ~1,400m at Hillbrae <p>Other Considerations:</p> <ul style="list-style-type: none"> Route crosses an area of Peat (including an area of worked peat and made ground) west of Sunnybrae (embankment). The Barra junction (J16) with B9170 sits entirely on prime agricultural land. (B3) | <p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Prime Agricultural Land = Total 1400m <ul style="list-style-type: none"> ~1,250m at Bructor ~150m at Shadowside cottage. <p>Other Considerations:</p> <ul style="list-style-type: none"> Route crosses an area of Peat (including an area of worked peat and made ground) west of Sunnybrae (embankment). The Barra junction (J15) with B9170 sits entirely on prime agricultural land. | | Green | Green is preferred as Violet impacts more on Prime Agricultural Land. |
| Overall Environmental Summary | <ul style="list-style-type: none"> Green is better performing for Landscape, Geology and Soils as it avoids Keith Hall GDL, affects less prime agricultural land and does not impact on ancient woodland. Violet is better performing for Cultural Heritage, Air Quality, Noise and Ecology as it avoids impacts on a greater number of culturally and ecologically sensitive sites, is located further from the Battle of Barra Inventory Historic Battlefield, has fewer receptors and does not impact on Sunnybrae LNCS. Overall Violet is better performing and is therefore preferred. | | Violet | | |
| Traffic | | | | | |
| SO1.1 Reduced journey times | <ul style="list-style-type: none"> Journey time reduction is comparable in both routes. | <ul style="list-style-type: none"> Journey time reduction is comparable in both routes. | | | No preference between the routes. |
| SO1.2 Improved journey time reliability | <ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision and consistent road standard. Options offer comparable improvement in journey time reliability. | <ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision and consistent road standard. Options offer comparable improvement in journey time reliability. | | | No preference between the routes. |
| SO1.3 Increased overtaking opportunities; | <ul style="list-style-type: none"> Violet attracts a higher volume of traffic and therefore more trips benefit from dual carriageway and full overtaking provision. | <ul style="list-style-type: none"> Green attracts lower number of vehicles per day and therefore more traffic remains on single carriageway roads with no formal overtaking provision. | Violet | | Violet is preferred as it attracts more traffic to the new dual carriageway than Green, resulting in more traffic benefitting from increased overtaking opportunities. |
| SO1.4 Improved efficiency of freight movements along the transport corridor; | <ul style="list-style-type: none"> Options offer comparable economic benefits for freight Option offers more direct access to and from the retail and industrial areas in Inverurie | <ul style="list-style-type: none"> Options offer comparable economic benefits for freight Option offers more direct access to industrial areas in Oldmeldrum | | | No preference between the routes. Both routes offer similar economic benefits for freight and both provide improved access to Inverurie and Oldmeldrum via the B9170. |
| SO1.5 Reduced conflicts between local traffic and strategic journeys | <ul style="list-style-type: none"> Both options reduce the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies indicating that both routes reduce strategic trips through these areas similarly. | <ul style="list-style-type: none"> Both options reduce the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies indicating that both routes reduce strategic trips through these areas similarly. | | | No preference between the routes. Both routes similarly reduce the average trip length on existing A96 indicating a significant reduction in strategic traffic travelling on the existing A96. |
| SO1.6 Improved network resilience | <ul style="list-style-type: none"> Improved road standard will reduce the likelihood of accidents and associated delays/disruption. Provision of secondary carriageway will provide alternative road space in the event of an incident | <ul style="list-style-type: none"> Improved road standard will reduce the likelihood of accidents and associated delays/disruption. Provision of secondary carriageway will provide alternative road space in the event of an incident | | | No preference between the routes. |
| SO2.1 Reduced accident rates and severity | <ul style="list-style-type: none"> Violet offers greater reduction in the number of Personal Injury Accidents (PIA) on the new dual carriageway and detrunked A96 route | <ul style="list-style-type: none"> Green offers greater reduction in the number of Personal Injury Accidents (PIA) on the new dual carriageway and detrunked A96 route | Violet | | Violet is preferred as it offers a greater reduction in accident rates as more traffic re-assigns to higher standard road. Accident severity is likely to be reduced similarly in both options through improved alignment and overtaking provision. |
| SO2.2 Reduced driver stress | <ul style="list-style-type: none"> Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision | <ul style="list-style-type: none"> Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision | | | No preference between the routes. Both routes considered to reduce driver stress equally through improved alignment, junction form and introduction of full overtaking provision. |

| Pairing Assessment 2 | | | | |
|---|--|---|-------------------|---|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | Comment |
| SO2.3 Reduced potential conflicts between Motorised and Non-Motorised Users | <ul style="list-style-type: none"> Route does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. Cycle route uses local roads and it is assumed that access will be maintained and safe crossing facilities will be provided where necessary. Routes similarly reduce traffic along the existing A96 between Port Elphinstone and Thainstone, which reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities. | <ul style="list-style-type: none"> Route does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. Cycle route uses local roads and it is assumed that access will be maintained, and safe crossing facilities will be provided where necessary. Routes similarly reduce traffic along the existing A96 between Port Elphinstone and Thainstone, which reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities. | | No preference between the routes. Both routes attract similar levels of traffic away from the existing A96 through Inverurie and will therefore reduce the potential for conflict alongside existing NMU facilities in Inverurie. |
| SO3.1 Improved access to the wider strategic transport network | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure. | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure. | | No preference between the routes. Both routes offer similar changes in journey times from key trip generators to reach strategic transport infrastructure. |
| SO3.2 Enhanced access to jobs and services | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach employment and service areas Violet route offers more direct connection to retail and employment areas in Inverurie | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach employment and service areas Green route offers more direct connection to employment areas in Oldmeldrum. | | No preference between the routes. Both routes offer lower journey times. Although the Violet route is closer to Inverurie employment areas, the distance between junction locations is small therefore there is no preference. |
| SO4 To facilitate active travel in the corridor. | <ul style="list-style-type: none"> Remoteness of route means that it unlikely to attract NMU trips along its length, however, may indirectly encourage a greater increase in active travel along the existing A96 through reduction in traffic alongside the shared footway/cycleway (Port Elphinstone to Kintore Business Park). Offer a similar reduction in existing A96 traffic compared to the G3 route | <ul style="list-style-type: none"> Remoteness of route means that it unlikely to attract NMU trips along its length, however, may indirectly encourage a greater increase in active travel along the existing A96 through reduction in traffic alongside the shared footway/cycleway (Port Elphinstone to Kintore Business Park). Offers a similar reduction in existing A96 traffic compared to the B3, V3 route | | No preference between the routes. Neither route considered likely to encourage significant levels of active travel along the alignment. Both routes are more likely to encourage similar levels of active travel along the existing A96 through Inverurie by reducing traffic flows on the single carriageway alongside the shared cycle/footway. |
| SO5 To facilitate integration with Public Transport Facilities. | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach public transport interchanges Potential to offer improved connection to public transport hubs in Inverurie and Huntly for communities north of the A920 (Rothienorman, Fisherford, Meikle Wartle) | <ul style="list-style-type: none"> Routes offer similar improvement in journey times from key trip generators to reach public transport interchanges Potential to offer improved connection to public transport hubs in Inverurie and Huntly for communities north of the A920 (Rothienorman, Fisherford, Meikle Wartle) | | No preference between the routes. |
| STAG 2 Safety | <ul style="list-style-type: none"> See Scheme Objective 2.1 | <ul style="list-style-type: none"> See Scheme Objective 2.1 | | See Scheme Objective 2.1 |
| STAG 3.1 Transport Economic Efficiency | <ul style="list-style-type: none"> Economic benefits are comparable between the two options | <ul style="list-style-type: none"> Economic benefits are comparable between the two options | | No preference between the routes. Both routes offer similar transport economic benefits. |
| STAG 3.2 Wider Economic Impacts | <ul style="list-style-type: none"> Not assessed at this stage. Will be considered as part of the Scheme Business Case. | <ul style="list-style-type: none"> Not assessed at this stage. Will be considered as part of the Scheme Business Case. | | Not assessed at this stage. Will be considered as part of the Scheme Business Case. |
| STAG 4.1 Transport Integration | <ul style="list-style-type: none"> See Scheme Objective 5 | <ul style="list-style-type: none"> See Scheme Objective 5 | | See Scheme Objective 5 |
| STAG 4.2 Transport and Land-use Integration | <ul style="list-style-type: none"> Route offers access to the dual carriageway at the B9001 and B9170 and therefore provides opportunity for development within Inverurie and Oldmeldrum | <ul style="list-style-type: none"> Route offers access to the dual carriageway at the B9001 and B9170 and therefore provides opportunity for development within Inverurie and Oldmeldrum | | No preference between the routes. Both routes offer access to the dual carriageway at the B9001 and B9170 and therefore provide opportunity for development within Inverurie and Oldmeldrum. |
| STAG 4.3 Policy Integration | <ul style="list-style-type: none"> The Violet route attracts considerably more traffic to the dual carriageway between Colpy and Tavelty than the Green Route. There is a negligible difference in terms of traffic reduction from Kellockbank to Inverurie on the existing A96 between the two routes. Option positively contributes to Aberdeenshire LDP aspiration to provide a northern/eastern relief road to relieve traffic congestion within Inverurie. Route connects most directly to the LDP allocations at Uryside and Portstown. | <ul style="list-style-type: none"> The additional length of the Green route attracts considerably less traffic to the dual carriageway between Colpy and Tavelty than the Violet Route (average AADT on the Green route = 15,295 veh/day). There is a negligible difference in terms of traffic reduction from Kellockbank to Inverurie on the existing A96 between the two routes. Option positively contributes to Aberdeenshire LDP aspiration to provide a northern/eastern relief road to relieve traffic congestion within Inverurie. | | No preference between the routes. Both options support Aberdeenshire aspiration for eastern relief road. |

| Pairing Assessment 2 | | | | | |
|---|--|---|-------------------|--|---|
| Discipline | Violet (B3/V3) | Green (G3) | Better performing | | Comment |
| STAG 5 Accessibility & Social Inclusion | <ul style="list-style-type: none"> Provision of junction with the B9170 improves access to the trunk road for communities to the north of Inverurie by removing the need to travel through the town e.g Oldmeldrum. Also improves access to services and public transport for these communities. | <ul style="list-style-type: none"> Provision of junctions with the B9001 and B9170 improves access to the trunk road for communities to the north of Inverurie by removing the need to travel through the town e.g Oldmeldrum. Also improves access to services and public transport for these communities. | | | No preference between the routes. Both options improve accessibility for communities in the north. |
| STAG 6 Public acceptability | <ul style="list-style-type: none"> Route avoids the need for traffic from the north to travel through the town centre as well as providing an alternative access to the town. Traffic from Oldmeldrum, Rothienorman and other areas to the north will benefit from either alignment as both are closer than the existing A96 and avoid the need to travel through Inverurie. Concern over the extent of agricultural land required and negative impact on the currently unspoiled natural environment. Concerns over proximity to Keith Hall. Concerns over economic impact to rural business and properties affected by the alignments Violet attracts slightly more traffic to the new alignment | <ul style="list-style-type: none"> Route avoids the need for traffic from the north to travel through the town centre as well as providing an alternative access to the town. Traffic from Oldmeldrum, Rothienorman and other areas to the north will benefit from either alignment as both are closer than the existing A96 and avoid the need to travel through Inverurie. Concern over the extent of agricultural land required and negative impact on the currently unspoiled natural environment. Green is longer than Violet and is therefore likely to have a greater impact. Concerns over economic impact to rural business and properties affected by the alignments Green attracts slightly less traffic to the new alignment | Violet | | Violet is preferred as it lies closer to Inverurie and is therefore more likely to receive public support than Green. |
| Value for Money | <ul style="list-style-type: none"> Comparative cost 100% TEE benefits are similar to Green, but construction cost is lower | <ul style="list-style-type: none"> Comparative cost 103% TEE benefits are similar to Violet, but construction cost is higher | Violet | | Violet is preferred as it offers better value for money |
| Overall Traffic Summary | <ul style="list-style-type: none"> Violet has a lower construction cost and therefore presents better value for money. Overall both routes perform similarly and therefore no preference between the routes. | | | | The alternative connection for Blue via Green offers no additional benefit to the overall Blue vs Pink Pairing Assessment and therefore Pink remains preferred. |
| Overall Pairing Conclusion | | | | | |
| <ul style="list-style-type: none"> Green is preferred by Engineering with Violet preferred by Environment and Traffic having no preference between the routes. Overall, neither Violet or Green is preferred. The conclusion of the main pairing assessment remains valid with Pink found to be better performing than Blue regardless of the connection considered to Violet. Pink to be progressed for development in further stages. | | | | | |