

## Appendix A

### Pairing assessments

## A1 Pairing assessment - Cyan to Pink 1 vs Cyan to Pink 2

Pairing Assessment				
Discipline	Pink 1 (C2/P1)	Pink 2 (C1/Br1/P2)	Better performing	Comment
<b>Engineering</b>				
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 section P1.	All sections (C1/Br1/P2) have horizontal and vertical geometry to desirable minimum or higher.		Pink 2 Pink 2 is preferred as it achieves desirable minimum or higher over its full length compared to Pink 1 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"> <li>Viaduct structure at Kirkton of Culsalmond crossing the Urie valley, River Urie and associated floodplain (approx.720m long) on alluvium. (C2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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)</li> <li>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)</li> <li>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)</li> <li>Underbridge for A920 (approx. length 100m) on alluvium. (C2/P1)</li> <li>Embankment (approx. length 450m) up to 10m high for mainline and eastbound on-slip at Colpy junction (J2), on alluvium at Snipefield Wood, immediately south of A920 underbridge. (C2/P1)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Viaduct structure (approx.200m long) over the River Urie and floodplain at Mains of Williamston on alluvium. (P2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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)</li> <li>Embankment up to 5m high on alluvium near Morgan McVeighs. The embankment side slopes chase the existing ground profile. (C1)</li> <li>Embankment (approx. 100m long) up to 11m high on glacial till at Boghead. (C1)</li> <li>Cutting up to 13m deep through rock/glacial till at Fallow Hill. (C1)</li> <li>Embankment (approx. 100m long) up to 12m high on alluvium between the A96 and River Urie Crossing at Mains of Williamston. (P2)</li> <li>Cutting (approx. 100m long) up to 11m deep through glacial till in proximity to Brankanentum (P2)</li> <li>Embankment (approx. 150m long) approximately 11m high on glacial till at Gleniston Cottage. (P2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>		Pink 2 Both routes have similar moderate impacts. However, for Pink 1, the impacts of the major structure crossing the River Urie valley and associated floodplain, the cuttings in close proximity of Kirkton Farm and Mummer's Reive, which are likely to require retaining structures, results in Pink 2 being preferred.
Structures	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Viaduct at Kirkton of Culsalmond approximately 720m in length with long spans crossing variable topography, Urie Valley, River Urie and floodplain. (C2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Approximately 200m length of retaining wall 12-15m high to Kirton Farm and Culsalmond. (C2)</li> <li>Approximately 60m length of retaining wall 3-4m high associated with Culsalmond side road re-alignment adjacent to Mummer's Reive. (C2)</li> <li>Underbridge for A920, adverse construction and O&amp;M requirements due to interface with an A class road and eastbound slips at Colpy junction (J2), length 100m. (P1)</li> </ul> <p>Other Considerations:</p> <p>There is one further structure required:</p> <ul style="list-style-type: none"> <li>Underbridge for Lawrence Road/realigned B992 at Lawrence Road junction (J8). (P1)</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Underbridge for existing A96, length 100m. Adverse construction interface with existing A class road. (P2)</li> <li>Underbridge over River Urie and floodplain, length 200m, Pier Height 15m. (P2)</li> </ul> <p>Other Considerations:</p> <p>There are a further three structures required:</p> <ul style="list-style-type: none"> <li>Underbridge for Colpy junction (J3). (C1)</li> <li>Overbridge for Lawrence Road at Mellenside. (P2)</li> <li>Underbridge for Lawrence Road/realigned B992 at Lawrence Road junction (J13). (P2)</li> </ul>		Pink 2 Pink 2 is preferred as Pink 1 requires a 720m viaduct over the River Urie and represents a major impact along with significant retaining structures adjacent to Kirkton Farm and the Mummer's Reive.
Drainage & Hydrology	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Impact associated with 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)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Potential diversion of Urie required but impact captured by Environment Water Discipline.</li> <li>Seven watercourse crossings – six culverts and one underbridge.</li> <li>Two attenuation impacts.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>One location with culvert on tributary.</li> <li>Three watercourse crossings on Jordan Burn, tributary and River Urie.</li> <li>Two attenuation impacts on River Urie and tributary.</li> </ul>		Pink 2 Pink 2 is preferred as Pink 1 identifies more interactions with watercourses, particularly the major adverse impact on the River Urie and floodplain.
Utilities	Major Adverse Impacts:	Major Adverse Impacts:		Pink 2 Pink 2 is preferred as Pink 1 crosses transmission lines at a skewed angle and

Pairing Assessment				
Discipline	Pink 1 (C2/P1)	Pink 2 (C1/Br1/P2)	Better performing	Comment
	<ul style="list-style-type: none"> <li>SSE High Voltage 275Kv line and Pylon Crossing at Newton Moss. Skew crossing of transmission lines therefore diversion likely. (P1)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<ul style="list-style-type: none"> <li>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)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None</li> </ul>		therefore a diversion is likely to be required.
Residual hazards for mitigation (CDM)	<p>The following hazards were identified:</p> <ul style="list-style-type: none"> <li>Interaction with live traffic and working near carriageway.</li> <li>SSE 275kV overhead transmission lines crossing.</li> <li>Potentially compressible material where structure is proposed over River Urie and the A920.</li> <li>Construction of major watercourse crossing associated with River Urie – high / long/complex structure with limited access. Maintenance activities associated with inspection of structure.</li> </ul>	<p>The following hazards were identified:</p> <ul style="list-style-type: none"> <li>Interaction with live traffic and working near carriageway.</li> <li>Potentially compressible material where structures are proposed over existing A96 and River Urie.</li> <li>Crossing of SSE 275Kv overhead transmission lines.</li> </ul>		Pink 2 Pink 2 is preferred. As Pink 1 has a larger and more complex River Urie structure and greater likelihood of SSE 275kV diversions.
Cost	<p>Comparative cost 126%</p> <p>Pink 1 requires a long and complex viaduct (approximately 720m long) to cross the River Urie at Kirkton of Culsalmond.</p>	<p>Comparative cost 100%</p>		Pink 2 The structures costs for Pink 1 are higher than Pink 2 and this is the key cost differentiator between the routes. Pink 2 is therefore preferred.
<b>Overall Engineering Summary</b>	<ul style="list-style-type: none"> <li><b>Pink 2 performs better across all sub-disciplines.</b></li> <li><b>Pink 2 preference is primarily due to the major viaduct crossing of the River Urie and floodplain and the greater potential for overhead transmission line diversion required on Pink 1.</b></li> <li><b>Overall Pink 2 is better performing and is therefore preferred.</b></li> </ul>			<b>Pink 2</b>
<b>Environmental</b>				
Landscape & Visual	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Visual impacts on the receptors in Kirkton of Culsalmond. (C2)</li> <li>Colpy junction (J2) located at Snipefield adds to the visual intrusion in this area. (C2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Setting impacts on Scheduled Monument Mummer's Reive Cairn for approximately 200m (with limited opportunities for mitigation). (C2)</li> <li>Length of alignment within undesignated areas of high landscape sensitivity Area 3. (C2)</li> <li>Approximately 500m of earthworks of 5-15m in height across the Snipefield woodland plantation. (P1)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Visual impacts on receptors in Colpy. (C1)</li> <li>Colpy junction (J3), is likely to add to the visual intrusion at Colpy. (C1)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Long sections of earthworks 5-15m, including loss of ancient woodland. (C1)</li> <li>Length of alignment within undesignated areas of high landscape sensitivity Area 4. (C1)</li> <li>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)</li> <li>Many earthworks of 5-15m in height and depth, and a new structure of &gt;15m in height across the River Urie to the south of Mains of Williamston. (P2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Mitigation could reduce the impacts on the setting of the two GDLs.</li> </ul>		No preference between the routes as both have major impacts on landscape character and visual receptors.
Water	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>River Urie crossing is skewed, taking a longer route across the floodplain. (C2)</li> <li>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)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Seven watercourse crossings are required in total.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>River Urie crossing (P2) is perpendicular to flow, taking a shorter route across the floodplain. (P2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Three watercourse crossings are required in total.</li> </ul>		Pink 2 Pink 2 is preferred as it has fewer watercourse crossings than Pink 1. The River Urie crossing on Pink 2 is also shorter and less impact than the skewed River Urie crossing on Pink 1.
Ecology	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Minor adverse impact on Snipefield Wood which is likely to support protected species. (P1)</li> <li>Mitigation would focus upon alleviating the effects of fragmentation, through incorporation of green bridges and/or underpasses. Mitigation for crossing the River Urie would be through the design of a single span structure which does not directly impact the watercourse or the surrounding riparian habitat but is likely to be difficult to achieve given the length of structure required. (C2)</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>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)</li> <li>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)</li> </ul>		Pink 2 Pink 2 is preferred as it has fewer and shorter watercourse crossings than Pink 1 and therefore less impact on water and riparian habitats. Additionally, Pink 1 impacts on Snipefield Wood (P1) which is likely to support protected species.

Pairing Assessment					
Discipline	Pink 1 (C2/P1)	Pink 2 (C1/Br1/P2)	Better performing	Comment	
People & Community	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Severance of the scattered settlement around Kirkton of Culsalmond /Snipefield. (C2)</li> <li>Loss of part of Snipefield Wood, which is a recreational community facility and part of the Grampian Forest. The wood provides walks and a sculpture trail for tourists and local communities and would be affected. (P1)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Approximately 2km of the route is within prime agricultural land.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Severance of the community at Colpy. (C1)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Approximately 4km of the route is within prime agricultural land.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>		Pink 2	Pink 2 is preferred as Pink 1 has a major impact on the scattered community around Kirkton of Culsalmond and Snipefield. Additionally, Snipefield Wood is affected which is a recreational community facility and part of the Grampian Forest.
Noise	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Potential negative impact and several other minor negative impacts on receptors close to Kirkton of Culsalmond. (C2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>There may be potential beneficial impacts upon the existing receptors close to the A96, as existing traffic would be rerouted, consequently reducing noise emissions from the existing A96. (C1)</li> <li>Within a 300m buffer, there are approximately 50 receptors, (30 residential), which is fewer receptors than Pink 2.</li> <li>This route directs traffic from the existing A96 away from Colpy and there are no large communities close to it.</li> <li>There may be a slight increase in noise levels associated with the Colpy junction (J2), (Snipefield), but these are not anticipated to be significant. (C2/P1)</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>There is a potential minor negative impact, due to the proximity to residential receptors in Colpy. (C1).</li> <li>This route runs parallel and is relatively close to the existing A96 and there are no clear identifiable potential beneficial impacts from rerouting traffic through this route.</li> <li>Within a 300m buffer, there are approximately 80 receptors (60 residential), which is nearly double the number of receptors than Pink 1.</li> <li>There may be a slight increase in noise levels associated with Colpy junction (J3), but these are not anticipated to be significant. (C1)</li> </ul>	Pink 1		Pink 1 is preferred as it has fewer receptors (approximately half) than Pink 2 and the route directs traffic from the existing A96 away from Colpy. There may be potential beneficial impacts upon the existing receptors close to the A96, as existing traffic would be rerouted, consequently reducing noise emissions from the existing A96.
Air Quality	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>There is approximately half the number of receptors than Pink 2.</li> <li>There are no significant LDP development areas within 200m of the route corridor, however, the community receptors at Kirkton of Culsalmond (C1C2/P1) may be affected where currently they are located beyond 200m from the existing route.</li> <li>It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation or that increases in concentrations will be significant.</li> <li>There may be a slight increase in air pollutant concentrations associated with the Colpy junction (J2), (Snipefield), but these are not anticipated to be significant. (C2/P1)</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>There is nearly double the number of receptors than Pink 1 due to the proximity of the route to Colpy. (C1)</li> <li>There are no significant LDP development areas within 200m of the route corridor.</li> <li>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.</li> <li>There may be a slight increase in air pollutant concentrations associated with the Colpy junction (J3), but these are not anticipated to be significant. (C1)</li> </ul>	Pink 1		Pink 1 is preferred due to the lower numbers of receptors in proximity to the route.
Cultural Heritage	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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)</li> <li>Setting of Mummer's 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. (C2)</li> <li>At the Colpy junction (J2) (located at Snipefield), will impact on setting of Mummer's Reive Cairn (Scheduled Monument SM11629). (C2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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)</li> <li>Williamston House Inventory GDL (GDL00386) lies to the south of the route, which passes around its northern and eastern edges. The proximity of the route may affect the setting of the GDL. Additional tree planting to provide screening and/or suitable landscaping would help minimise the impact upon the setting of the GDL. (C2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Newton House Inventory GDL (GDL00300) lies to the south-east of this route (P1). Key views out from the GDL are to the south from the house and would not be affected by this</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>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).</li> <li>Colpy junction (J3) will add to the major adverse impact on Colpy Cottage, palisade enclosure (Scheduled Monument SM11511). (C1)</li> <li>Williamston House Inventory GDL (GDL00386) lies to the 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. The proximity to the route may affect the setting of the GDL. Additional tree planting to provide screening and / or suitable landscaping would help minimise the impact upon the setting of the GDL. (C1/P2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Newton House Inventory GDL (GDL00300) lies to the immediate 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)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>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)</li> </ul>		Pink 2	Pink 2 is preferred as Pink 1 has a major impact on setting of a Category A listed building and a scheduled monument, which cannot be mitigated. On Pink 2, the major impact on setting of Colpy Cottage, palisade enclosure relates to buried features.

Pairing Assessment					
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	route. Additional tree planting along northern edge of GDL would help screen views of the route and minimise impact. (P1)				
Plans & Policies	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Committed small scale developments.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Committed small scale developments.</li> </ul>			No preference between the routes.
Soil & Geology	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Prime agricultural land.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Prime agricultural land.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>			No preference between the routes.
<b>Overall Environmental Summary</b>	<ul style="list-style-type: none"> <li><b>Pink 2 is better performing, having less overall major and moderate impacts.</b></li> <li><b>Pink 1 has major impacts on the community around Culsalmond and Snipefield, the loss of part of Snipefield Wood, the setting of the Category A Listed Building of Culsalmond Old Parish Church and Mummer's Reive Cairn Scheduled Monument which cannot be mitigated.</b></li> <li><b>Pink 1 also has more interactions with watercourses, particularly the major impact on the River Urie and floodplain and identifies greater impact on ecological receptors, particularly in relation to watercourses and riparian habitats.</b></li> <li><b>Overall Pink 2 is better performing and is therefore preferred.</b></li> </ul>			<b>Pink 2</b>	
<b>Traffic</b>					
SO1.1 Reduced journey times	<ul style="list-style-type: none"> <li>Shorter route length than Pink 2, resulting in greater journey time reduction</li> </ul>	<ul style="list-style-type: none"> <li>Longer route length than Pink 1 and therefore journey time reduction is lower.</li> </ul>	<b>Pink 1</b>		Pink 1 is preferred as it offers greater journey time benefits associated with shorter alignment length
SO1.2 Improved journey time reliability	<ul style="list-style-type: none"> <li>Improves journey time reliability through full overtaking provision and consistent road standard.</li> </ul>	<ul style="list-style-type: none"> <li>Improves journey time reliability through full overtaking provision and consistent road standard.</li> </ul>			No preference between the routes. Both routes will improve journey time reliability through full overtaking provision and consistent road standard.
SO1.3 Increased overtaking opportunities;	<ul style="list-style-type: none"> <li>Due to the location of the Colpy junction, Pink 1 attracts a slightly lower number of vehicles per day and therefore more traffic remains on single carriageway roads with no formal overtaking provision.</li> </ul>	<ul style="list-style-type: none"> <li>Pink 2 attracts a higher volume of traffic and therefore more trips benefit from dual carriageway and full overtaking provision.</li> </ul>		<b>Pink 2</b>	Pink 2 is preferred as it attracts slightly more traffic and therefore provides overtaking provision for a larger number of travellers as trips re-assign away from the local road network.
SO1.4 Improved efficiency of freight movements along the transport corridor;	<ul style="list-style-type: none"> <li>Pink 1 offers slightly greater economic benefit to freight due to shorter alignment length.</li> <li>Less direct access to industrial sites to the north of Insch.</li> </ul>	<ul style="list-style-type: none"> <li>Slightly lower economic benefit to freight due to longer alignment length.</li> <li>More direct access to industrial sites to the north of Insch.</li> </ul>			No preference between the routes. Routes offer a similar level of benefit to freight traffic over the wider alignment.
SO1.5 Reduced conflicts between local traffic and strategic journeys	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>			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"> <li>Improved road standard will reduce the likelihood of accidents and associated delays/disruption.</li> <li>Provision of secondary carriageway will provide alternative road space in the event of an incident</li> </ul>	<ul style="list-style-type: none"> <li>Improved road standard will reduce the likelihood of accidents and associated delays/disruption.</li> <li>Provision of secondary carriageway will provide alternative road space in the event of an incident</li> </ul>			No preference between the routes.
SO2.1 Reduced accident rates and severity	<ul style="list-style-type: none"> <li>Both routes offer the same level of reduction in Personal Injury Accidents (PIA) on the new dual and detrunked A96 route</li> </ul>	<ul style="list-style-type: none"> <li>Both routes offer the same level of reduction in Personal Injury Accidents (PIA) on the new dual and detrunked A96 route</li> </ul>			No preference between the routes. Both routes offer the same reduction in accident rates. Accident severity is likely to be reduced similarly in both options through improved alignment and overtaking provision.

Pairing Assessment					
Discipline	Pink 1 (C2/P1)	Pink 2 (C1/Br1/P2)	Better performing		Comment
SO2.2 Reduced driver stress	<ul style="list-style-type: none"> <li>Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision.</li> </ul>	<ul style="list-style-type: none"> <li>Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision.</li> </ul>			No preference between the routes.
SO2.3 Reduced potential conflicts between Motorised and Non Motorised Users	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Pink 1 directly impacts on Snipefield Woods which is a popular walking spot for all ages (this has a sculpture trail for children) and hosts community events.</li> <li>New dual carriageway route removes trunk road traffic from travelling through the village of Colpy.</li> </ul>	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>New dual carriageway route removes trunk road traffic from travelling through the village of Colpy.</li> <li>Pink 2 offers opportunity to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities, particularly to connect to bus stops on the existing A96 (there currently no footpath or crossing facilities between the two settlements, or to the bus stops on the A96). One fatal accident involving a pedestrian occurred here in January 2016.</li> </ul>		Pink 2	Both routes remove trunk road traffic from passing through the village of Colpy.  Pink 2 is preferred as it offers opportunity to provide improved NMU facilities to further reduce the likelihood of conflict.
SO3.1 Improved access to the wider strategic transport network	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure.</li> </ul>			No preference between the routes. Overall the difference in journey times is marginal and therefore both routes are considered to improve access to the wider strategic network similarly.
SO3.2 Enhanced access to jobs and services	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach employment and services</li> </ul>	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach employment and services</li> </ul>			No preference between the routes. Overall the difference in journey times is marginal and therefore both routes are considered to improve access to the jobs and services network similarly.
SO4 To facilitate active travel in the corridor.	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Pink 1 directly impacts on Snipefield Woods which is a popular walking spot for all ages (this has a sculpture trail for children) and hosts community events.</li> <li>Comments in Public Consultation feedback also included loss of access/amenity to walking in Foudland Hills/and Tillymorgan Hills/forests.</li> </ul>	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Anecdotal evidence suggests the track to the west of Colpy is used by locals for walking and this will be impacted by Pink 2 alignment. Access and connectivity should be maintained as far as possible.</li> <li>Pink 2 offers opportunity to improve the NMU facilities in and around Colpy and Culsalmond. A new dual carriageway along this alignment would remove A96 traffic from passing between these communities and could reduce severance. Provision of new footway/cycleway and improved crossing facilities could also offer potential for increased active travel between Colpy/Culsalmond to Inch using the unclassified road via Wrangham (depending on level of increase in traffic on this route).</li> </ul>		Pink 2	Pink 2 is preferred as it offers opportunity to improve NMU provision in Colpy and greater potential to facilitate active travel.
SO5 To facilitate integration with Public Transport Facilities.	<ul style="list-style-type: none"> <li>More remote from existing bus stops and therefore does not integrate with existing bus services as easily as Pink 2.</li> </ul>	<ul style="list-style-type: none"> <li>Pink 2 lies closest to existing A96 bus stops and would therefore present opportunity for least disruption to bus users in Colpy.</li> <li>Access to bus stops could be improved by removal of traffic from the existing A96 and provision of improved footway and crossing facilities for communities in Colpy and Culsalmond.</li> </ul>		Pink 2	Pink 2 is preferred as it lies closest to existing A96 bus stops and would therefore present opportunity for least disruption to bus users in Colpy
STAG 2 Safety	See Scheme Objective SO2.1	See Scheme Objective SO2.1			See Scheme Objective SO2.1
STAG 3.1 Transport Economic Efficiency	<ul style="list-style-type: none"> <li>Both options offer similar economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>Both options offer similar economic benefits</li> </ul>			No preference between the routes. Both routes are considered to offer similar TEE benefits
STAG 3.2 Wider Economic Impacts	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.			Not assessed at this stage. Will be considered as part of the Scheme Business Case.
STAG 4.1 Transport Integration	See Scheme Objective SO5	See Scheme Objective SO5			See Scheme Objective SO5
STAG 4.2 Transport and Land-use Integration	<ul style="list-style-type: none"> <li>Junction locations offer access to the dual carriageway at the B992 and A920 and therefore provide opportunity for development within Inch and Old Rayne.</li> </ul>	<ul style="list-style-type: none"> <li>Junction locations offer access to the dual carriageway at the B992 and A920 and therefore provide opportunity for development within Inch and Old Rayne.</li> </ul>			No preference between the routes. Both routes offer similar opportunity for development within Inch and Old Rayne. No preference between the routes.
STAG 4.3 Policy Integration	<ul style="list-style-type: none"> <li>Both routes support current transport and planning policy equally</li> </ul>	<ul style="list-style-type: none"> <li>Both routes support current transport and planning policy equally</li> </ul>			No preference between the routes.
STAG 5 Accessibility & Social Inclusion	<ul style="list-style-type: none"> <li>Route offers access to the A96 dual carriageway via junctions at Colpy and B992</li> </ul>	<ul style="list-style-type: none"> <li>Route offers access to the A96 dual carriageway via junctions at Colpy and B992.</li> </ul>			No preference between the routes. Both routes offer access to the A96 dual carriageway via junctions at Colpy and B992.
STAG 6 Public acceptability	<ul style="list-style-type: none"> <li>Feedback from the October 2018 Public Exhibition was submitted by local residents in opposition to the routes affecting their properties and surrounding area. Concerns related to negative impacts on the local populations in Colpy and Culsalmond including proximity to the dual carriageway and proposed junctions, severance of community, impact on wildlife, and generally disturbing the rural nature of the area in which they have chosen to live. There</li> </ul>	<ul style="list-style-type: none"> <li>Feedback from the October 2018 Public Exhibition was submitted by local residents in opposition to the routes affecting their properties and surrounding area. Concerns related to negative impacts on the local populations in Colpy and Culsalmond including proximity to the dual carriageway and proposed junctions, severance of community, impact on wildlife, and generally disturbing the rural</li> </ul>			No preference between the routes. Both routes are likely to receive opposition from the local population most directly impacted.

Pairing Assessment					
Discipline	Pink 1 (C2/P1)	Pink 2 (C1/Br1/P2)	Better performing		Comment
	<p>is also concern over the community being 'sandwiched' between two roads and the potential negative impact on property values.</p> <ul style="list-style-type: none"> <li>Pink 1 runs through Snipefield Woods which are used as a community resource for walking, a sculpture trail and community events and therefore may be opposed by a wider audience. Also, the need to remove woodland would likely be unpopular if this could be avoided.</li> </ul>	<p>nature of the area in which they have chosen to live. There is also concern over the community being 'sandwiched' between two roads and the potential negative impact on property values.</p> <ul style="list-style-type: none"> <li>Concern over potential impact on recreational walking routes in Foudland Hills.</li> </ul>			
Value for Money	<ul style="list-style-type: none"> <li>Comparative cost 126%</li> <li>Routes offer similar economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>Comparative cost 100%</li> <li>Routes offer similar economic benefits</li> </ul>		Pink 2	Pink 2 is preferred as it offers better value for money
Overall Traffic Summary	<ul style="list-style-type: none"> <li>Both routes perform similarly across the majority of criteria, however, Pink 2 is considered to offer greater potential to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities (particularly to connect to bus stops on the existing A96), reduce conflict between motorised and non-motorised users and encourage active travel. Pink 2 also offers better value for money.</li> <li>Feedback from October 2018 Public Exhibition highlights local opposition to both routes, however, the impact on the community woodland at Snipefield on Pink 1 may be opposed by a wider audience.</li> <li>Overall Pink 2 is better performing and is therefore preferred.</li> </ul>			Pink 2	
<b>Overall Pairing Conclusion</b>					
Pink 2 is preferred by Engineering, Environment and Traffic and therefore it is recommended that Pink 2 is progressed for development in further stages.					

## A2 Red to Pink Assessment Pink 1 vs Pink 2

Pairing Assessment				
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing	Comment
<b>Engineering</b>				
Geometric Standard	All sections (R1/P1) have horizontal and vertical geometry to desirable minimum or higher.	All sections (R2/Br1/P2) have horizontal and vertical geometry to desirable minimum or higher.		No preference between the routes.
Geotechnics/ Earthworks	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Viaduct structure at Kirkton of Culsalmond crossing the existing A96, River Urie and associated floodplain (approx. 450m long) on alluvium and glacial till. (R1)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Cutting up to 16m deep through rock/glacial till near Jericho (approx. 400m long). The cutting chases the existing topography which results in cutting depths greater than those at the centreline. (R1)</li> <li>Cutting up to 6m deep through rock at Mummer's Reive. The cutting chases the existing topography which results in cutting in excess of 10m due to side long ground. Retaining structure likely required between mainline and new Culsalmond side road realignment. (R1)</li> <li>Underbridge for A920 (approx. length 100m) on alluvium. (R1/P1)</li> <li>Embankment (approx. length 450m) up to 10m high for mainline on alluvium at Snipefield Wood, immediately south of A920 underbridge. (P1)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Viaduct structure (approx. 200m long) over the River Urie at Mains of Williamston on alluvium. (P2)</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Embankment up to 16m on glacial till and alluvium, between Jericho and Colpy (approx. length 250m). (R2)</li> <li>Short section of embankment up to 11m high (at centreline) on glacial till at Boghead. (approx. 100m long). (R2)</li> <li>Cutting up to 13m deep through rock/glacial till at Fallow Hill. (R2)</li> <li>Embankment up to 12m high on glacial till at Mains of Williamston after crossing of the River Urie (approx. 100m long). (P2)</li> <li>Cutting up to 11m deep (approx. 100m long) through glacial till in proximity to Brankanentum (P2)</li> <li>Embankment (approx. 150m long) approximately 11m high on glacial till at Glenniston Cottage. (P2)</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>		Pink 2 Both routes have similar moderate impacts. However, for Pink 1, the impacts of the major structure crossing the River Urie valley and associated floodplain, the cuttings in close proximity of Kirkton Farm and Mummer's Reive, which are likely to require retaining structures, results in Pink 2 being preferred.
Structures	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Viaduct up to 450m long at Kirkton of Culsalmond with large spans (&gt;85m) and high piers (approx. 20m), crossing existing A96, variable topography and River Urie and floodplain.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>Approx. 60m length of retaining wall 3-4m high associated with Culsalmond side road re-alignment adjacent to Mummer's Reive.</li> <li>Underbridge for A920, adverse construction and O&amp;M requirements due to interface with an A class road and realigned local road from Kirkton of Culsalmond, length 100m. (P1)</li> </ul> <p>Other Considerations:</p> <p>There is one further structure required:</p> <ul style="list-style-type: none"> <li>Underbridge for Lawrence Road/realigned B992 at Lawrence Road junction (J8). (P1)</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>New underbridge over existing A96, length 100m. Adverse construction interface with existing A class road. (P2)</li> <li>New underbridge over River Urie and floodplain, length 200m, Pier Height 15m. (P2)</li> </ul> <p>Other Considerations:</p> <p>There are a further four structures required:</p> <ul style="list-style-type: none"> <li>Underbridge for unclassified road to Jericho. (R2)</li> <li>Underbridge for Colpy junction (J4). (R2)</li> <li>Overbridge for Lawrence Road at Mellenside. (P2)</li> <li>Underbridge for Lawrence Road/realigned B992 at Lawrence Road junction (J13). (P2)</li> </ul>		Pink 2 Pink 2 is preferred as Pink 1 requires a major structure over the existing A96 and River Urie valley and a significant retaining structure adjacent to Mummer's Reive.
Drainage & Hydrology	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Six watercourse crossings – five culverts and one underbridge.</li> <li>One attenuation impact at River Urie.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>Three watercourse crossings – two culverts and one underbridge.</li> <li>Crossing of Jordan Burn is skewed so potential for localised realignment.</li> </ul>		No preference between the routes.
Utilities	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>SSE High Voltage 275Kv line crossing on skew over 500m in length to the north west of Colpy – diversion likely up to 1km in length with 4no. additional pylons (R1)</li> <li>SSE High Voltage 275Kv line crossing and pylon located at edge of alignment at Newton Moss. Skew crossing (P1)</li> </ul> <p>Moderate adverse impacts:</p> <ul style="list-style-type: none"> <li>None</li> </ul> <p>Other considerations:</p> <ul style="list-style-type: none"> <li>The Colpy junction (J6), does not exacerbate the major utility impact at Colpy as the proposed junction footprint is within the identified extent of SSE line diversion.</li> </ul>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> <li>None.</li> </ul> <p>Other Considerations:</p> <ul style="list-style-type: none"> <li>None.</li> </ul>		Pink 2 Pink 2 is preferred as it has no interaction with major utilities while Pink 1 has major SSE diversions.



Pairing Assessment				
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing	Comment
Residual hazards for mitigation (CDM)	The following hazards were identified: <ul style="list-style-type: none"> <li>Interaction with live traffic and working near carriageway.</li> <li>Major diversion of SSE 275kV overhead transmission lines.</li> <li>Construction of high and long bridge structure across River Urie. Ongoing maintenance and inspection.</li> <li>Compressible material beneath proposed embankment and structures.</li> </ul>	The following hazards were identified: <ul style="list-style-type: none"> <li>Interaction with live traffic and working near carriageway.</li> <li>Compressible material beneath proposed embankment and structures.</li> </ul>		Pink 2 Pink 2 is preferred as it avoids a requirement for major SSE 275kV diversion.
Cost	Comparative cost 100%	Comparative cost 100%		No preference between the routes.
Overall Engineering Summary	<ul style="list-style-type: none"> <li><b>There is no preference between the routes for Standards Compliance, Drainage &amp; Hydrology and Cost.</b></li> <li><b>Pink 2 performs better for Earthworks/Geotechnics, Structures, Utilities and Residual Hazards.</b></li> <li><b>Overall Pink 2 is better performing and is therefore preferred.</b></li> </ul>			Pink 2
<b>Environmental</b>				
Landscape & Visual	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Visual impacts on the receptors in Kirkton of Culsalmond. (R1)</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Setting impacts on Scheduled Monument Mummer's Reive Cairn for approximately 200m (with limited opportunities for mitigation). (R1)</li> <li>Length of alignment within undesignated areas of high landscape sensitivity Area 3. (R1)</li> <li>Approximately 500m of earthworks of 5-15m in height across the Snipefield woodland plantation. (P1)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>None.</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Earthworks of &gt;15m at some points, a new structure and loss of ancient woodland in the setting of Colpy. (R2)</li> <li>Colpy junction (J4) is likely to add to the visual intrusion at Colpy. (R2)</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>There will be 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)</li> <li>The route introduces many earthworks of 5-15m in height and depth, and a new structure of &gt;15m in height across the River Urie to the south of Mains of Williamston. (P2)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Overall, it is considered that mitigation could reduce the impacts on the setting of the two GDLs.</li> </ul>		No preference between the routes as both are considered to have major impacts on landscape character and visual receptors.
Water	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>River Urie crossing. (R1)</li> <li>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. (R1)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Overall, approximately eight watercourse crossings (including minor watercourses) are required.</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>River Urie crossing is perpendicular to flow, taking a shorter route across the floodplain than Pink 1. (P2)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Three watercourse crossings are required in total.</li> </ul>		Pink 2 Pink 2 is preferred as it has fewer watercourse crossings than Pink 1. The River Urie crossing on Pink 2 is shorter and less impact than the River Urie crossing on Pink 1.
Ecology	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>The 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. (R1)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Minor adverse impact on Snipefield Wood which is likely to support protected species. (P1)</li> <li>Overall, 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. (R1)</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>The 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)</li> <li>Fewer watercourse crossings are required than Pink 1 and therefore results in less impact on the water and riparian environment.</li> <li>Overall, 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)</li> </ul>		Pink 2 Pink 2 is preferred as it has fewer watercourse crossings than Pink 1 and therefore less impact on water and riparian habitats. Additionally, Pink 1 impacts on Snipefield Wood which is likely to support protected species.
People & Community	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Severance of the scattered settlement around Kirkton of Culsalmond /Snipefield. (R1).</li> <li>Loss of part of Snipefield Wood, which is a recreational community facility and part of the Grampian Forest. The wood provides walks and a sculpture trail for tourists and local communities and would be affected. (P1)</li> </ul> Moderate Adverse Impacts:	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Severance of the community at Colpy. (R2)</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Approximately 4km of the route falls within prime agricultural land.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>None.</li> </ul>		Pink 2 Pink 2 is preferred as Pink 1 has a major impact on the scattered community around Kirkton of Culsalmond and Snipefield. Additionally, Snipefield Wood is affected which is a recreational community facility and part of the Grampian Forest.

Pairing Assessment					
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing		Comment
	<ul style="list-style-type: none"> <li>Approximately 2km of route falls within prime agricultural land.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>None.</li> </ul>				
Noise	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Potential impact and several other minor negative impacts on receptors close to Kirkton of Culsalmond. (R1)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>There may be potential beneficial impacts upon the existing receptors close to the A96, as existing traffic would be rerouted, consequently reducing noise emissions from the existing A96. (R1)</li> <li>Within a 300m buffer, there are approximately 50 receptors, (30 residential), which is fewer receptors than Pink 2.</li> <li>This route directs traffic from the existing A96 away from Colpy, and there are no large communities close to it.</li> <li>There may be a slight increase in noise levels associated with the Colpy junction (J6) but this is not anticipated to be significant.</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Potential impact due to the proximity to residential receptors in Colpy. (R2)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Within a 300m buffer, there are approximately 80 receptors (60 residential), which is nearly double the number of receptors than Pink 1.</li> <li>This route runs parallel and is relatively close to the existing A96 and there are no clear identifiable potential beneficial impacts from rerouting traffic through this route.</li> <li>There may be a slight increase in noise levels associated with the Colpy junction (J4), but this is not anticipated to be significant.</li> </ul>	Pink 1		Pink 1 is preferred as it has fewer receptors (approximately half) than Pink 2 and the route directs traffic from the existing A96 away from Colpy. There may be potential beneficial impacts upon the existing receptors close to the A96, as existing traffic would be rerouted, consequently reducing noise emissions from the existing A96.
Air Quality	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Fewer receptors than Pink 2.</li> <li>There are no significant LDP development areas within 200m of the route corridor, however, the community receptors at Kirkton of Culsalmond may be affected where currently they are located beyond 200m from the existing route. (R1)</li> <li>It is unlikely that calculated pollutant concentrations will be at levels requiring mitigation or that increases in concentrations will be significant.</li> <li>There may be a slight increase in air pollutant concentrations associated with the Colpy junction (J6), but this is not anticipated to be significant. (R1)</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Greater number of receptors than Pink 1 due to the proximity of the route to Colpy. (R2)</li> <li>There are no significant LDP development areas within 200m of the route corridor.</li> <li>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.</li> <li>There may be a slight increase in air pollutant concentrations associated with the Colpy junction (J4), but this is not anticipated to be significant. (R2)</li> </ul>	Pink 1		Pink 1 is preferred due to the lower numbers of receptors in proximity to the route.
Cultural Heritage	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Setting of Woodside, hut circles (SM11513). Situated on the southeast-facing side of a hill at the edge of an area of managed forestry. There are extensive views to the south from the SM. The two hut circles have possible entrances to the south to take advantage of the views afforded in that direction. (R1)</li> <li>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. (R1)</li> <li>The Colpy junction (J6) adds to the impact on the setting of Woodside, hut circles and Colpy Cottage palisade enclosure. (R1)</li> <li>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 to non-significant. (C2)</li> <li>Setting of Mummer's Reive Cairn (Scheduled Monument SM11629). 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 to non-significant. (C2)</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Williamston House Inventory GDL (GDL00386) lies to the south of the route, which passes around its northern and eastern edges. The proximity of the route may affect the setting of the GDL. Additional tree planting to provide screening and/or suitable landscaping would help minimise the impact upon the setting of the GDL. (C2)</li> </ul> Other Considerations:	Major Adverse Impacts: <ul style="list-style-type: none"> <li>Setting of Williamston House Inventory GDL (GDL00386) as it lies to the 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 upon the setting of the GDL. (Br1/P2)</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Setting of Williamston House (Category B listed building) located east of the route. (R2/Br1)</li> <li>Newton House Inventory GDL (GDL00300) lies to the immediate south of this route. The proximity of 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)</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Minor impact on the 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. (R2)</li> <li>The Colpy junction (J4) will impact on the setting of Colpy Cottage, palisade enclosure (Scheduled Monument SM11511), however due to the distance of the junction from the scheduled monument, the impact will remain minor. (R2)</li> </ul>		Pink 2	Pink 2 is preferred as Pink 1 identifies more major impacts on setting of a Category A Listed Building and several scheduled monuments which cannot be mitigated.

Pairing Assessment					
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing		Comment
	<ul style="list-style-type: none"> <li>Newton House Inventory GDL (GDL00300) lies to the south-east of this route. Key views out from the GDL are to the south from the house and would not be affected by this route. Additional tree planting along northern edge of GDL would help screen views of the route and minimise impact. (P1)</li> </ul>				
Plans & Policies	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Committed small scale developments.</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>Committed small scale developments.</li> </ul>			No preference between the routes.
Soil & Geology	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Prime agricultural land.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>None.</li> </ul>	Major Adverse Impacts: <ul style="list-style-type: none"> <li>None.</li> </ul> Moderate Adverse Impacts: <ul style="list-style-type: none"> <li>Prime agricultural land.</li> </ul> Other Considerations: <ul style="list-style-type: none"> <li>None.</li> </ul>			No preference between the routes.
<b>Overall Environmental Summary</b>	<ul style="list-style-type: none"> <li><b>Pink 2 is better performing, having less overall major and moderate impacts.</b></li> <li><b>Pink 1 features key major impacts on the community around Culsalmond and Snipefield, the loss of part of Snipefield Wood, the setting of the hut circles at Woodside Scheduled Monument, Category A listed building of Culsalmond Old Parish Church and Mummer's Reive Cairn Scheduled Monument which cannot be mitigated.</b></li> <li><b>Pink 1 also has more interactions with watercourses and identifies greater impact on ecological receptors, particularly in relation to watercourses and riparian habitats.</b></li> <li><b>Overall Pink 2 is better performing and is therefore preferred.</b></li> </ul>			<b>Pink 2</b>	
<b>Traffic</b>					
SO1.1 Reduced journey times	<ul style="list-style-type: none"> <li>Similar route length when compared to Pink 2 resulting in similar journey time reduction</li> </ul>	<ul style="list-style-type: none"> <li>Similar route length when compared to Pink 1 resulting in similar journey time reduction</li> </ul>			No preference between the routes. Both routes offer similar journey time benefits due to their similar route lengths
SO1.2 Improved journey time reliability	<ul style="list-style-type: none"> <li>Improves journey time reliability through full overtaking provision and consistent road standard.</li> </ul>	<ul style="list-style-type: none"> <li>Improves journey time reliability through full overtaking provision and consistent road standard.</li> </ul>			No preference between the routes. Both routes perform similarly and will improve journey time reliability through full overtaking provision and consistent road standard.
SO1.3 Increased overtaking opportunities;	<ul style="list-style-type: none"> <li>Due to the location of the Colpy junction, Pink 1 attracts a slightly lower number of vehicles per day and therefore more traffic remains on single carriageway roads with no formal overtaking provision.</li> </ul>	<ul style="list-style-type: none"> <li>Pink 2 attracts a higher volume of traffic and therefore more trips benefit from dual carriageway and full overtaking provision.</li> </ul>			No preference between the routes. Both routes attract similar traffic and therefore provide overtaking provisions for a similar number of travellers as trips re-assign away from the local road network.
SO1.4 Improved efficiency of freight movements along the transport corridor;	<ul style="list-style-type: none"> <li>Both routes offer similar economic benefits to freight due to similar alignment lengths.</li> <li>Less direct access to industrial sites to the north of Insch.</li> </ul>	<ul style="list-style-type: none"> <li>Both routes offer similar economic benefit to freights due to similar alignment lengths.</li> <li>More direct access to industrial sites to the north of Insch.</li> </ul>			No preference between the routes. Routes offer a similar level of benefit to freight traffic over the wider alignment.
SO1.5 Reduced conflicts between local traffic and strategic journeys	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>			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"> <li>Improved road standard will reduce the likelihood of accidents and associated delays/disruption.</li> <li>Provision of secondary carriageway will provide alternative road space in the event of an incident</li> </ul>	<ul style="list-style-type: none"> <li>Improved road standard will reduce the likelihood of accidents and associated delays/disruption.</li> <li>Provision of secondary carriageway will provide alternative road space in the event of an incident</li> </ul>			No preference between the routes.
SO2.1 Reduced accident rates and severity	<ul style="list-style-type: none"> <li>Both routes offer the same level of reduction in Personal Injury Accidents (PIA) on the new dual and detrunked A96 route</li> </ul>	<ul style="list-style-type: none"> <li>Both routes offer the same level of reduction in Personal Injury Accidents (PIA) on the new dual and detrunked A96 route</li> </ul>			No preference between the routes. Both routes offer the same reduction in accident rates. Accident severity is likely to be reduced similarly in both options through improved alignment and overtaking provision.

Pairing Assessment					
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing		Comment
SO2.2 Reduced driver stress	<ul style="list-style-type: none"> <li>Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision.</li> </ul>	<ul style="list-style-type: none"> <li>Potential to reduce driver stress through improved alignment, junction form and introduction of full overtaking provision.</li> </ul>			No preference between the routes.
SO2.3 Reduced potential conflicts between Motorised and Non Motorised Users	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Pink 1 directly impacts on Snipefield Woods which is a popular walking spot for all ages (this has a sculpture trail for children) and hosts community events.</li> <li>New dual carriageway route removes trunk road traffic from travelling through the village of Colpy.</li> </ul>	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>New dual carriageway route removes trunk road traffic from travelling through the village of Colpy.</li> <li>Pink 2 offers opportunity to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities, particularly to connect to bus stops on the existing A96 (currently no footpath or crossing facilities between the two settlements, or to the bus stops on the A96) One fatal accident involving a pedestrian occurred here in January 2016.</li> </ul>		Pink 2	Both routes remove trunk road traffic from passing through the village of Colpy.  Pink 2 is preferred as it offers opportunity to provide improved NMU facilities to further reduce the likelihood of conflict.
SO3.1 Improved access to the wider strategic transport network	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach strategic transport infrastructure.</li> </ul>			No preference between the routes. Both options considered to improve access to the wider strategic network similarly.
SO3.2 Enhanced access to jobs and services	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach employment and services</li> </ul>	<ul style="list-style-type: none"> <li>Routes offer similar improvement in journey times from key trip generators to reach employment and services</li> </ul>			No preference between the routes. Both options considered to improve access to the jobs and services network similarly.
SO4 To facilitate active travel in the corridor.	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Pink 1 directly impacts on Snipefield Woods which is a popular walking spot for all ages (this has a sculpture trail for children) and hosts community events.</li> <li>Comments in Public Consultation feedback also included loss of access/degradation to walking in Foudland Hills/and Tillymorgan Hills/forests.</li> </ul>	<ul style="list-style-type: none"> <li>No formal core paths or cycle routes are impacted by the alignments.</li> <li>Anecdotal evidence of use of the track to the west of Colpy being used by locals for walking and this will be impacted by Pink 2 alignment. Access and connectivity should be maintained as far as possible.</li> <li>Pink 2 offers opportunity for improving the NMU facilities in and around Colpy and Culsalmond. A new dual carriageway along this alignment would remove A96 traffic from passing between these communities and could reduce severance. Provision of new footway/cycleway and improved crossing facilities could also offer potential for increased active travel between Colpy/Culsalmond to Inch using the unclassified road via Wrangham (depending on level of increase in traffic on this route).</li> </ul>		Pink 2	Pink 2 is preferred as it offers opportunity to improve NMU provision in Colpy and greater potential to facilitate active travel.
SO5 To facilitate integration with Public Transport Facilities.	<ul style="list-style-type: none"> <li>More remote from existing bus stops and therefore does not integrate with existing bus services as easily as Pink 2.</li> </ul>	<ul style="list-style-type: none"> <li>Pink 2 lies closest to existing A96 bus stops and would therefore present opportunity for least disruption to bus users in Colpy.</li> <li>Access to bus stops could be improved by removal of traffic from the existing A96 and provision of improved footway and crossing facilities for communities in Colpy and Culsalmond.</li> </ul>		Pink 2	Pink 2 is preferred as it lies closest to existing A96 bus stops and would therefore present opportunity for least disruption to bus users in Colpy.
STAG 2 Safety	See Scheme Objective SO2.1	See Scheme Objective SO2.1			See Scheme Objective SO2.1
STAG 3.1 Transport Economic Efficiency	<ul style="list-style-type: none"> <li>Both options offer similar economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>Both options offer similar economic benefits</li> </ul>			No preference between the routes. Overall the difference in TEE benefits is marginal and therefore both options are considered to have similar benefits
STAG 3.2 Wider Economic Impacts	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.			Not assessed at this stage. Will be considered as part of the Scheme Business Case.
STAG 4.1 Transport Integration	See Scheme Objective SO5	See Scheme Objective SO5			See Scheme Objective SO5
STAG 4.2 Transport and Land-use Integration	<ul style="list-style-type: none"> <li>Junction locations offer access to the dual carriageway at the B992 and A920 and therefore provide opportunity for development within Inch and Old Rayne.</li> </ul>	<ul style="list-style-type: none"> <li>Junction locations offer access to the dual carriageway at the B992 and A920 and therefore provide opportunity for development within Inch and Old Rayne.</li> </ul>			No preference between the routes. Both routes offer similar opportunity for development within Inch and Old Rayne. No preference between the routes
STAG 4.3 Policy Integration	<ul style="list-style-type: none"> <li>Both routes support current transport and planning policy equally</li> </ul>	<ul style="list-style-type: none"> <li>Both routes support current transport and planning policy equally</li> </ul>			No preference between the routes
STAG 5 Accessibility & Social Inclusion	<ul style="list-style-type: none"> <li>Route offers access to the A96 dual carriageway via junctions at Colpy and B992</li> </ul>	<ul style="list-style-type: none"> <li>Route offers access to the A96 dual carriageway via junctions at Colpy and B992.</li> </ul>			No preference between the routes. Both routes offer access to the A96 dual carriageway via junctions at Colpy and B992.
STAG 6 Public acceptability	<ul style="list-style-type: none"> <li>Feedback from the October 2018 Public Exhibition was submitted by local residents in opposition to the routes affecting their properties and surrounding area. Concerns related to negative impacts on the local populations in Colpy and Culsalmond including proximity to the dual carriageway and proposed junctions, severance of community, impact on wildlife, and generally disturbing the rural nature of the area in which they have chosen to live. There is also concern over the community being 'sandwiched' between two roads and the potential negative impact on property values.</li> </ul>	<ul style="list-style-type: none"> <li>Feedback from the October 2018 Public Exhibition was submitted by local residents in opposition to the routes affecting their properties and surrounding area. Concerns related to negative impacts on the local populations in Colpy and Culsalmond including proximity to the dual carriageway and proposed junctions, severance of community, impact on wildlife, and generally disturbing the rural nature of the area in which they have chosen to live. There is also concern over the community being 'sandwiched' between two roads and the potential negative impact on property values.</li> <li>Concern over potential impact on recreational walking routes in Foudland Hills.</li> </ul>			No preference between the routes. Both routes are likely to receive opposition from the local population most directly impacted by the alignments.

Pairing Assessment					
Discipline	Pink 1 (R1/P1)	Pink 2 (R2/Br1/P2)	Better performing		Comment
	<ul style="list-style-type: none"> <li>Pink 1 runs through Snipefield Woods which are used as a community resource for walking, a sculpture trail and community events and therefore may be opposed by a wider audience. Also, the need to remove woodland would likely be unpopular if this could be avoided.</li> </ul>				
Value for Money	<ul style="list-style-type: none"> <li>Comparative cost 100%</li> <li>Routes offer similar economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>Comparative cost 100%</li> <li>Routes offer similar economic benefits</li> </ul>			No preference between the routes.
Overall Traffic Summary	<ul style="list-style-type: none"> <li><b>Both routes perform similarly across the majority of criteria, however, Pink 2 is considered to offer greater potential to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities (particularly to connect to bus stops on the existing A96), reduce conflict between motorised and non-motorised users and encourage active travel.</b></li> <li><b>Feedback from October 2018 Public Exhibition highlights local opposition to both routes, however, the impact on the community woodland at Snipefield on Pink 1 may be opposed by a wider audience.</b></li> <li><b>Overall Pink 2 is better performing and is therefore preferred.</b></li> </ul>			Pink 2	
<b>Overall Pairing Conclusion</b>					
Pink 2 is preferred by Engineering, Environment and Traffic and it is recommended that Pink 2 is progressed for development in further stages.					