

Appendix A

Pairing assessments

A1 Pairing assessment – Green vs Violet

Pairing Assessment Green vs Violet					
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing		Comment
Engineering					
Geometric Standard	All sections (V1/V2/V3) have horizontal and vertical geometry to desirable minimum or higher.	All sections (G1/G2/G3) 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"> 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 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) 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) <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) up to 7m high on peat at Pitscurry Moss. (G1) Underbridge approximately 70m length over Kings Burn and floodplain on alluvium. (G2) Underbridge approximately 180m long over Lochter Burn and floodplain on alluvium and Glen Dye Silts. (G2) Embankment (approx. length 250m) up to 8m high on Glen Dye Silts at Muirton. (G2) Embankment (approx. length 250m) approximately 10m high on peat at Sunnybrae. (G3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Cutting up to 14m deep between Burn of Durno and Pitscurry Moss through rock. (G1) Embankment (approx. length 150m) up to 5m high on peat at Mossfield. (G1) Embankment (approx. length 200m) up to 11m high on rock at Skellarts Croft. (G2) Cutting (approx. length 150m) 11m deep through rock at Lumphart Hill. (G2) Embankment (approx. length 100m) up to 3m high on Glen Dye Silts immediately following the Lochter Burn Crossing. (G2) 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. 	Violet		Both routes have a major impact with the crossing of the Lochter Burn and associated floodplain. However, Violet is preferred as Green overall, has more major and 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"> Underbridge over Lochter Burn and floodplain at Uryside junction (J22), length approximately 230m due to high level difference. (V2) <p>Other Considerations:</p> <p>There are a further six side road crossings required and two watercourse/floodplain crossings:</p> <ul style="list-style-type: none"> 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) Underbridge at Hillbrae for C Class road. (V3) Underbridge for B993 crossing. (V3) 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) 	<p>Major Adverse Impacts</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Underbridge over Lochter Burn and floodplain, total length approximately 180m. (G2) <p>Other Considerations:</p> <ul style="list-style-type: none"> New underbridge to span over King's Burn and floodplain, length 70m. Adverse construction and O&M requirements due to watercourse. (G2) <p>There are a further ten side road crossings required and three watercourse/floodplain crossings:</p> <ul style="list-style-type: none"> Underbridge associated C Class road at Mossfield. (G2) Underbridge associated with Daviot junction (J19). 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. (G1/2) Underbridge at Skellarts Croft for C Class road and Ides Burn. (G2) Underbridge at Wedgewood for C Class road. (G2) Underbridge at Mill of Lumphart C Class road. (G2) Overbridge for Mil of Bourtie to Lochend of Barra C class road. (G2) 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) Watercourse at Wedgewood. (G2) Watercourse at Mill of Bourtie. (G2) Watercourse at Lochend Barra. (G2) 	Violet		Neither route has any major impacts and have similar moderate impacts. However, Violet is preferred due to having fewer structures overall.
Drainage & Hydrology	Major Adverse Impacts:	Major Adverse Impacts:		Violet	Violet is preferred as Green has a greater extent of watercourse and floodplain interaction.
		<ul style="list-style-type: none"> Potential difficulty of provision of drainage attenuation in proximity of Lochter Burn and Kings Burn. (G2) 			

Pairing Assessment Green vs Violet					
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing		Comment
	<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) Moderate Adverse Impacts: <ul style="list-style-type: none"> None. Other Considerations: <ul style="list-style-type: none"> None. 	Moderate Adverse Impacts: <ul style="list-style-type: none"> Alignment passing adjacent to Lochter Burn floodplain. (G2) Other Considerations: <ul style="list-style-type: none"> None. 			
Utilities	Major Adverse Impact: <ul style="list-style-type: none"> 1050mm dia. National Grid High Pressure Gas Main crossing near to Lethenty House. Additional crossing of same National Grid pipeline at Uryside junction for slip road and for connection to B9001. (V2) Moderate Adverse Impacts: <ul style="list-style-type: none"> Diversion of 400mm dia. Scottish Water, water main, at Hillbrae. (V3) 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) Other Considerations: <ul style="list-style-type: none"> None. 	Major Adverse Impacts: <ul style="list-style-type: none"> 1050mm dia. National Grid High Pressure Gas Main near to Muirton. (G2) Moderate Adverse Impacts: <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) Other Considerations: <ul style="list-style-type: none"> None. 			No preference between the routes as both have crossings of the National Grid pipelines, which is the dominant utility interface in this area.
Residual hazards for mitigation (CDM)	<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. H&S issues of crossing major gas main. Cuttings in shallow rock may require blasting. 	<ul style="list-style-type: none"> Difficulties and H&S hazards associated with working near watercourse and on a floodplain. H&S issues of crossing major gas main. Cuttings in shallow rock may require blasting. 			No preference between the routes as the hazards are similar with none considered unmanageable.
Cost	<ul style="list-style-type: none"> Comparative cost 100% 	<ul style="list-style-type: none"> Comparative cost 102% Green is approximately 1.2km longer than Violet and interacts with more side roads resulting in the requirement for more structures to maintain connectivity	Violet		This increased mainline alignment length and additional structures associated with side roads result in Green being more expensive than Violet and therefore, Violet is preferred.
Overall Engineering Summary	<ul style="list-style-type: none"> Both Violet and Green are considered to perform similarly in terms of Standards Compliance, Utilities and Residual Hazards. Violet performs better in Earthworks/Geotechnics, Structures, Drainage & Hydrology and Cost. Overall Violet is better performing and is therefore preferred. 		Violet		
Environmental					
Landscape & Visual	Major Adverse Impacts: <ul style="list-style-type: none"> Visual receptors at Hillcrest / Collyhill at the Uryside Junction and east of Inverurie at Boynds. (V3) Setting of Pitscurry Cairn (SM12302). (V1) Moderate Adverse Impacts: <ul style="list-style-type: none"> Route within undesignated areas of high landscape sensitivity (Area 12 (V1) and Area 15 (V2)). Area 12 is located to the north of Pitcaple and is rich in features such as ancient woodland, cultural assets and SSSI's. Area 15 is located between Inverurie and Oldmeldrum and features small copses of woodland with sparse population. There are three areas of ancient woodland impacted: <ul style="list-style-type: none"> East of Hill of Den. (V1) Hillcrest (Uryside junction (J22), two separate areas of ancient woodland. (V2/V3) North of Boynds (NE of Inverurie). (V3) 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) The Uryside Junction (J22) has long, steep embankments and is close to visual receptors at Hillcrest. (V2/V3) Both junctions are located within an undesignated area of high landscape sensitivity (Area 15). Other Considerations: <ul style="list-style-type: none"> Setting of Keith Hall GDL, north eastern corner. (V3) 	Major Adverse Impacts: <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302). (G1) Moderate Adverse Impacts: <ul style="list-style-type: none"> Areas of conifer plantation impacted at Pitscurry Moss (G1) and Ordiefauld (G3). Ancient woodland severed at Pitscurry Cairn. (G1) Route within undesignated areas of high landscape sensitivity (Area 12 (G1) and Area 15 (G3)). Area 12 is located to the north of Pitcaple and is rich in features such as ancient woodland, cultural assets and SSSI's. Area 15 is located between Inverurie and Oldmeldrum and features small copses of woodland with sparse population. Other Considerations: <ul style="list-style-type: none"> Areas of the route are in cutting with approximately seven areas of embankments. These appear to be higher in height than some of those located on the violet route. 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 more areas are in cutting so it is not as visually intrusive and has less impact on ancient woodland.

Pairing Assessment Green vs Violet					
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	<ul style="list-style-type: none"> 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. 				
Water	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Ides Burn – route crosses the edge of a wide area with approximately 325m of floodplain. (V2) High skew of the Ides Burn floodplain crossing Daviot junction (J62). (V1/V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Lochter Burn floodplain approximately 85m wide, Uryside junction (J22). (V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Eight watercourse crossings are required, one of which is a named water body. Tributary of Ides Burn floodplain is approximately 50m wide. (V2) The route crosses five areas of mapped floodplain. Potential need for realignments of unnamed watercourses: Five locations with total of approximately 1,550m realignment length. At the Uryside junction (J22) an additional watercourse crossing is required. (V2/V3) At the Daviot junction (J62) the slip road on the southbound carriageway is located within the floodplain of the Ides Burn. The side road connecting the B9001 to northbound roundabout also crosses Ides Burn and its associated floodplain. A diversion of the Ides Burn would be required. An assessment of flood risk to the new road infrastructure will be required and compensatory flood storage provided. 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Crossing of extensive floodplain of the Kings Burn (approximately 100m) and Lochter Burn (approximately 185m). Neither crossing is perpendicular to flow. (G2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> Thirteen watercourse crossings are required, two of which are of named water bodies. Potential need for realignments of unnamed watercourses: Three locations with a total of approximately 900m realignment length. The Barra junction (J15) will require an additional two crossings of the realigned minor watercourse. The floodplain here is not mapped as the catchment is too small. (G2) At the Daviot junction (J19) earthworks on a slip road are close to Ides Burn and may require a short watercourse diversion. The floodplain here is not mapped as the catchment is too small. (G1/G2) 	Violet		Green has more watercourse crossings, and the widest floodplain to cross, however Violet crosses more locations within the mapped floodplain and has potential cumulative impacts on Ides Burn. Violet also has a greater length of watercourse realignment. The crossings of the extensive floodplain of the Kings Burn and Lochter Burn on Green may be more difficult to mitigate, and, on this basis, Violet 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"> Route cuts through Pitscurry Moss Local Nature Conservation Site (LNCS) which is a designated ecological site. (V1) Some loss of ancient woodland parcels north of Inverurie which are likely to support protected species. Bridge crossing of the Lochter Burn, approximately 1.43km upstream of the River Don. (V2) Large culverted crossing of the Ides Burn. (V1) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor water crossings required. Mitigation would be focussed on the impacts to the LNCS(s) and the potential impacts to protected species using the landscape for foraging, commuting and breeding. 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Route cuts through Pitscurry Moss LNCS which is a designated ecological site. (G1) Loss of Sunnybrae Moss LNCS (G3). Bridge crossing of the King's Burn and the Lochter Burn. (G2) Three large culverted crossings of other watercourses. (G1/G2) <p>Other Considerations:</p> <ul style="list-style-type: none"> No anticipated loss to parcels of ancient woodland identified to date, although this cannot be entirely ruled out at this stage. Minor water crossings required. Mitigation would be focussed on the impacts to the LNCS(s) and the potential impacts to protected species using the landscape for foraging, commuting and breeding. 	Violet		Violet is preferred as it impacts on only one LNCS.
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"> Approximately 5km of the route falls within prime agricultural land (PAL) which would be lost. The Uryside and Daviot junctions (J22 & J62) impact on PAL. (V1/V2/V3) <p>Other Considerations:</p> <ul style="list-style-type: none"> One commercial property (ch 2600-2650) lies on extents of earthworks but likely that a structure required here. (V2) 200m of LDP Reserved Land (northern link road and landscaping improvements), to the north of Inverurie (Uryside junction (J22)). The link road is complete, but there are outstanding landscaping works associated with this development which would be replaced by embankment and associated planting. (V2/V3) The Daviot junction (J62) has an additional minor impact as it severs cycle path GA3. (V1/V2) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Two private properties (farm structures) impacted. (G2) Approximately 3.5km of the route falls within PAL which would be lost. Barra and Daviot junctions (J15&J19) impact on PAL. (G1/G2/G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor impact as cycle path GA3 is severed. (G1/G2) 		Green	Green is preferred as less prime agricultural land is affected.
Noise	<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>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Scattered receptors located north of Inverurie. <p>Other Considerations:</p>		Green	Green is preferred as it does not capture LDP areas.

Pairing Assessment Green vs Violet					
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing		Comment
	<ul style="list-style-type: none"> Within 300m of the route, there are approximately 35 residential receptors, and two Local Development Plan Opportunity Sites (including the App/2009/2542 for housing land and the App/2008/4145 for 253 houses and 4 commercial units). (V2/V3) There are potential beneficial impacts on receptors close to Inverurie, located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. There are potential adverse effects upon the scattered receptors located north of Inverurie. 	<ul style="list-style-type: none"> Within 300m of the route, there are approximately 70 residential receptors. There are potential of beneficial effects upon receptors close to Inverurie located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. 			
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"> The route passes within 200m of Inverurie and Port Elphinstone settlement area. <p>Other Considerations:</p> <ul style="list-style-type: none"> There are approximately 70 receptors within 200m of the route (30: V1 and 38: V2/V3). Significant LDP Opportunity site (Portstown and Boynds including the App/2009/1367 for 146 dwelling houses and the App/2008/4145 for 253 houses and 4 commercial units) close to V2. Due to low background concentrations of NOX/ NO2 (<6µg/m3 NO2, < 8µg/m3 NOx) and PM10 (< 11 µg/m3) throughout the study area, it is expected pollutant concentrations will not be at levels requiring mitigation and that increases in concentrations will not be significant. Concentrations of NO2 and PM will be slightly higher near to junctions due to increased emissions associated with accelerating/ braking actions. However, it is unlikely that the introduction of the Uryside and Daviot junctions (J22 & J62) will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to these locations. (V1/V2/V3) 	<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"> There are approximately 80 receptors within 200m of the route (40: G1 and 43: G2/G3). There are no significant LDP Opportunity sites within 200m of the route corridor. Due to low background concentrations of NOX/ NO2 (<6µg/m3 NO2, < 8µg/m3 NOx) and PM10 (< 11 µg/m3) throughout the study area, it is expected pollutant concentrations will not be at levels requiring mitigation and that increases in concentrations will not be significant. Concentrations of NO2 and PM will be slightly higher near to junctions due to increased emissions associated with accelerating/ braking actions. However, it is unlikely that the introduction of the Barra or Daviot junctions (J15 & J19) will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to these locations. (G1/G2/G3) 		Green	Despite Green having more receptors present (83 via Green vs 68 via Violet), Green is preferred due to the absence of the route passing close to LDP settlement areas.
Cultural Heritage	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302), located 200m south of the route. The site comprises a Bronze Age burial cairn sited on the summit of a hill. The proximity of the route would cause significant change to the surroundings of the scheduled monument. (V1) 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 be visible in principal views to the south. The route passes along the eastern edge of the battlefield, and intervening topography would help screen principal views of the route from the core areas of the battlefield. (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Bourtie House (Category A Listed Building, LB2819) located to the north of the route. Principal views from the house are to the south overlooking areas of parkland and surrounding arable fields. Some screening of views from the house is provided by existing woodland/shelterbelts. Additional tree planting to provide screening and / or suitable landscaping would help minimise the setting impact. (V2) 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) <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) The Uryside junction (J22) is located immediately east of The 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) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302), located approximately 200m south of the route. The site comprises a Bronze Age burial cairn sited on the summit of a hill. The proximity of the route would cause significant change to the surroundings of the scheduled monument. (G1) 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. (G3) 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. (G2/G3) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Hillhead of Barra, standing stone (SM12393), which is located approximately 300m from the route and within 170m from the Barra junction (J15). The standing stone is intentionally located to provide views of the surrounding landscape. (G2) Barra junction (J15) 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). (G2/G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Setting of Barra Castle (Category A Listed Building, 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. (G3) Setting of Fingask House (Category B Listed Building, 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. (G3) 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 	Violet		Violet is preferred due to the relatively lower number of high level/sensitive heritage assets that would be potentially affected. Green has impacts on the Battle of Barra Inventory Historic Battlefield.

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	<ul style="list-style-type: none"> The Daviot junction (J62) is located to the north of The Battle of Harlaw Inventory Historic Battlefield (BLT11) and would be approximately 800m from the 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/V2) 	<p>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. (G3)</p> <ul style="list-style-type: none"> Setting of Bourtie House (Category A Listed Building, 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. (G3) Setting of Hill of Selbie Cairn (SM1243) which stands on the summit of Hill of Selbie, approximately 800m from the route. 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. (G3) 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. (G3) 			
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 passes close to a number of relatively small-scale committed development and also passes an approved application for 'Erection of Additional 200kg Explosive Storage Bunker and 10kg Deto Annexe'. (V1) The route has a direct impact on a small area of Local Development Plan Reserved Land (northern link road and landscaping improvements), to the north of Inverurie (Uryside junction J22). The link road is complete, but there are outstanding landscaping works associated with this development which would be replaced by embankment and associated planting. (V2/V3) 	<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 passes close to a number of relatively small-scale consented developments i.e. Four consented dwelling houses (chainage 7000) (G1/G2). The route does not impact on any Local Development Plan Reserved Land. 			No preference between the routes.
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"> Both routes cross a significant area of Peat at Pitscurry Moss approximately 300m in length. (V1) Prime Agricultural Land = Total 4,850m <ul style="list-style-type: none"> ~1,450m at Hillbrae. (V3) ~150m at Hillcrest. (V3) ~450m at Lochter Burn. (V2) ~1,150m at Lethenty. (V2) ~400m North of Lethenty. (V2) ~600m at Broadward. (V1) ~650m at Mossfield. (V1) Uryside junction (J22) with the B9001 and Daviot junction (J62) are located on PAL. (V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Route encounters a small area of potential peat at Hillhead of Lethenty. (V2) Historic Railway (potential source of contamination) at Lochter Burn. (V2) Route crosses significant area of peat at Pitscurry Moss on embankment. (V1) 	<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 3,500m <ul style="list-style-type: none"> ~1,250m at Bructor. (G2) ~850m at Lochend of Barra. (G2) ~500m at Muirton (including impact on ~200m of Category 2 PAL). (G2) ~350m at Mill of Lumphart. (G2) ~100m at Broadplace. (G2) ~250m at Mossfield. (G1) Daviot junction (J19) with B9170 is on PAL. (G1/G2) Barra junction (J15) with B9001 is on PAL. (G2/G3) Route crosses an area of Peat (including an area of worked peat and made ground) west of Sunnybrae (embankment). (G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Route crosses a significant area of peat at Pitscurry Moss on embankment (approx.length 250m). (G1) Route crosses an area of Peat between Mossfield and Broadplace, approximately 150m long on embankment (G1) Historic Railway (potential source of contamination) at Lochter Burn. (G2) Route crosses a small former quarry at Bructor Cottage – Potential Contamination. (G2) 			No preference between the routes with Violet having the greatest impact on Prime Agricultural Land. However, Green has a larger impact on peat and greater potential to encounter contaminated land.
Overall Environmental Summary	<ul style="list-style-type: none"> Green has less negative impacts in terms of the Landscape, People and Community, Noise and Air Quality due to more of the route being in cutting, reducing visual intrusion. Green has less impact on prime agricultural land and is a greater distance from LDP settlement areas. 				

Pairing Assessment Green vs Violet					
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing		Comment
	<ul style="list-style-type: none"> Violet has less negative impacts on Ecology, Water and Cultural Heritage as it affects fewer designated ecological sites, has fewer water crossings and avoids the extensive floodplain of the Kings Burn and Lochter Burn. Violet has a lower number of high level/sensitive heritage assets and avoids impacts on the Battle of Barra Inventory Historic Battlefield. Overall there is no preference between the routes. 				
Traffic					
SO1.1 Reduced journey times	<ul style="list-style-type: none"> Shorter route length than Green, resulting in greater journey time benefits 	<ul style="list-style-type: none"> Longer route length than Violet, resulting in lower journey time benefits 	Violet		Violet is preferred as it offers greater journey time savings during peak periods
SO1.2 Improved journey time reliability	<ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision, consistent road standard and improved junction design. 	<ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision, consistent road standard and improved junction design. 			No preference between the routes. Green offers very slightly better journey time reliability although, at a strategic level, this is considered marginal and therefore there is no preferred route under this criterion.
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"> Shorter route length than Green, resulting in greater economic benefits for freight traffic Route offers more direct access to and from the retail and industrial areas in Inverurie 	<ul style="list-style-type: none"> Longer route length than Violet, resulting in lower economic benefits for freight traffic Option offers more direct access to industrial areas in Oldmeldrum 	Violet		Violet is preferred as it offers greater economic benefits to freight traffic and more directly serves the industrial and retail areas in Inverurie.
SO1.5 Reduced conflicts between local traffic and strategic journeys	<ul style="list-style-type: none"> Options offer a similar level of reduction in the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies 	<ul style="list-style-type: none"> Options offer the similar 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 likely to similarly improve network resilience.
SO2.1 Reduced accident rates and severity	<ul style="list-style-type: none"> Violet route offers greater reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes 	<ul style="list-style-type: none"> Green route offers lower reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes 	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 provision of improved alignment, junction form and introduction of full overtaking provision 	<ul style="list-style-type: none"> Potential to reduce driver stress through provision of 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 does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. This cycle route uses local roads and it is assumed that access will be maintained, and safe crossing facilities will be provided where necessary. Route reduces the need for traffic from the north of Inverurie to travel through the urban area to access the A96. Violet offers significantly greater traffic reduction along the existing A96 between Port Elphinstone and Thainstone than the Green alignment. 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 does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. This cycle route uses local roads and it is assumed that access will be maintained, and safe crossing facilities will be provided where necessary. Route reduces the need for traffic from the north of Inverurie to travel through the urban area to access the A96. Green route offers lower traffic reduction along the existing A96 between Port Elphinstone and Thainstone than Violet. This still reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities. 	Violet		Violet is preferred as it attracts significantly more traffic away from the existing A96 through Inverurie and will therefore reduce the potential for conflict alongside existing NMU facilities in Inverurie.

Pairing Assessment Green vs Violet				
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing	Comment
SO3.1 Improved access to the wider strategic transport network	<ul style="list-style-type: none"> Violet offers greater improvement in journey times from key trip generators to reach strategic transport infrastructure. 	<ul style="list-style-type: none"> Green offers a lower improvement in journey times from key trip generators to reach strategic transport infrastructure. 	Violet	Violet is preferred as it offers lower journey times to strategic transport infrastructure.
SO3.2 Enhanced access to jobs and services	<ul style="list-style-type: none"> Violet offers greater improvement in journey times from key trip generators to reach employment and services Violet route offers more direct connection to retail and employment areas in Inverurie 	<ul style="list-style-type: none"> Green offers a lower improvement in journey times from key trip generators to reach employment and services Green route offers more direct connection to employment areas to the south of Oldmeldrum 	Violet	Violet 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"> Remoteness of route means that it unlikely to attract NMU trips along its length, however, it may indirectly encourage a greater increase in active travel within Inverurie and along the existing A96 through reduction in traffic alongside the shared footway/cycleway (Port Elphinstone to Kintore Business Park). Violet offers a greater reduction in existing A96 traffic compared to the Green route and therefore may be more likely to encourage active travel along the existing A96 	<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 within Inverurie and along the existing A96 through reduction in traffic alongside the shared footway/cycleway (Port Elphinstone to Kintore Business Park) Green offers a lower reduction in existing A96 traffic compared to the Violet route and therefore may be less likely to encourage active travel along the existing A96. 	Violet	Neither route considered likely to encourage significant levels of active travel along the alignment. However, Violet is preferred as it is more likely to encourage 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"> Violet route offers more direct connection to public transport hubs in Inverurie including rail station and bus services. Both routes offer similar connectivity to Inch and Kintore railway stations 	<ul style="list-style-type: none"> Green route is further from the key public transport facilities in Inverurie and incurs longer travel time to/from the new dual carriageway Both routes offer similar connectivity to Inch and Kintore railway stations 	Violet	Violet is preferred as it offers more direct connection to public transport hubs in Inverurie including rail station and bus services.
STAG 2 Safety	See Scheme Objective 2.1	See Scheme Objective 2.1		See Scheme Objective 2.1
STAG 3.1 Transport Economic Efficiency	<ul style="list-style-type: none"> Shorter route length than Green, resulting in greater economic benefits 	<ul style="list-style-type: none"> Longer route length than Violet, resulting in lower economic benefits 	Violet	Violet is preferred as it offers greater transport economic 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 5	See Scheme Objective 5		See Scheme Objective 5
STAG 4.2 Transport and Land-use Integration	<ul style="list-style-type: none"> Route offers connections to B9001 and B9170 for access to existing and proposed development sites in Inverurie and Oldmeldrum 	<ul style="list-style-type: none"> Route offers connections to B9001 and B9170 for access to existing and proposed development sites in Inverurie and Oldmeldrum 		No preference between the routes. Both alignments offer access to the dual carriageway at the B9001 and B9170 and therefore provide opportunity for development within Inverurie and Oldmeldrum. No preference between the route sections
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. Traffic reduction on the existing A96 is also greater, with considerably more traffic removed from the existing A96: 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 Traffic reduction on the existing A96 is also lower, with more traffic continuing to use the existing A96 J21 becomes an attractive western access point for Inverurie due to the additional travel distance required on the Green route via J19 and the B9170. This significantly reduces the use of the dual carriageway east of Junction 21 compared to the Violet route. 	Violet	Violet is preferred as it attracts significantly more traffic onto the new dual carriageway from the local road network.
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 eg Rothienorman, Meikle Wartle. 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 eg Rothienorman, Meikle Wartle. 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"> Violet route is shorter and lies closer to the town of Inverurie and is therefore more likely to be perceived as the more attractive alternative to the existing A96. It avoids the need for traffic from the north to route through the town centre as well as providing an alternative access to the town. 	<ul style="list-style-type: none"> Green route is more remote from the town of Inverurie and is therefore more likely to be perceived as the less attractive alternative to the existing A96. It avoids the need for traffic from the north to route through the town centre as well as providing an alternative access to the town. 	Violet	Violet is preferred as the alignment lies closer to Inverurie and is therefore more likely to receive public support than Green.

Pairing Assessment Green vs Violet				
Discipline	Violet (V1/V2/V3)	Green (G1/G2/G3)	Better performing	Comment
	<ul style="list-style-type: none"> 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. Violet provides more direct access to the new development areas to the north of Inverurie. Concern over the extent of agricultural land required and negative impact on the currently unspoiled natural environment. Concerns over proximity to Keithhall. Concerns over economic impact to rural business and properties affected by the alignments 	<ul style="list-style-type: none"> 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. Green offers less direct access to the new development areas to the north of 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 		
Value for money	<ul style="list-style-type: none"> Comparative cost 100% Lower construction costs and greater TEE benefits than Green 	<ul style="list-style-type: none"> Comparative cost 102% Higher construction costs and lower TEE benefits than Violet 	Violet	Violet is preferred as it offers better value for money.
Overall Traffic Summary	<ul style="list-style-type: none"> Violet offers better journey times, greater reduction in accident rates and better value for money. Violet attracts significantly higher volumes of traffic to the new dual carriageway and offers greater traffic reduction on the existing A96. Violet lies closest to Inverurie, the main settlement within the A96 East of Huntly to Aberdeen corridor, and therefore offers most direct access to public transport, jobs and services currently located in the town, and the proposed development sites at Uryside and Portstown. Overall Violet is better performing and is therefore preferred. 		Violet	
Overall Pairing Conclusion				
Violet is preferred by Engineering and Traffic with Environment having no preference. It is recommended that the Violet route is progressed for development in further stages.				

A2 Alternative connection pairing assessment – Green-Blue vs Violet

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
Engineering					
Geometric Standard	All sections (V1/V2/V3) have horizontal and vertical geometry to desirable minimum or higher.	All sections (G1/G2/B3) 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"> 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 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 22, eastbound slip roads and junction connection. Westbound half of junction sits on Glen Dye Silts. (V2) <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) up to 7m high on peat at Pitscurry Moss. (G1) Underbridge approximately 70m length over Kings Burn and floodplain on alluvium. (G2) Underbridge approximately 180m long over Lochter Burn and floodplain on alluvium and Glen Dye Silts. (G2) Embankment (approx. length 250m) up to 8m high on Glen Dye Silts at Muirton. (G2) 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 14m deep between Burn of Durno and Pitscurry Moss through rock. (G1) Embankment (approx. length 150m) up to 5m high on peat at Mossfield. (G1) Embankment (approx. length 200m) up to 11m high on rock at Skellarts Croft. (G2) Cutting (approx. length 150m) 11m deep through rock at Lumphart Hill. (G2) Embankment (approx. length 100m) up to 3m high on Glen Dye Silts immediately following the Lochter Burn Crossing. (G2) 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. 	Violet		Violet is preferred as it has less major and 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"> Underbridge over Lochter Burn and floodplain at Uryside, (J22), length approximately 230m due to high level difference. (V2) <p>Other Considerations:</p> <p>There are a further four side road crossings required and two watercourse/floodplain crossings:</p> <ul style="list-style-type: none"> 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). (V2) Underbridge for C Class road and Ides Burn at Lethenty House but potential opportunity to remove structure as part of Uryside (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) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Underbridge over Lochter Burn and floodplain, total length approximately 180m. (G2) <p>Other Considerations:</p> <ul style="list-style-type: none"> New underbridge to span over King's Burn and floodplain, length 70m. Adverse construction and O&M requirements due to watercourse. (G2) <p>There are a further seven side road crossings and three watercourse/floodplain crossings:</p> <ul style="list-style-type: none"> Underbridge associated C Class road at Mossfield. (G2) Underbridge associated with Daviot junction (J19). 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. (G1/2) Underbridge at Skellarts Croft for C Class road and Ides Burn. (G2) Underbridge at Wedgewood for C Class road. (G2) Underbridge at Mill of Lumphart C Class road. (G2) Overbridge for Mil of Bourtie to Lochend of Barra C class road. (B3) Underbridge for realigned B9170 and watercourse at Barra junction (J16). (B3) Watercourse at Wedgewood. (G2) Watercourse at Mill of Bourtie. (G2/B3) Watercourse at Lochend Barra. (G2) 	Violet		Neither route has any major impacts and have similar moderate impacts. However, Violet is preferred due to having fewer structures overall.
Drainage & Hydrology	<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 x 2m high) of new road required and provision of compensatory storage. Although poor quality watercourse, opportunity for betterment. (V2) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Potential difficulty of provision of drainage attenuation in proximity of Lochter Burn and Kings Burn. (G2) <p>Moderate Adverse Impacts:</p>	Violet		Violet is preferred as Green-Blue has a greater extent of watercourse and floodplain interaction.

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
	<p>Moderate Adverse Impacts</p> <ul style="list-style-type: none"> None. <p>Other Considerations</p> <ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Alignment passing adjacent to Lochter Burn floodplain. (G2) <p>Other Considerations</p> <ul style="list-style-type: none"> None. 			
Utilities	<p>Major Adverse Impact:</p> <ul style="list-style-type: none"> 1050mm dia. National Grid High Pressure Gas Main crossing near to Lethenty House. Additional crossing of same National Grid pipeline at Uryside junction for sliproad 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"> None. 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Green-Blue section crosses (1050mm dia) National Grid High Pressure Gas Main near to Muirton. (G2) 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. 			No preference between the routes as both have crossings of the National Grid pipelines, which is the dominant utility interface in this area.
Residual hazards for mitigation (CDM)	<ul style="list-style-type: none"> Difficulties and H&S hazards associated with working near watercourse and on a floodplain. working near watercourse and on a floodplain at Lochter Burn, as well as working at height due to high piers. H&S issues of crossing major gas main. Cuttings in shallow rock may require blasting. 	<ul style="list-style-type: none"> Difficulties and H&S hazards associated with working near watercourse and on a floodplain. H&S issues of crossing major gas main. Cuttings in shallow rock may require blasting. 			No preference between the routes as the hazards are similar with none considered unmanageable.
Cost	<ul style="list-style-type: none"> Comparative cost 101% <p>Although 1.2km shorter than Green-Blue, Violet requires a longer structure to cross the Lochter Burn and its associated floodplain. Violet also requires a structure to cross the Ides Burn and its floodplain whereas Green-Blue avoids this requirement. Violet interacts with more side roads resulting in an increased length of side road diversions.</p>	<ul style="list-style-type: none"> Comparative cost 100% 		Green-Blue	As a result of the increased structures costs and side road diversion costs, Violet is marginally more expensive overall than Green-Blue and therefore, Green-Blue is preferred.
Overall Engineering Summary	<ul style="list-style-type: none"> Both Violet and Green-Blue perform similarly in terms of Standards Compliance, Utilities and Residual Hazards. Green-Blue performs better in Cost. Violet performs better in Earthworks/Geotechnics, Structures and Drainage & Hydrology primarily due to reduced interaction with the Lochter Burn and floodplain. Overall Violet is better performing and is therefore preferred. 		Violet		
Environmental					
Landscape & Visual	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Visual receptors at Hillcrest / Collyhill at the Uryside junction (J22). (V2) Setting of Pitscurry Cairn (SM12302). (V1). <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Route within undesignated areas of high landscape sensitivity (Area 12 (V1) and Area 15 (V2)). Area 12 is located to the north of Pitcaple and is rich in features such as ancient woodland, cultural assets and SSSI's. Area 15 is located between Inverurie and Oldmeldrum and features small copses of woodland with sparse population. Area 15 is impacted by V2 where it severs ancient woodland at Tullochmor and crosses the B9170. Moderate loss of woodland plantation at Pitscurry Moss. Areas of ancient woodland impacted. <ul style="list-style-type: none"> Pitscurry Cairn. (G1) East of Hill of Den (V1). Hillcrest, Uryside junction (J22). The junction impacts two separate areas of ancient woodland. (V2) Possible impacts on ancient woodland south of Bourtie House (V2). There are approximately five areas of embankments. The Uryside junction (J22) has long, steep embankments and is close to visual receptors at Hillcrest. Both junctions are located within an undesignated area of high landscape sensitivity (Area 15). <p>Other Considerations:</p>	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302) (G1). <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Areas of conifer plantation impacted at Pitscurry Moss (G1). Ancient woodland severed at Pitscurry Cairn. (G1) Route within undesignated areas of high landscape sensitivity (Area 12 (G1) and Area 15 (B3)). Area 12 is located to the north of Pitcaple and is rich in features such as ancient woodland, cultural assets and SSSI's. Area 15 is located between Inverurie and Oldmeldrum and features small copses of woodland with sparse population. Area 15 is impacted where the route severs two areas of ancient woodland to the east of Collyhill where it crosses the B9170. (B3) The Barra junction (J16) is located within undesignated area of high landscape sensitivity (Area 15). (B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Areas of the route are in cutting with approximately seven areas of embankments. These appear to be higher in height than some of those located on the Violet route. 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-Blue	Green-Blue is preferred as it has less impact on areas of ancient woodland and has fewer impacts on the undesignated areas of high landscape sensitivity. More areas of Green-Blue are in cutting so it is not as visually intrusive as Violet.

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
	<ul style="list-style-type: none"> 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. 				
Water	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Ides Burn – route crosses the edge of a wide area with approximately 325m of floodplain. (V2) High skew of the Ides Burn floodplain crossing Daviot junction (J62). (V1/V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Lochter Burn floodplain approximately 85m wide, Uryside junction (J22). (V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Seven watercourse crossings are required, one of which is a named water body. The route crosses five areas of mapped floodplain. Tributary of Ides Burn floodplain is approximately 50m wide (V2). At the Uryside junction (J22) an additional watercourse crossing is required. (V2) At the Daviot junction (J62) the slip road on the southbound carriageway is located within the floodplain of the Ides Burn. The side road connecting the B9001 to northbound roundabout also crosses Ides Burn and its associated floodplain. A diversion of the Ides Burn will be required. An assessment of flood risk to the new road infrastructure will be required and compensatory flood storage provided. (V1/V2) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Crossing of extensive floodplain of the Kings Burn (approximately 100m) and Lochter Burn (approximately 185m) (G2). Neither crossing is perpendicular to flow. (G2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> Ten watercourse crossings are required, two of which are of named water bodies. At the Daviot junction (J62) earthworks on a slip road are close to Ides Burn and may require a short watercourse diversion. The floodplain here is not mapped as the catchment is too small. (G2) 	Violet		Green-Blue has more watercourse crossings, and the widest floodplain to cross, however Violet crosses more locations with mapped floodplain and has potential cumulative impacts on Ides Burn. The crossings of the extensive floodplain of the Kings Burn and Lochter Burn on Green-Blue may be harder to mitigate, and, on this basis, Violet 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"> Route cuts through Pitscurry Moss Local Nature Conservation Site (LNCS) which is a designated ecological site (V1). Some loss of ancient woodland parcels north of Inverurie which are likely to support protected species. Bridge crossing of the Lochter Burn, approximately 1.43km upstream of the River Don. (V2) Large culverted crossing of the Ides Burn. (V1) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor water crossings required. Mitigation would be focussed on the impacts to the LNCS and the potential impacts to protected species using the landscape for foraging, commuting and breeding. 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Route cuts through Pitscurry Moss LNCS which is a designated ecological site (G1). Some loss of ancient woodland parcels north of Inverurie which are likely to support protected species. (B3). Bridge crossing of the King's Burn and the Lochter Burn. (G1/G2) Three large culverted crossings of other watercourses. (G1/G2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor water crossings required. Mitigation 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 is less likely to impact the ecology of the watercourses compared to Green-Blue.
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"> Approximately 4.5km of the route falls within prime agricultural land (PAL) which would be lost. The Uryside junction (J22) and Daviot junction (J62) impact on PAL. (V1/V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> One commercial property (ch 2600-2650) lies on extents of earthworks but likely that a structure required here. (V2) 200m of LDP Reserved Land (northern link road and landscaping improvements), to the north of Inverurie, Uryside junction (J22). The link road is complete, but there are outstanding landscaping works associated with this development which would be replaced by embankment and associated planting. (V2) The Daviot junction (J62) has an additional minor impact as it severs cycle path GA3. (V1/V2) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Two private properties (farm structures) impacted. (G2) Approximately 3.5km of the route falls within PAL which would be lost. Barra junction (J16) and Daviot junction (J19) impact on PAL. (G1/G2/B3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Minor impact as cycle path GA3 is severed. (G2/B3). 		Green-Blue	Green-Blue is preferred as less prime agricultural land is affected.
Noise	<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>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Scattered receptors located north of Inverurie, around Lumphart. <p>Other Considerations:</p> <ul style="list-style-type: none"> Within a 300m of the proposed alignment, there are 45 residential receptors. 		Green-Blue	Green-Blue is preferred as it captures fewer residential receptors and does not capture LDP areas.

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
	<ul style="list-style-type: none"> Within 300m of the proposed alignment, there are 25 residential receptors, and Local Development Plan Opportunity Sites (including the App/2009/1367 for 146 dwelling houses and the App/2008/4145 for 253 houses and 4 commercial units). (V2) There are potential beneficial impacts on receptors close to Inverurie, located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. There are potential adverse effects upon the scattered receptors located north of Inverurie. 	<ul style="list-style-type: none"> There are potential of beneficial effects upon receptors close to Inverurie located immediately next to the existing A96. This is due to existing traffic being rerouted to areas with fewer receptors. 			
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"> 24 sensitive receptors within 200m of the route. Significant LDP Opportunity site (Portstown and Boynds including the App/2009/1367 for 146 dwelling houses and the App/2008/4145 for 253 houses and 4 commercial units) close to V2. 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 PM will be slightly higher near to junctions due to increased emissions associated with accelerating/ braking actions. However, it is unlikely that the introduction of the Uryside and Daviot junctions (J22 & J62) will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to these locations. (V1/V2) 	<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"> 43 sensitive receptors within 200m of 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 near to junctions due to increased emissions associated with accelerating/ braking actions. However, it is unlikely that the introduction of the Barra or Daviot junctions (J16 & J19) will lead to exceedances of the NO2 or PM10 air quality objective values at sensitive receptors near to these locations. (G1/G2/B3) 		Green-Blue	Green-Blue is preferred as the route does not pass close to LDP areas.
Cultural Heritage	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302), located 200m south of the route. The site comprises a Bronze Age burial cairn sited on the summit of a hill. The proximity of the route would cause significant change to the surroundings of the scheduled monument. (V1) Setting of Battle of Harlaw Inventory Historic Battlefield (BLT11) located west of the route. The battlefield covers a slightly raised, flat, plateaux 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 be visible in principal views to the south. The route passes along the eastern edge of the battlefield, and intervening topography would help screen principal views of the route from the core areas of the battlefield. (V2) <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Bourtie House (Category A Listed, LB2819), located north of the route (V2). Principal views from the house are to the south overlooking areas of parkland and surrounding arable fields. Some screening of views from the house is provided by existing woodland/shelterbelts. Additional tree planting to provide screening and / or suitable landscaping would help minimise the setting impact. (V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> The Uryside junction (J22) is located immediately east of The 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) The Daviot junction (J62) is located to the north of The Battle of Harlaw Inventory Historic Battlefield (BLT11) and would be approximately 800m from the 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/V2) 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Pitscurry Cairn (SM12302), located approximately 200m south of the route (G1). The site comprises a Bronze Age burial cairn sited on the summit of a hill. The proximity of the route would cause significant change to the surroundings of the scheduled monument. <p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> Setting of Battle of Barra Inventory Historic Battlefield (BLT18) located east of the route. The route alignment would be visible running past the western edge of the battlefield but would not affect the core battlefield area or cross any of the lines of advancing/retreating troops (as currently understood). The route alignment would be visible in the wider landscape surrounding the battlefield and would add a major new feature to the landscape in the vicinity. Intervening topography, shelterbelts/trees edging fields and roads would provide some screening from the core battlefield area. (B3) <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. (B3) Setting of Hill of Barra, fort (SM3997), located 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, but at such a distance that significant impacts are considered unlikely. (B3) Setting of Fingask House (Category B Listed, LB2797) located approximately 700m 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. (G2) Setting of Bourtie House (Category A Listed, LB2819) located 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 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. Mature woodland provides screening out to the junction. (B3) 	Violet		Violet is preferred due to the relatively lower number of high level/sensitive heritage assets that would be potentially affected. Green-Blue has major impacts on the Battle of Barra Inventory Historic Battlefield.
Plans & Policies	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. 	<p>Major Adverse Impacts:</p> <ul style="list-style-type: none"> None. 			No preference between the routes

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
	<p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> The route passes close to a number of relatively small-scale committed development and also passes an approved application for 'Erection of Additional 200kg Explosive Storage Bunker and 10kg Deto Annexe'. (V1) The route has a direct impact on a small area of Local Development Plan Reserved Land (northern link road and landscaping improvements), to the north of Inverurie (Uryside junction J22). The link road is complete, but there are outstanding landscaping works associated with this development which would be replaced by embankment and associated planting. (V2) 	<p>Moderate Adverse Impacts:</p> <ul style="list-style-type: none"> None. <p>Other Considerations:</p> <ul style="list-style-type: none"> The route passes close to a number of relatively small-scale consented development i.e. Four consented dwelling houses (chainage 7000) (G1/G2). The route does not impact on any Local Development Plan Reserved Land. 			
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 3,400m <ul style="list-style-type: none"> ~150m at Hillcrest. (V2) ~450m at Lochter Burn. (V2) ~1,150m at Lethenty. (V2) ~400m North of Lethenty. (V2) ~600m at Broadward. (V1) ~650m at Mossfield. (V1) Uryside junction (J22) and Daviot junction (J62) are located on PAL. (V1/V2) <p>Other Considerations:</p> <ul style="list-style-type: none"> Route crosses significant area of peat at Pitscurry Moss on embankment. (V1) Route encounters a small area of potential peat at Hillhead of Lethenty. (V2) Historic Railway (potential source of contamination) at Lochter Burn. (V2) 	<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 3,700m <ul style="list-style-type: none"> ~1,000m at Bructor. (B3) ~850m at Lochend of Barra. (B3) ~650m at Hillbrae.(B3) ~500m at Muirton (including impact on ~200m of Category 2 PAL). (G2) ~350m at Mill of Lumphart. (G2) ~100m at Broadplace. (G2) ~250m at Mossfield. (G1) Daviot junction (J19) with B9170 is on PAL. (G1/G2) Barra junction (J15) with B9001 is on PAL. (G2/G3) <p>Other Considerations:</p> <ul style="list-style-type: none"> Route crosses a significant area of peat at Pitscurry Moss on embankment (approx. length 250m). (G1) Route crosses an area of Peat between Mossfield and Broadplace, approximately 150m long on embankment (G1) Historic Railway (potential source of contamination) at Lochter Burn. (G2) 			Both routes impact on large stretches of Prime Agricultural Land, with the Green-Blue route having the greatest impact on this soil resource overall (marginally). Both route sections have similar impact on peat and potential to encounter contaminated land. overall there is no preference between the routes.
Overall Environmental Summary	<ul style="list-style-type: none"> Green-Blue has less negative impact in terms of the Landscape, People and Community, Noise and Air Quality due to more of the route being in cutting, reducing visual intrusion, less impact on ancient woodland, less impact on prime agricultural land, and avoidance of any LDP settlement areas. Violet has less negative impact in terms of Ecology, Water and Cultural Heritage as it has fewer watercourse crossings, avoids the extensive floodplain of the Kings Burn and Lochter Burn, and has a lower number of high level/sensitive heritage assets than the Green-Blue route, and avoids impacts on the Battle of Barra Inventory Historic Battlefield. Overall there is no preference between the routes. 				
Traffic					
SO1.1 Reduced journey times	<ul style="list-style-type: none"> Shorter route length than Green-Blue resulting in greater journey time benefits 	<ul style="list-style-type: none"> Longer route length than Violet resulting in lower journey time benefits 	Violet		Violet is preferred as it offers greater journey time savings during peak periods
SO1.2 Improved journey time reliability	<ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision, consistent road standard and improved junction design. 	<ul style="list-style-type: none"> Improves journey time reliability through full overtaking provision, consistent road standard and improved junction design. 			No preference between the routes. Green-Blue offers very slightly better journey time reliability although, at a strategic level, this is considered marginal and therefore there is no preferred route under this criterion.
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 Blue 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-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"> Shorter route length than G1-G2-B3, resulting in greater economic benefits for freight traffic Option offers more direct access to and from the retail and industrial areas in Inverurie. 	<ul style="list-style-type: none"> Longer route length than Violet, resulting in lower economic benefits for freight traffic Option offers more direct access to industrial areas in Oldmeldrum. 	Violet		Violet is preferred as it offers greater economic benefits to freight traffic and more directly serves the industrial and retail areas in Inverurie.

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
SO1.5 Reduced conflicts between local traffic and strategic journeys	<ul style="list-style-type: none"> Options offer a similar level of reduction in the average trip length for traffic travelling through Pitmachie, Pitcaple and Drimmies 	<ul style="list-style-type: none"> Options offer a similar 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 likely to similarly improve network resilience.
SO2.1 Reduced accident rates and severity	<ul style="list-style-type: none"> Violet route offers greater reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes 	<ul style="list-style-type: none"> Green-Blue route offers lower reduction in the number of Personal injury Accidents (PIA) on the new dual carriageway and detrunked A96 routes 	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 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 does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. The cycle route uses local roads and it is assumed that access will be maintained with safe crossing facilities will be provided where necessary. Route reduces the need for traffic from the north of Inverurie to travel through the urban area to access the A96. Violet route reduces traffic along the existing A96 between Port Elphinstone and Thainstone more significantly than the Green-Blue alignment. 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 does not impact any formal core paths but crosses the Oldmeldrum to Old Rayne cycle route once. The cycle route uses local roads and it is assumed that access will be maintained with safe crossing facilities will be provided where necessary. Route reduces the need for traffic from the north of Inverurie to travel through the urban area to access the A96. Green-Blue route offers lower traffic reduction along the existing A96 between Port Elphinstone and Thainstone than V1-V2-V3. This still reduces the potential for conflict between motorised and non-motorised users along this section which has shared footway/cycleway and substandard crossing facilities.. 	Violet		Violet is preferred as it attracts significantly more 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"> Violet offers greater improvement in journey times from key trip generators to reach strategic transport infrastructure. 	<ul style="list-style-type: none"> Green-Blue offers greater improvement in journey times from key trip generators to reach strategic transport infrastructure. 	Violet		Violet is preferred as it offers lower journey times to strategic transport infrastructure.
SO3.2 Enhanced access to jobs and services	<ul style="list-style-type: none"> Violet offers shorter journey times from key trip generators to reach employment and services. Route offers more direct connection to retail and employment areas in Inverurie. 	<ul style="list-style-type: none"> Green-Blue offers longer journey times from key trip generators to reach employment and services. Route offers more direct connection to employment areas to the south of Oldmeldrum. 	Violet		Violet is preferred as it offers shorter 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"> 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). Violet offers greater reduction in existing A96 traffic compared to the Green-Blue 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). Green-Blue offers a lower reduction in existing A96 traffic compared to the Violet route 	Violet		Neither route considered likely to encourage significant levels of active travel along the alignment. However, Violet is preferred as it is more likely to encourage 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"> Violet route offers more direct connection to public transport hubs in Inverurie including rail station and bus services. Both routes offer similar connectivity to Inch and Kintore railway stations 	<ul style="list-style-type: none"> Green-Blue route is longer and less direct than Violet and incurs longer travel time to/from the key public transport facilities in Inverurie Both routes offer similar connectivity to Inch and Kintore railway stations 	Violet		Violet is preferred as it offers more direct connection to public transport hubs in Inverurie including rail station and bus services.
STAG 2 Safety	See Scheme Objective 2.1	See Scheme Objective 2.1			See Scheme Objective 2.1

Pairing Assessment Green-Blue vs Violet					
Discipline	Violet (V1/V2/V3)	Green-Blue (G1/G2/B3)	Better performing		Comment
STAG 3.1 Transport Economic Efficiency	<ul style="list-style-type: none"> Shorter route length than Green-Blue, resulting in greater economic benefits 	<ul style="list-style-type: none"> Longer route length than Violet, resulting in lower economic benefits 	Violet		Violet is preferred as it offers greater transport economic 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 5	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. No preference between the route sections
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-Blue route Traffic reduction on the existing A96 is also greater, with considerably more traffic removed from the existing A96: Route connects most directly to the LDP allocations at Uryside and Portstown. 	<ul style="list-style-type: none"> The additional length of the Green-Blue route attracts considerably less traffic to the dual carriageway between Colpy and Tavelty than the Violet Route Traffic reduction on the existing A96 is also lower, with more vehicles continuing to use the existing A96 J21 becomes an attractive western access point for Inverurie due to the additional travel distance required on the Green-Blue route via J19 and the B9170. This significantly reduces the use of the dual carriageway east of Junction 21 compared to the Violet route. 	Violet		Violet is preferred as it attracts significantly more traffic onto the new dual carriageway from the local road network.
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 eg Rothienorman, Meikle Wartle. 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 eg Rothienorman, Meikle Wartle. 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"> Violet route lies closer to the town of Inverurie and is therefore more likely to be perceived as the more attractive alternative to the existing A96. It avoids the need for traffic from the north to route 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. Violet provides more direct access to the new development areas to the north of Inverurie. Concern over the extent of agricultural land required and negative impact on the currently unspoiled natural environment. Concerns over economic impact to rural business and properties affected by the alignments 	<ul style="list-style-type: none"> Green-Blue route is more remote from the town of Inverurie and is therefore more likely to be perceived as the less attractive alternative to the existing A96. It avoids the need for traffic from the north to route 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. Green-Blue offers less direct access to the new development areas to the north of Inverurie. Concern over the extent of agricultural land required and negative impact on the currently unspoiled natural environment. Green-Blue 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 	Violet		Violet is preferred as the alignment lies closer to Inverurie and is therefore more likely to receive public support than Green-Blue.
Value for money	<ul style="list-style-type: none"> Comparative cost 101% Higher TEE benefits and higher construction costs than Green-Blue 	<ul style="list-style-type: none"> Comparative cost 100% Lower TEE benefits and lower construction costs than Violet 	Violet		Violet is preferred as it offers better value for money.
Overall Traffic Summary	<ul style="list-style-type: none"> Violet offers better journey times, greater reduction in accident rates and higher economic benefits than compared to the Green-Blue alignment. Violet attracts significantly higher volumes of traffic to the new dual carriageway and offers greater traffic reduction on the existing A96. Violet offers a shorter and more direct route compared to Green-Blue and therefore offers most direct access to public transport, jobs and services currently located in Inverurie, and the proposed development sites at Uryside and Portstown. Overall Violet is better performing and is therefore preferred. 		Violet		
Overall Pairing Conclusion					
Violet is preferred by Engineering and Traffic with Environment having no preference. It is recommended that the Violet route is progressed for development in further stages.					