

Appendix B

First Fix Alignments Appraisal Metrics

A96 East of Huntly to Aberdeen
First Fix Assessment Matrix

Criteria	Metric Owner	Metric Type	Assessment method: By Whole Alignment / Specific Chainage Assessment	Metric	Major Adverse Impact	Moderate Adverse Impact	Minor Adverse Impact	Neutral Impact	Minor Beneficial Impact	Moderate Beneficial Impact	Major Beneficial Impact	Notes		
1	To improve the operation of the A96 and inter-urban connectivity through:	Reduced journey times	Traffic & Economics	Quantitative		Increase in JT of over 10 mins	Increase in JT of 5-10 mins	Increase in JT of 2 - 5 mins	0-2 mins	Reduction in JT of 2 - 5 mins	Reduction in JT of 5-10 mins	Reduction in JT of over 10 mins	Speed, distance time relationship used. Based on Corridor Options Appraisal which showed that journey times improved in general by minimum of 2mins (using speed/distance/time). Maximum journey time benefits were shown for peak period journeys which approached Inverurie, or travel through Inverurie which calculated journey time savings of between 8-16mins. Baseline journey times were established using INRIX data provided by Traffic Scotland.	
		Improved journey time reliability	Traffic & Economics	Qualitative	Assume a consistent 70mph dual carriageway will provide improvements in JT reliability against existing A96 alignment	N/A	N/A	N/A	Qualitative - no change in JT reliability	Qualitative - small improvement in JT reliability anticipated	Qualitative - moderate improvement in JT reliability anticipated	Qualitative - significant improvement in JT reliability anticipated	Junction Strategy not sufficiently progressed at this stage to determine impacts associated with congestion at junctions. If historical JT data is available in sufficient detail this can be used to establish existing levels of variability to be able to generate a scale of likely JT reliability improvements	
		Increased overtaking opportunities;	Traffic & Economics	Quantitative		Proportion increase in length of two lane carriageway available for OT	N/A	N/A	N/A	No change in OT opportunities	< 50% increase in OT opportunities	50-75% increase in OT opportunities	> 75% increase in OT opportunities	Existing overtaking opportunities considered to be DAL's/Climbing Lanes and Dual Carriageway only. Location of junctions not detailed until 2nd Fix Alignments therefore the impact of number, frequency & type of junction can not be determined at this stage
		Improved efficiency of freight movements along the transport corridor;	Traffic & Economics	Qualitative		Change in freight accessibility to existing and proposed commercial areas	Difficult for a route to connect directly to most existing and proposed commercial areas and requires increase in travel distance/time on local roads and/or new distributor roads. Likely to require freight vehicles to pass through populated urban areas.	Difficult for a route to connect directly to most existing and proposed commercial areas and requires increase in travel distance/time on local roads and/or new distributor roads.	Difficult for a route to connect directly to existing commercial areas and requires additional travel distance/time on local roads or new distributor roads.	No change to existing situation for freight traffic.	Opportunities for route to connect more directly with existing commercial areas	Opportunities for route to connect more directly with existing and proposed commercial areas	Opportunities for route to connect directly with existing and proposed commercial areas with direct access possible from trunk road	
			Traffic & Economics	Qualitative		Change in impact of height and weight restrictions along the route.	Significant increase in number of height/weight restrictions or type of limitation/number of vehicles affected	Moderate increase in number of height/weight restrictions or type of limitation/number of vehicles affected	Slight increase in number of height/weight restrictions or type of limitation/number of vehicles affected	No change in number of height and weight restrictions along the route	Slight reduction in number of height/weight restrictions or type of limitation/number of vehicles affected	Moderate reduction in number of height/weight restrictions or type of limitation/number of vehicles affected	Provision of high load route and no weight restrictions	Impact of restrictions considers requirement to travel via longer diversion routes and the no of vehicles impacted.
		Reduced conflicts between local traffic and strategic journeys	Traffic & Economics	Qualitative		Change in volume of strategic traffic travelling through urban areas to access A96	Likely to generate large increase in strategic traffic travelling through urban area	Likely to generate moderate increase in strategic traffic travelling through urban area	Likely to generate slight increase in strategic traffic travelling through urban area	No impact	Likely to generate slight decrease in strategic traffic travelling through urban area	Likely to moderate reduction in strategic traffic travelling through urban area	Likely to generate large decrease in strategic traffic travelling through urban area	Based on available ANPR information for Inverurie and likely junction locations (to be confirmed through junction strategy at Second Fix).
			Traffic & Economics	Qualitative		Interaction of strategic and local traffic along the route	Strategic traffic utilises existing roads not currently affected by the scheme. Local road network is severed and requires local trips to use strategic roads.	Strategic traffic utilises existing roads not currently affected by the scheme. New traffic is assigned to local road network in order to access strategic network (diversion due to new junction strategy)	Existing local road network	No change to existing routes and junction locations	Interaction of strategic traffic and local traffic on new road is slightly reduced but some strategic traffic will continue to use local roads	Interaction of strategic traffic and local traffic on new road is moderately reduced with few strategic trips required to use local roads	Strategic journeys do not interact with local traffic	Junction strategy not yet defined therefore full appraisal will be carried out at 2nd fix sifting. First Fix Assessment identifies number of local roads impacted by the proposed alignment and high level estimation of potential impacts.
	Engineering & Environmental	Qualitative	By Corridor	Commentary	For First Fix Alignment Appraisal this metric has been scoped out, for the following reasons: First Fix Alignments Phase is based on a comparative appraisal between alignments with a corridor area. The Improved Resilience Metric remains the same as at Corridor Options Phase since there is insufficient variation between alignment options within one corridor area to do a comparative appraisal on resilience. At Second Fix there will be end-to-end routes and this will allow for a more meaningful comparison on resilience. Winter resilience is dependent upon alignment characteristics, elevation, local microclimate, and subject to mitigation by local planting and land use. Operational resilience involves maintenance needs, including how accessible the road is and if there are any local diversions. Climate Change resilience considers how resistant the scheme is to flooding, high winds and landslips etc. The Corridors Appraisal highlighted adverse impacts in resilience in Corridor Options D+01 and D+02 due to the likelihood that any road in this location will be closed due to incident weather and existing issues at Glens of Fouldland. Corridor Options CN01, CN02 and CN03 all have higher elevations than the existing A96 and so these have also been identified as having adverse or large adverse impacts in terms of resilience. Corridor Option OUN also has issues in that the existing A96 has resilience issues in this location and so an online corridor would have similar issues.							Scoped Out for First Fix Appraisal		
2	To improve safety for motorised and Non-Motorised Users through:	Reduced accident rates and severity	Traffic & Economics	Qualitative	Impacts of changes in route length, category and hilliness/bendiness on existing accident patterns within the section	Significant increase in accident rates and severity expected. Alignment introduces new hazards or increases potential for accidents (e.g. high number of at grade junctions on higher speed road, high likelihood of exposure to poor weather or road conditions, sharp bends etc.)	Moderate increase in accident rates and severity expected. Alignment introduces new hazards or increases potential for accidents (e.g. some at grade junctions on higher speed road, high-moderate likelihood of exposure to poor weather or road conditions, sharp bends etc.)	Minor increase in accident rates and severity expected. Alignment introduces new hazards or increases potential for accidents (e.g. some at grade junctions on higher speed road, moderate likelihood of exposure to poor weather or road conditions, sharp bends etc.)	No expected change to accident rates	Minor reduction in accident rates expected associated with improvements to junctions and alignment.	Moderate reduction in accident rates expected. Reduction in number of junctions and improvement in standard of junctions with some at-grade junction remaining. Improved alignment.	Significant reduction in accidents expected. Fully grade separated junctions, improved alignment, potentially reduced exposure to weather and poor road condition.	Junction Strategy not sufficiently progressed at this stage to determine safety impacts associated with junctions. Changes in accident rates and severity consider existing accident trends and causation factors for each section. Appraisal should assess against current accident trends on equivalent A96 section e.g. weather related incidents, overtaking incidents.	
		Reduced driver stress	Traffic & Economics	Qualitative	Proportion increase in length of two lane carriageway available for OT	N/A	N/A	N/A	No change in OT opportunities	< 50% increase in OT opportunities	50-75% increase in OT opportunities	> 75% increase in OT opportunities		
		Reduced potential conflicts between Motorised and Non Motorised Users	Traffic & Economics	Qualitative	Interaction of option on existing NMU routes and trip generators/attractors. No of conflict points (where option crosses/joins existing NMU route)	Increases traffic along existing NMU/shared routes, or removes existing NMU facilities or involves diversion of existing NMU route away from desire line and may result in informal NMU crossings. Increases number of potential NMU conflict points and cannot be mitigated by engineering design.	Increase in traffic along existing NMU/shared routes. Increases number of potential NMU conflict points which cannot be mitigated by engineering design.	Minor detriment to existing routes by new scheme, requiring minor diversion of NMU facilities.	No change to existing routes	Minor positive impact Existing NMU routes upgraded in vicinity of works	Improvement to the quality of routes/formalising crossing facilities. Reduction in traffic along existing shared vehicle / NMU routes. No of Conflict points reduced	Additional routes created along desire lines to offer alternative to existing shared routes. Improvement to the quality of existing NMU routes. Reduction in traffic along existing shared vehicle / NMU routes. No of Conflict points significantly reduced	NMU strategy in progress therefore appraisal adopts high level review of potential impacts.	
3	To provide opportunities to grow the regional economies on the corridor through:	Improved access to the wider strategic transport network	Traffic & Economics	Qualitative	Change in journey times or distance to reach other strategic transport infrastructure	Major detrimental impact. Access to strategic transport infrastructure facilities is less direct and requires significant extra travel time.	Moderate detrimental impact. Access to strategic transport infrastructure facilities is less direct and requires moderate increase in travel time.	Minor detrimental impact. Access to wider strategic transport infrastructure facilities is less direct and requires small increase in travel time.	No change to existing journey times	Minor improvement. Access to strategic transport infrastructure facilities is more direct or is likely to result in slightly shorter journey times or distance.	Moderate improvement. Access to strategic transport infrastructure facilities is more direct or is likely to result in moderately shorter journey times or distance.	Major improvement. Access to strategic transport infrastructure facilities is more direct or is likely to result in significantly shorter journey times or distance.	Use Scottish Government definition of strategic transport infrastructure - Aberdeen Airport, Aberdeen Harbour, AWRP, north of Scotland trunk road network (A90, A9 and A96), Inverness Airport. Appraisal makes assumptions about likely junction locations and will be refined at Second fix once Junction Strategy is confirmed. Consider some typical indicator trips and likely changes in journey times.	
		Enhanced access to jobs and services	Traffic & Economics	Quantitative	Change in journey time to regional trip attractors	Major detrimental impact. Journey times to regional trip attractors are very significantly longer.	Moderate detrimental impact. Journey times to regional trip attractors are significantly longer.	Minor detrimental impact. Journey times to regional trip attractors are slightly longer.	No change to journey times to regional trip attractors	Minor improvement. Journey times to regional trip attractors are slightly shorter	Moderate improvement. Journey times to regional trip attractors are slightly shorter	Major improvement. Journey times to regional trip attractors are very significantly shorter	Define a list of main regional trip attractors: Aberdeen city (major mixed), Dyce (mainly employment), Inverurie (minor mixed), Elgin (minor mixed), Inverness (major mixed). Appraisal makes assumptions about likely junction locations and will be refined at Second fix once Junction Strategy is confirmed. Consider some typical indicator trips and likely changes in journey times.	
4	To facilitate active travel in the corridor.	Traffic & Economics	Qualitative	Opportunity to improve facilities for active travel along route. Changes in traffic volumes along existing and proposed NMU routes. Changes in directness of existing NMU routes and facilities	Lack of opportunity to provide new and improved NMU routes along existing or new desire lines or to link to NMU trip generators/attractors. Proposal may reduce existing levels of NMU activity in the corridor due to detriment to existing NMU routes (including lengthy diversions or diversion, resulting in non-use, increase in level of traffic on share routes).	Proposal may reduce existing levels of NMU activity in the corridor due to detriment to existing NMU routes (including lengthy diversions or diversion, resulting in non-use, increase in level of traffic on share routes).	Minor detriment or diversion of existing NMU routes. Minor increase in vehicular traffic along existing NMU routes	Option unlikely to influence level of active travel in corridor.	Opportunity to improve existing NMU routes e.g. improved surfacing, segregation of cycle/pedestrian facilities. Minor reduction in traffic along existing NMU routes	Opportunity to improve existing facilities (e.g. formalised or grade separated crossings). Moderate reduction in traffic along existing NMU routes	Opportunity to create new and improved NMU routes along existing and new desire lines. Improved NMU facilities linking to NMU trip generators/attractors. Major reduction in traffic along existing NMU routes	This is closely linked to Scheme Objective 2 (reduced potential conflicts between motorised and non-motorised users)		
5	To facilitate integration with Public Transport Facilities.	Traffic & Economics	Qualitative	Change in journey times to railway stations, bus based park and ride sites and other locations suitable for existing or potential interchange	Major detrimental impact: Journey times to interchange facilities are likely to be very significantly longer	Moderate detrimental impact: Journey times to interchange facilities are likely to be significantly longer	Minor detrimental impact: Journey times to interchange facilities are likely to be slightly longer	No change to journey times to interchange facilities	Minor improvement: Journey times to interchange facilities are likely to be slightly shorter	Moderate improvement: Journey times to interchange facilities are likely to be significantly shorter	Major improvement: Journey times to interchange facilities are likely to be very significantly shorter	Changes in level of service by public transport covered in accessibility. Facilities include Huntly, Insh, Inverurie, Kintore railway stations, Dyce bus park and ride, Aberdeenshire's 'mini park and ride' sites on the A947. Appraisal makes assumptions about likely junction locations and will be refined at Second fix once Junction Strategy is confirmed. Consider some typical indicator trips and likely changes in journey times.		
6	To avoid significant environmental impacts and, where this is not possible, to minimise the environmental effect on:	The communities and people in the corridor;	Environmental			N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)		
		Natural and cultural heritage assets.	Environmental			N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	N/A (see STAG Environmental)	
STAG Criteria	1	Environment	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage	Adverse to large number of receptors and route <50m from new agglomeration	Adverse to large number of receptors and route <200m from new agglomeration	Adverse to low number of receptors and route <200m from new agglomeration	Adverse/benefit to low number of receptors and route >200m from new agglomeration	Benefit to low number of receptors and route <200m from new agglomeration	Benefit to large number of receptors and route <200m from new agglomeration	Benefit to large number of receptors and route >200m from new agglomeration		
			Environmental	Quantitative	By whole alignment with constraints identified at particular chainage	Introduction of roads and increase of noise to large population count	Introduction of roads and increase of noise to medium population count	Introduction of roads and increase of noise to low population count	No considerable difference between existing situation and proposed alignment	Decrease of noise at low population count	Decrease of noise at medium population count	Decrease of noise at high population count		

		People & Communities	Environmental	Qualitative	By whole alignment with constraints identified at particular chainage		Demolition of important community facility (e.g. hospital, school, doctor surgery, church, aged person home). Demolition of large clusters of properties.	Multiple instances of core paths and/or cycle route severance (> 3). Strong likelihood of deterrence from accessing community facilities and increased journey times to access facilities. Community facilities within alignment (shops etc.). Whole areas of recognised greenspace within/severed by alignment. Scattered private properties to be demolished. Loss of prime agricultural land	Some instances of core paths and/or cycle route severance (<= 3). Children/elderly likely to be deterred from accessing community facilities and/or potential for increased journey times to access facilities. Slight/partial impact on recognised greenspace. Loss of non-prime agricultural land.	No severance of core paths and/or cycle routes. No community facilities near the alignment. No severance of school catchment areas. No community facilities located within alignment. No recognised greenspace impacted. No demolition of private property required.	NA	NA	NA	
		Policies and Plans	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage		Alignments which pass through land subject to LDP allocations and/or land subject to local or major development planning permission.	Alignments which pass in close proximity to LDP allocations and/or land subject to local or major development planning permission.	Alignments which pass in proximity to LDP allocations and/or land subject to local or major development planning permission.	Alignments which do not pass through, or in close proximity to, LDP allocations or land subject to local or major development planning permission.	NA	NA	NA	
		Materials	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage		Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	Scoped out of 1st fix appraisal	
		Cultural Heritage	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage		A change to the fabric or setting of heritage assets that leads to a substantial environmental effect.	Changes to the fabric or setting of heritage assets that lead to a material environmental effect.	Changes to the fabric or setting of heritage assets that lead to a detectable but non-material environmental effect.	Changes to the fabric or setting of heritage asset that leads to, at most, a negligible environmental effect.	NA	NA	NA	
		Landscape & visual	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage		Long length of alignment within SLA/GDL or >50% within high sensitivity landscape. Substantial impact on setting of SLA/GDL. Poor fit with topography – presence of cuttings/embankments >20m in depth/height. Introduction of large structure(s) into baseline (excludes earthworks). Substantial loss of woodland/trees/hedges. Very large number of visual receptors affected (estimate). Very limited potential for mitigation.	Medium length of alignment within SLA/GDL or long length within high sensitivity undesignated landscape. Moderate impact on setting of SLA/GDL. Partial fit with topography – presence of cuttings/embankments 10-20m in depth/height. Introduction of medium sized structure(s) into baseline (excludes earthworks). Moderate loss of woodland/trees/hedges. Moderate number of visual receptors affected (estimate). Limited potential for mitigation.	Short length of alignment within SLA/GDL or medium length within undesignated landscape. Limited impact on setting of SLA/GDL. Reasonable fit with topography – presence of cuttings/embankments <10m in depth/height. Introduction of small structure(s) into baseline (excludes earthworks). Limited loss of woodland/trees/hedges. Small number of visual receptors affected (estimate). Potential for mitigation.	No alignment within SLA/GDL or short length within undesignated landscape. Negligible impact on setting of SLA/GDL. Good fit with topography – presence of cuttings/embankments <5m in depth/height. Introduction of structures that can be absorbed into baseline (excludes earthworks). Very little loss of woodland/trees/hedges. Few visual receptors affected (estimate). Good opportunities for embedded mitigation and enhancement.	NA	NA	NA	
		Nature Conservation	Environmental		By whole alignment with constraints identified at particular chainage		Wildcat priority area, SSSI or other nationally designated site	Sensitive areas, large blocks of ancient woodland and local designated sites	Small blocks of ancient woodland, water crossings	NA	NA	NA	NA	
		Geology, Soils & Contaminated Land and Groundwater	Environmental	Quantitative	By whole alignment with constraints identified at particular chainage	Geological SSSIs Prime Agricultural Land Sand and Gravel Resource Contaminated Land High Quality Aquifers Presence of Peat	Area of route contains a geological SSSI or three or more of the metrics	Area of route contains two of the metrics	Area of route contains one of the metrics	Area of the route contains none of the metrics	NA	NA	NA	
		Road Drainage and the Water Environment	Environmental	Qualitative	By whole alignment with constraints identified at particular chainage	1. Does the alignment impact on the functional floodplain? 2. Could the river crossings impact on channel morphology? 3. Is there a potential need for channel realignment?	Alignment passes through an area of extensive functional floodplain and is not perpendicular to direction of flow	Alignment passes through an area (or areas) of extensive functional floodplain by taking the shortest route. Alignment passes through an area (or areas) of extensive functional floodplain by taking the shortest route. Alignment passes through an area (or areas) of extensive functional floodplain by taking the shortest route. Potential realignment needed for a named waterbody currently at Good status for morphology.	Alignment passes through areas of narrow floodplain / encroaches only along the edge of the floodplain. All other crossings. Potential realignment needed for a named waterbody at less than Good status for morphology or for an unnamed waterbody.	Alignment does not encroach on the functional floodplain of any watercourses. Alignment does not require any watercourse crossings. Realignment unlikely to be required.	Realignment unlikely to be required.	Potential realignment needed for reach which appears to have been historically modified (for a named waterbody at less than Good status for morphology).	NA	
2	Safety	Accidents (addressed within Objective 2)	Traffic & Economics			See Objective 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	STAG Safety Criteria looks at 2 elements: Accidents and Security. Accident rates and severities are considered under Objective 2 and, to avoid duplication, will not be considered again under the STAG criteria.
		Security	Traffic & Economics	Qualitative		Remoteness from settlements/services/rest areas	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Security considers whether each option has any material impact on security for the users, e.g. remoteness from settlements. This criteria is not considered until 2nd Fix sifting due to insufficient detail on junction strategy, NMU provision and layby strategy.
3	Economy	Transport Economic Efficiency	Traffic & Economics	Qualitative		See Objective 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TEE impacts relate to benefits gained in journey times, IT reliability, driver frustration which is considered under Objective 1.
		Wider Economic Impacts	Traffic & Economics	Qualitative		Not part of appraisal until 2nd fix	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Wider Area Impacts are being considered by Aecom at programme level – methodology currently under development. However, to assist with sifting, methodology developed by Aecom/LEA will be applied to our section during 2nd fix appraisal.
4	Integration	Transport Integration	Traffic & Economics	Qualitative		See Objective 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		Transport and Land-use Integration	Traffic & Economics	Qualitative		Change in journey times to local development plan housing and commercial/business land allocations	Major detrimental impact: Journey times to LDP allocations likely to be very significantly longer	Moderate detrimental impact: Journey times to LDP allocations likely to be slightly longer	Minor detrimental impact: Journey times to LDP allocations likely to be slightly longer	No change in journey times to LDP allocations	Minor improvement: Journey times likely to be slightly shorter to LDP allocations	Moderate improvement: Journey times likely to be significantly shorter	Major improvement: Journey times to LDP allocations likely to be very significantly shorter	Physical impact on land allocations considered under Environment. Appraisal makes assumptions about likely junction locations and will be refined at Second Fix once Junction Strategy is confirmed. Consider some typical indicator trips and likely changes in journey times.
		Policy Integration	Traffic & Economics	Qualitative		Alignment with economic, environmental and other policies as they relate to transport, at national, regional and local level	Very significant misalignment with policies	Significant misalignment with policies	Insignificant misalignment with policies	Aligns with all policies	N/A	N/A	N/A	Assumed that a proposal which aligns with all policy is 'neutral' but there could be various degrees of misalignment
5	Accessibility & Social Inclusion	Community accessibility to services and public transport	Traffic & Economics	Qualitative		Major detriment to accessibility of existing public transport infrastructure. Very significantly longer walking and cycling journeys and/or very significant reduction in the number of public transport services to key trip attractors. Major detriment to bus journey times between existing public transport nodes. High number of existing public transport nodes bypassed by new route. Potential reduction in service.	Major detriment to accessibility of existing public transport infrastructure. Significantly longer walking and cycling journeys and/or significant reduction in the number of public transport services to key trip attractors. Moderate detriment to bus journey times between existing transport nodes and to residential areas. Some existing nodes bypassed by new route. Potential reduction in service.	Moderate detriment to accessibility of existing public transport infrastructure. Insignificantly longer walking and cycling journeys and/or insignificant reduction in the number of public transport services to key trip attractors. Minor detriment to bus journey times between existing transport nodes and to residential areas. Potential reduction in service.	No change in length of walking and cycling journeys and/or public transport services to key trip attractors	Minor improvement: shorter walking and cycling journeys and/or significant increase in the number of public transport services to key trip attractors. Slightly improved journey time between existing transport nodes.	Moderate improvement: significantly shorter walking and cycling journeys and/or very significant improvement of public transport services to key trip attractors. Moderately improved journey time between existing transport nodes.	Major improvement: very significantly shorter walking and cycling journeys and/or very significant improvement of public transport services to key trip attractors. Improved journey time between existing transport nodes. More direct access to public transport nodes. Potential for additional public transport services to be provided.	First Fix Appraisal will be based on current understanding of existing services and NMU facilities. Consultation with Aberdeenshire Council Public Transport team and Access Officers will be carried out prior to Second Fix to better understand local needs and aspirations.	
6	Feasibility	Alignment	Engineering	Quantitative	Whole Alignment	Alignment Length	>5km increase in length	Increase of 2-5 km in length from shortest route	Increase of 1-2km greater than shortest route	Within 1km of shortest route within corridor	N/A	N/A	N/A	
						Bendiness and Hilliness - Describes how favourable the alignment will be to users - reflects better fuel economy, emissions and journey time risk	N/A	Greater than 20% detriment of best alignment on Bendiness and Hilliness	Within 20% of best alignment on Bendiness and Hilliness	Best Alignment	N/A	N/A	N/A	
		Earthworks	Engineering	Quantitative	By chainage	Degree to which alignment reflects existing topography	Alignment >20m above/below local topography (cut or fill)	Alignment between 10-20m from local topography (cut or fill)	Alignment between 2 and 10m of local topography (cut or fill)	Alignment between 0-2m of local topography (cut or fill)	N/A	N/A	N/A	
				Quantitative	Whole Alignment	Bulk Earthworks	>50% of lowest quantity (cu.m per m basis)	Up to 25-50% of lowest quantity (cu.m per m basis)	Up to 10-25% of lowest quantity (cu.m per m basis)	Lowest quantity (+10%) (cu.m per m basis)	N/A	N/A	N/A	

		Geotechnical	Engineering	Qualitative	By chainage	<p>Assessment to be based on a combination of extent of earthworks and ground conditions (including contamination) constraints within the alignments: constraints considered:</p> <ul style="list-style-type: none"> - Size of cutting and ground conditions within cutting; - Size of embankment and embankment sub-strata; <p>Ground conditions to be considered as part of assessment:</p> <ul style="list-style-type: none"> - Peat (plan areas of compressible peat deposit identified) - Compressible Soils (compressible alluvial deposits) - Earthworks (areas of material (Sand and Gravel) with a potential for high proportion of re-use without processing (positive)) - Shallow Rock (areas of near-surface rock identified resulting in potentially hard/slow digging within road cuttings). - Made ground - Contamination (areas of made up (or reworked) ground with potential contamination risk). <p>Note any one of the constraints identified within the metric trigger that impact or benefit (for example a 20m to 29m high cutting in rock would be a Moderate Adverse Impact for that section of the alignment). The metric criteria are not cumulative (i.e. you do not need more than one of the constraints to trigger that impact or benefit. The metric will be used to identify the impact or benefit along stretches of the alignment. The alignments will then be ranked within the corridor.</p>	<ul style="list-style-type: none"> - 39m+ high embankments on non-compressible soils - 25m+ embankment on compressible soils (excluding peat) - 10m to 25m embankment on compressible soils (excluding peat) - 5m+ embankment on peat - 39m+ high cutting in rock - 39m+ cuttings in none identified geotechnical constraints - 25m+ high cuttings within compressible soils (excluding peat). - 5m+ high cuttings within peat - Cutting within registered landfill or other high designated waste source. 	<ul style="list-style-type: none"> - 19m to 39m high embankments on non-compressible soils - 10m to 25m embankment on compressible soils (excluding peat) - 0m to 5m high embankment on peat. - 19m to 39m high cuttings in rock - 19m to 39m high cuttings in non identified geotechnical constraint - 5m to 24m high cuttings within compressible soils (excluding peat) - 0m to 5m high cuttings within peat - Cutting within areas of made ground 	<ul style="list-style-type: none"> - 10m to 19m high embankments on non-compressible soils - 0m to 10m embankment on compressible soils (excluding peat) - At grade construction on Compressible material (including peat). - 10m to 19m high cuttings in non compressible soils and rock - 0m to 5m high cuttings in compressible soils (excluding peat) - Embankment on areas of made ground 	<ul style="list-style-type: none"> - 0m to 10m high embankments on non-compressible material - At grade construction on non-compressible material (including rock) - 0m to 10m high cutting in non-compressible soils or rock 	<ul style="list-style-type: none"> - 0m to 10m high cuttings within sand and gravel that has the potential to be re-used (there is a possibility that cuttings within rock could be a benefit depending on the volume of rock generated). 	N/A	N/A	N/A	Any one of the constraints identified within the metric trigger that impact or benefit (for example a 20m to 29m high cutting in rock would be a Moderate Adverse Impact for that section of the alignment). The metric criteria are not cumulative (i.e. you do not need more than one of the constraints to trigger that impact or benefit. The metric will be used to identify the impact or benefit along stretches of the alignment. The alignments will then be ranked within the corridor.
		Structures	Engineering	Quantitative	By chainage	<p>Would potential alignments within this corridor option require:</p> <ol style="list-style-type: none"> 1. Complex structural solutions or solutions which are off a substantial size 2. Structural solutions that are difficult to operate and maintain. 3. Existing structures to be demolished or modified? 4. Significant interfaces with third parties (e.g. Network Rail, SEPA or Local Councils) that may introduce constraints (e.g. on programme, construction sequence). 	<ol style="list-style-type: none"> 1. Very large and / or complex structure required such as tunnels, cable-stayed bridges and major viaducts. 2. Extremely complex, bespoke operation and maintenance requirements for major bridges. 3. Highly significant and complex demolition of existing structures required 4. Third-party requirements have a large adverse impact on construction programme and / or result in very complex construction methodologies 	<ol style="list-style-type: none"> 1. Large and complex structures required 2. Complex operation and maintenance requirements. 3. Significant and complex demolition or modification of existing structures required 4. Third-party requirements have an adverse impact on construction programme and / or result in complex construction methodologies 	<ol style="list-style-type: none"> 1. Structures are not complex or large and can be constructed using conventional construction techniques. 2. Straightforward operation and maintenance requirements but may require significant third-party interfaces. 3. Straightforward demolition or modification to existing structures required. Existing structures can be retained for future use. 4. Third-party requirements likely to introduce only minor constraints that are easily managed 	<ol style="list-style-type: none"> 1. Structures are not complex or large and can be constructed using conventional construction techniques. 2. Straightforward operation and maintenance requirements 3. Very limited demolition and / or modification of existing structures required. Existing structures can be retained for future use. 4. Limited third-party interface with no significant constraints. 	N/A	N/A	N/A	Any one of the constraints identified within the metric trigger that impact or benefit. The metric criteria are not cumulative (i.e. you do not need more than one of the constraints to trigger that impact or benefit. The metric will be used to identify the impact or benefit along stretches of the alignment). At this stage, bridges required for grade-separated junctions are not included in the appraisal as junction locations are not yet confirmed.	
		Flood Risk, Flood Plain, River Crossings & Drainage	Engineering	Qualitative	By chainage	<p>The proposed alignment passes through areas of active flood plain.</p> <p>Significant abnormal works, such as bridges and compensatory storage, are likely to be required to meet flood risk criteria.</p>	<p>The proposed alignment passes immediately adjacent to areas of active flood plain.</p> <p>Abnormal works, such as retaining structures and raised road geometry, are likely to be required to meet flood risk criteria.</p>	<p>The proposed alignment passes immediately adjacent to areas of active flood plain.</p> <p>Abnormal works may be required, but are not considered likely based on the current proposed profile.</p>	<p>The proposed alignment does not pass through, or immediately adjacent to, areas of existing active flood plain.</p> <p>No significant abnormal engineering works are anticipated.</p>	N/A	N/A	N/A			
					By chainage	<ol style="list-style-type: none"> 1. Does the proposed alignment pass through, or immediately adjacent to, areas of existing active flood plain, potentially impacting on flood risk and require associated abnormal engineering works? 2. Will water course crossings, particularly culverts, be required for this alignment? 	<p>Singularly, a culvert is required within a flood plain.</p> <p>Cumulatively, a large number of culverted watercourse crossings are likely to be required for this alignment.</p>	<p>Cumulatively, a moderate number of culverted watercourse crossings are likely to be required for this alignment.</p>	<p>Cumulatively, a small number of culverted watercourse crossings are likely to be required for this alignment.</p>	<p>Cumulatively, a very small number of culverted watercourse crossings are likely to be required for this alignment.</p>	N/A	N/A	N/A		
					By chainage	<ol style="list-style-type: none"> 3. Attenuation will be required prior to the discharge of surface water. Based on the alignment profile, is there adequate space at the low points & potential discharge outlets to accommodate an assumed storage? <p>The areas adjacent to the low points are either already developed or are in the active flood plain. It is not clear how the required storage could be accommodated.</p> <p>The areas adjacent to the low points are either already developed or are in the active flood plain, but there are areas nearby that could potentially provide the required space. Additional abnormal engineering works may be required.</p>	<p>The areas adjacent to the low points are either already developed or are in the active flood plain, but there are suitable areas nearby that could provide the required space.</p> <p>Additional abnormal engineering works are unlikely to be required.</p>	<p>The areas adjacent to the low points are either already developed or are in the active flood plain, but there are suitable areas nearby that could provide the required space.</p>	<p>The areas adjacent to the low points are either already developed or are in the active flood plain, with the space available to accommodate the assumed storage volume required.</p>	N/A	N/A	N/A			
		Utilities	Engineering	Quantitative	By chainage	<p>Impact on Strategic Utility Infrastructure or multiple impacts on Regional Utility Infrastructure</p>	<p>Impact on Regional Utility Infrastructure</p>	<p>Minor impact on Regional Utility Infrastructure or Major impact on Local Utility Infrastructure.</p>	<p>Impact on Local Utility Infrastructure Only.</p>	N/A	N/A	N/A			
		Construction Access & Temporary Disruption/Traffic Management	Engineering	Qualitative	By chainage	<p>Accessibility for construction</p> <p>Assessment of whether the road construction is made more difficult by location in relation to existing access routes</p> <p>Assessed by section of route.</p>	<p>No current access for construction - extensive temporary works required</p>	<p>Access for construction limited to unclassified and C roads</p>	<p>Access for construction limited to B roads</p>	N/A	N/A	N/A			
				Qualitative	By chainage (extended sections - multiple km likely for online options)	<p>Traffic Management to existing strategic routes - A96 and A920 - Major disruption or closures required to deliver the scheme including diversion of mainline traffic.</p> <p>Temporary disruption to existing road network and users/Traffic Management</p>	<p>Extended closure of local roads and extended diversion routes</p> <p>Extended traffic management to strategic routes (A920, A96)</p>	<p>Extended traffic management required to existing local routes</p>	<p>Traffic management to local routes. No extended road closures</p> <p>limited traffic management to existing strategic routes</p>	N/A	N/A	N/A			
7	Affordability	Cost, Abnormals and cost risk	Engineering	Qualitative	By whole alignment	<p>Complexity and scale of engineering works is directly proportional to cost and cost risk, in capital and maintenance costs</p>	<p>For First Fix Alignment Appraisal this metric has been scoped out, for the following reasons: This metric is reflected in each engineering disciplines' feasibility assessment of the first fix alignment options. The complexity and scale of engineering works is directly proportional to cost and cost risk, in capital and maintenance costs. E.g., -Very Large Structures are identified within the Structures Appraisal; -Abnormal Works such as potential for work in shallow rock or other challenging ground conditions has been identified within the Geotechnical Appraisal; -Flooding and drainage appraisals have identified any potential for abnormal works associated with flood compensation and the like; -Potential for major utility diversions or interfaces is identified in the Utilities Appraisal Comparative costs between alignments at this stage is not appropriate since we are not comparing end-to-end routes until second fix.</p>	<p>Does not address most key concerns identified in feedback. Unlikely to receive public support.</p>	<p>Does not address some key concerns identified in feedback. Public support may be limited.</p>	<p>Option does not impact on key issues identified</p>	<p>Addresses key concerns identified in feedback. Likely to receive public support.</p>	<p>Proactively addresses many concerns. Likely to receive public support.</p>	<p>Proactively addresses concerns and facilitates opportunities. Very likely to receive public support.</p>	Scoped Out for First Fix Appraisal	
8	Public Acceptability		Traffic & Economics	Qualitative		<p>Is the option more or less likely to achieve public support? Does the option address issues raised by local public?</p>	<p>Does not address most key concerns identified in feedback. Unlikely to receive public support.</p>	<p>Does not address some key concerns identified in feedback. Public support may be limited.</p>	<p>Option does not impact on key issues identified</p>	<p>Addresses key concerns identified in feedback. Likely to receive public support.</p>	<p>Proactively addresses many concerns. Likely to receive public support.</p>	<p>Proactively addresses concerns and facilitates opportunities. Very likely to receive public support.</p>			