

Appendix D

Corridor Options Appraisal - Criteria & Metrics

**A96 East of Huntly to Aberdeen
Corridor Options Assessment Metrics**

Criteria		Metric Owner	Metric Type	Metric	Major Adverse Impact	Adverse Impact	Neutral Impact	Beneficial Impact	Major Beneficial Impact	Notes	
5	To facilitate integration with Public Transport Facilities.	Traffic & Economics	Qualitative	Proximity of route to settlements for access to public transport and park & ride	Major detriment to accessibility of existing public transport infrastructure Major detriment to journey times between existing transport nodes and to residential areas Existing nodes bypassed by new route. Potential reduction in service	Minor detriment to accessibility of existing public transport infrastructure Minor detriment to journey times between existing transport nodes and to residential areas Existing nodes bypassed by new route. Potential reduction in service	No detriment to existing routes and connectivity. No obvious improvement to public transport provision due to new route	Improved journey time between existing transport nodes. Minor improvement in journey times between residential areas and public transport nodes	Improved journey time between existing transport nodes. Major improvement in journey times between residential areas and public transport nodes		
	6	To avoid significant environmental impacts and, where this is not possible, to minimise the environmental effect on:	Environmental		This is appraised using the developed STAG criteria below	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)	
		the communities and people in the corridor;	Environmental		This is appraised using the developed STAG criteria below	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									
1	Environment	Air quality	Environmental	Quantitative	Sensitive receptors within the route corridor (no) Air Quality Management Areas within the route corridor (no) Compliance Risk Road Network within the route corridor (no)	High number/density of sensitive receptors	Medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Air quality	Environmental	Quantitative	Assessment of potential changes in local air quality (qualitative) Assessment of potential changes in regional air quality (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Noise and vibration	Environmental	Quantitative	Sensitive receptors within the route corridor (no)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Noise and vibration	Environmental	Qualitative	Assessment of potential changes in traffic noise (qualitative) Potential for Candidate Noise Management Area impacts (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		People & Communities	Environmental	Quantitative	Properties within the route corridor (no) Area of route through each agricultural land class (km2) Length of route through forestry/woodland used for recreation (km) Area of route through LDP open spaces, community land, play parks, recreational playing fields (km2) Length of core paths affected by the route corridor (km)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		People & Communities	Environmental	Qualitative	Assessment of impacts on community severance	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Policies and Plans	Environmental	Quantitative	Area of route through LDP allocations including but not limited to industrial /commercial/employment allocations and residential allocations, protected areas/reserved land, allocated greenbelt and any other committed development (km2)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Materials	Environmental	Quantitative	Scoped out of corridor appraisal.	N/A	N/A	N/A	N/A	N/A	
		Cultural Heritage	Environmental	Quantitative	Number of listed buildings within route corridor (no) Number of scheduled monuments within route corridor (no) Area of gardens and designed landscapes within route corridor (km2) Area of inventory battlefields within route corridor (km2)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Cultural Heritage	Environmental	Qualitative	Assessment of effects on cultural heritage including setting	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
		Landscape & visual	Environmental	Quantitative	Area of route within special landscape area (km2) Residential receptors within the route corridor (no)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A	
Landscape & visual	Environmental	Qualitative	Potential effects on landscape character (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A			

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STAG		Nature Conservation	Environmental		Area of route through nationally designated sites (km2) Area of route through locally designated sites (km2) Area of route through priority habitats (km2) Proximity of route to National Deciduous Woodland in distance bands from the route corridor Area of route through ancient and native woodland (km2) Area of route through woodland (km2) Number of water crossings / size of waterbody being crossed (in distance bands from the route corridor)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
		Nature Conservation	Environmental	Qualitative	Assessment of potential impacts on other habitats and species (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
		Geology, Soils & Contaminated Land and Groundwater	Environmental	Quantitative	Area of route through designated geological sites (km2) Area of route through soil resource (km2) Area of route through poor ground conditions (km2) Area of route through peat or peaty soils (km2)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
		Geology, Soils & Contaminated Land and Groundwater	Environmental	Qualitative	Potential contaminated land impacts (qualitative) Potential groundwater impacts (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
		Road Drainage and the Water Environment	Environmental	Qualitative	Potential hydro-geomorphological impacts (qualitative) Significant flood risk downstream of road embankment (potential use of road embankments as flood defence) (qualitative)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
		Road Drainage and the Water Environment	Environmental	Quantitative	Area of route through 1:100 year and 1:200 year fluvial floodplain (km2) Number/length of watercourse crossings (km)	High number/density of sensitive receptors	medium number/density of sensitive receptors	low number/density of sensitive receptors	N/A	N/A		
	2	Safety	Accidents (addressed within Objective 2)	Traffic & Economics		See Objective 2	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	Security' considers whether each option has any material impact on security for the users, eg remoteness from settlements. This criteria is not considered at Corridor Option 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	TEE impacts relate to benefits gained in journey times, JT 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	Wider Area Impacts are being considered by Aecom at programme level - methodology currently under development. However, to assist with sifting, methodology developed by Aecom/LTEA 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	
			Transport and Land-use Integration	Traffic & Economics	Qualitative	Impact on LDP proposals	Directly conflicts with majority of LDP allocations	Does not easily align with LDP allocations	N/A	Aligns with LDP allocations	Facilitates LDP allocations	The fit between the option and established land-use plans and land use
			Policy Integration	Traffic & Economics	Qualitative	Appraisal of fit against National, Regional and Local policy using Policy Assessment Framework tool	Does not align with the majority of policies	Partially aligns with policies with some significant differences	N/A	Supports key policies and partially aligns with remaining policies	Fully supports the majority of policies	
	5	Accessibility & Social	Community accessibility to services and public transport	Traffic & Economics	Qualitative	changes in accessibility provided by the public transport system and changes in accessibility by walking and cycling to local services/employment.						This will be assessed in detail at a later stage.
			Comparative accessibility by people group and location	Traffic & Economics	Qualitative	Does the option have an impact on accessibility/affordability/availability/ acceptability for vulnerable groups.	significantly disadvantages vulnerable/socially excluded groups by restricting travel choice and impacting on affordability.	Slightly disadvantages vulnerable/socially excluded groups by restricting travel choice and impacting on affordability.	No impact	Slightly increases travel choice and affordability for vulnerable/socially excluded groups	Significantly increases travel choice and affordability for vulnerable/socially excluded groups	
	6	Feasibility	Alignment & Buildability	Engineering	Qualitative	1. Is a compliant horizontal and vertical alignment achievable within the corridor option? 2. Impact of option on existing topography - what earthworks or structures are required? 3a. Are options accessible from the local road network to assist construction? 3b. Do options require onerous strategic traffic management?	1. Few compliant alignments likely to be feasible within the corridor option. 2. Likely major earthworks over a significant distance and or structures / tunnels to achieve compliant geometry. 3a. Corridor option remote from existing local roads and main routes. Access by undesirable routes only. New access route construction may be required for construction. 3b. Major disruption to existing strategic road network likely Extended road closures Major impact on diversion routes	1. Few compliant alignments likely to be feasible within the corridor option. 2. Likely moderate earthworks over a significant length. No tunnels required but large structures may be required. 3a. Corridor option accessible by minor or undesirable routes only. 3b. Disruption to existing strategic road network. Limited road closures. Minor impact on diversion routes.	1. Variety of compliant alignments likely to be available within the corridor option. 2. Likely average earthworks 3a. Corridor option accessible at multiple points via local and strategic roads 3b. Limited temporary disruption to strategic route.	1. Variety of compliant alignments likely to be available within the corridor option. 2. Likely low volume of earthworks 3a. Construction access possible at multiple points using existing strategic routes only 3b. Offline Construction	1. Variety of compliant alignments likely to be available within the corridor option. 2. Route generally matches existing topography Likely minimal earthworks 3a. Construction access possible at multiple points using strategic routes only. 3b. Offline construction	

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Geotechnical	Engineering	Engineering	Qualitative	<p>"Extent of potential geotechnical (including contamination) constraints within the corridor area: constraints considered:</p> <ul style="list-style-type: none"> - Peat (plan areas of compressible peat deposit identified) - Topography (steep sided slopes and high ground identified which have potential for substantial cuttings and embankments and possible slope stability issues) - Contamination (areas of made up (or reworked) ground with potential contamination risk) - Compressible Soils (s of compressible alluvial deposit identified) - 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). <p>Assessment will be based on four categories, No Recorded, localised, moderate and extensive areas."</p>	Extensive areas of potential geotechnical constraints identified. Peat and topography are considered the most critical.	Combination of Extensive and moderate areas of potential geotechnical constraints exists.	Combination of moderate / localised extent of potential geotechnical constraints exists in corridor area	Moderate / extensive areas of useable sand and gravel deposits exists, with combination of localised / Non-recorded areas of the potential geotechnical constraints.	Extensive areas of useable sand and gravel deposits exists with no recorded areas of the potential geotechnical constraints.	
Flood Risk, Flood Plain and River Crossings	Engineering & Environmental	Engineering & Environmental	Qualitative	<p>1. Does the proposed corridor pass through areas of existing active flood plain, potentially impacting on flood risk, and require associated abnormal engineering works?</p> <p>2. Will water course crossings, particularly culverts, be required for an alignment through this corridor?</p>	<p>1. There are notable areas of active flood plain within the corridor area, that are likely to be unavoidable should an alignment through this corridor be taken forward. Significant abnormal engineering works may be required to meet flood risk criteria.</p> <p>2. A large number of culverted watercourse crossings are likely to be required for an alignment with this corridor.</p>	<p>1. There are notable areas of active flood plain within the corridor area, however, depending on the alignment chosen, it should be possible to avoid them. Minor abnormal engineering works may be required to meet flood risk criteria.</p> <p>2. A moderate number of culverted watercourse crossings are likely to be required for an alignment with this corridor</p>	<p>1. There is either no active flood plain noted or all flooding within the corridor is very localised to the associated watercourses. No significant abnormal engineering works are anticipated.</p> <p>2. A small number of culverted watercourse crossings are likely to be required for an alignment with this corridor.</p>	N/A	N/A	
Structures	Engineering	Engineering	Qualitative	<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 (eg Network Rail, SEPA or Local Councils) that may introduce constraints (eg on programme, construction sequence). 	<ol style="list-style-type: none"> 1. Very large and / or complex structures required such as tunnels or cable-stayed bridges. 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 and / or a high number of significant new 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. A small number of new structures required. 2. Straight-forward operation and maintenance requirements. 3. Straight-forward demolition or modification to existing structures required. Existing structures can be retained for future use. 4. Third-party requirements introduce few minor constraints that are easily managed 	<ol style="list-style-type: none"> 1. N/A 2. N/A 3. N/A 4. N/A 	<ol style="list-style-type: none"> 1. N/A 2. N/A 3. N/A 4. N/A 	
Utilities	Engineering	Engineering	Qualitative	<p>Does the option require onerous utility diversions?</p> <p>Does the option require diversions or utility works that represent an unacceptable risk to the project?</p>	<p>Significant Impact on Strategic Utility Infrastructure;</p> <ol style="list-style-type: none"> 1. Diversion of Oil and Gas Pipelines 2. Diversion of Major Power Transmission Infrastructure. 3. Relocation of surface and foul water treatment facilities / reservoirs. 4. Relocation / Removal of multiple wind turbines. 	<p>Corridor option has a likely impact on Regional Utility Infrastructure or minor impact on Strategic Utility Infrastructure;</p> <ol style="list-style-type: none"> 1. Protection works and structures at Oil and Gas Pipeline Crossings. 2. Relocation of transmission pylons. 3. Diversion of non local utilities (telecoms, water, gas, electric). 4. Relocation of transmission masts or private/ individual wind turbines. 	<p>Corridor has a likely impact on Local Utility Infrastructure only;</p> <ol style="list-style-type: none"> 1. No diversions of Strategic or Regional Utility Infrastructure 2. Diversion and reinforcement of local utilities only. 	<p>Infrastructure gain / opportunity for Regional Utility Infrastructure;</p> <ol style="list-style-type: none"> 1. Reinforcement of Regional Utility Infrastructure (Unlikely to be able to identify at this stage) 	<p>Infrastructure gain / opportunity for Strategic Utility Infrastructure;</p> <ol style="list-style-type: none"> 1. Opportunity for reinforcement of Strategic Utility Infrastructure (Unlikely to be able to identify at this stage) 	

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7	Affordability	Cost, Abnormals and cost risk	Engineering	Qualitative	1. Capital costs - Are there exceptional, moderate or low numbers of abnormal engineering works? 2. Maintenance costs - Are abnormal maintenance costs expected (e.g large structures / earthworks) 3. Cost Risk - what degree of uncertainty exists with regard estimation of project cost (e.g. extent of poor and variable ground conditions, necessary environmental mitigations, major utilities crossings and diversions)	1. Exceptional capital costs associated with very large structures or other "abnormal" engineering works 2. High maintenance costs due to constituent engineering works 3. High cost risk associated with likely engineering works for the corridor option	1. Moderate capital costs associated with very large structures or other "abnormal" engineering works 2. Moderate maintenance costs due to constituent engineering works 3. Medium cost risk associated with likely engineering works for the corridor option	1. Low number of "abnormal" engineering works required to deliver the scheme 2. No abnormal maintenance costs expected 3. Low cost risk associated with likely engineering works for the corridor option	N/A	N/A	
	8	Public Acceptability		Traffic & Economics	Qualitative	Is the option more or less likely to achieve public support? Does the option address issues raised by local public?	Realises many of the key concerns identified in feedback. Very unlikely to receive public support.	Does not address key concerns identified in feedback. Unlikely to receive public support.	option does not impact on key issues identified	Addresses key concerns identified in feedback. Likely to receive public support.	Proactively addresses concerns and facilitates opportunities. Very likely to receive public support.

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