



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

A96 Dualling Programme

Strategic Environmental Assessment
Tier 1 Environmental Report

Appendix F - STAG Options
Assessment Tables

September 2014

Appendix F – STAG Intervention Options Schematics and Assessment Tables

STAG Intervention Option Schematics



Option 1: Rail Enhancements / Rolling Stock Improvements to Provide an End-To-End Travel Time of Around 1hr 45mins



Option 2: Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak



Option 3: Targeted Trunk Road Improvements



Option 4: Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96



Option 5: Bypasses and Dualling of Heavily Trafficked Sections plus Targeted Trunk Road Improvements



Option 6: Full Dualling plus Targeted Trunk Road Improvements

Table F1

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	1. Rail enhancements / rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins		
Description	Improved infrastructure to accommodate either electrified or high powered diesel rolling stock along the rail network.		
Assumptions	<ul style="list-style-type: none"> This option is based on the assumption that an average line speed of 60mph could be achieved along the route. Until further detailed assessment has been undertaken it will not be possible to determine what works would be required to deliver this option. The following potential infrastructure and rolling stock improvements may deliver these improvements and are assumed for assessment purposes only at this stage Electrification of railway route involving overhead line gantries and conductors and associated electrical lineside control equipment High powered diesel or electric rolling stock capable of faster acceleration from stations to reduce journey times Possible localised works to rails/formation to increase radii of curves or additional loops (mostly within existing rail corridor) <p>For modelling purposes: <i>1hr 45 mins journey time with frequencies no worse than do-minimum</i></p>		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Improved rail services between Aberdeen and Inverness has potential to encourage greater rail uptake/ modal shift although transport appraisal indicates much of uptake comes from bus users Modal shift from road to rail could result in minor route-wide reduction in traffic volume, with subsequent reduced congestion through population centres at peak (commuting) hours although traffic modelling indicates private car trips would only reduce slightly Could help reduce emissions related to through traffic within population centres, with potential benefits to human health Marginal reduction in traffic volume, as a result of modal shift, may benefit road safety Potential impacts on air quality depending on whether diesel or electric rolling stock favoured (electrification offers potential to reduce rail service emissions compared with Do Minimum where it is expected that services would be diesel based) Use of Park and Ride may increase traffic in the vicinity of rail stations In the longer term enhanced rail service could encourage some population shift to areas with improved services 	<ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor beneficial effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised and type of rolling stock favoured Overall, minor positive effects for population and human health at the regional scale
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Unlikely to affect designated biodiversity sites, as the majority of infrastructure works assumed to be within existing rail footprint and any outwith would be controlled via the relevant rail project planning process, taking into account sensitive areas Potential for minor effects from habitat loss associated with localised works although these are not predicted to be significant within the existing railway corridor Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for roadside vegetation, mobile species and road surface runoff Changes in rail service type are not predicted to have a significant effect on wildlife mortality, i.e. potential for collisions with trains not expected to significantly increase to a level that would affect regional species populations. Faster trains could increase noise disturbance to wildlife Potential secondary adverse effects on biodiversity as a result of new housing developments in areas benefitting from improved journey times – assumed to be minimal as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral at the regional scale with potential for minor adverse effects in some localised areas
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Unlikely to significantly affect the water environment, as the majority of infrastructure works assumed to be limited in extent and within the existing rail footprint and any outwith would be controlled via the relevant rail project planning process, taking into account sensitive areas Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, with neutral effects in terms of reducing pollutant load of road surface runoff 	<ul style="list-style-type: none"> Assessed as neutral at the regional scale

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	1. Rail enhancements / rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins		
Description	Improved infrastructure to accommodate either electrified or high powered diesel rolling stock along the rail network.		
Assumptions	<ul style="list-style-type: none"> This option is based on the assumption that an average line speed of 60mph could be achieved along the route. Until further detailed assessment has been undertaken it will not be possible to determine what works would be required to deliver this option. The following potential infrastructure and rolling stock improvements may deliver these improvements and are assumed for assessment purposes only at this stage Electrification of railway route involving overhead line gantries and conductors and associated electrical lineside control equipment High powered diesel or electric rolling stock capable of faster acceleration from stations to reduce journey times Possible localised works to rails/formation to increase radii of curves or additional loops (mostly within existing rail corridor) <p>For modelling purposes: <i>1hr 45 mins journey time with frequencies no worse than do-minimum</i></p>		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> Unlikely to significantly affect soils or geological sites and features, as the majority of infrastructure works assumed to be on made ground within existing rail footprint and any outwith would be controlled via the relevant rail project planning process, taking into account sensitive areas Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for roadside soils Potential for secondary effects on soil as a result of housing developments in areas benefitting from improved journey times – assumed to be minimal adverse as development would be controlled via the planning system and should avoid designated sites 	<ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Potential for minor adverse effects on setting of important historic environment features close to the railway from electrification infrastructure Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for heritage assets in population centres/ near the roadside Potential for indirect secondary effects as a result of new housing developments in areas benefitting from improved journey times – assumed to be minimal adverse as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral at the regional scale Potential for minor adverse localised effects on setting of historic environment features
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Unlikely to significantly adversely affect landscapes, as the majority of infrastructure works assumed to be within existing rail footprint and any outwith would be controlled via the relevant rail project planning process, taking into account sensitive areas Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for roadside visual receptors Depending on nature of electrification works there is potential for some minor adverse effects on sensitive visual receptors which are close to the railway Increased rail patronage likely to increase the proportion of population benefitting from views from trains Potential for indirect secondary effects on landscape, should improved journey times lead to development in new areas – assumed to be minor adverse as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral to minor adverse at the regional landscape scale Neutral effects for visual receptors at local levels from marginally reduced trunk road traffic Potential for minor adverse effects for visual receptors at local levels
SEA Summary (to inform STAG 'environment' criterion assessment for this Option)	<p>Population and Human Health</p> <ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor beneficial effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised and type of rolling stock favoured Overall, minor positive effects for population and human health at the regional scale <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale with potential for minor adverse effects in some localised areas <p>Water</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale 		<p>Soils & Geology</p> <ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level <p>Historic Environment</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale Potential for minor adverse localised effects on setting of historic environment features <p>Landscape</p> <ul style="list-style-type: none"> Assessed as neutral to minor adverse at the regional landscape scale Neutral effects for visual receptors at local levels from marginally reduced trunk road traffic Potential for minor adverse effects for visual receptors at local levels

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest

Table F2

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak		
Description	Rail service enhancements to allow a 15 minute frequency between Inverurie and Aberdeen and Nairn and Inverness during peak periods. The remaining settlements which are within one hour of Aberdeen and Inverness will receive a 30 minute frequency, which forms part of the hourly service between both cities.		
Assumptions	<ul style="list-style-type: none"> Track and signalling enhancements have been delivered through the Aberdeen to Inverness rail improvements project. The route has been electrified. 15 minute frequency of rail passenger services during the peak periods between Inverness and Nairn, and, Inverurie and Aberdeen (including stops at Dalcross and Kintore); 30 minute service between Aberdeen and Huntly and Inverness and Elgin calling at all stations Hourly service between Inverness and Aberdeen which does not call at all intermittent stations during peaks to make way for stops at Dalcross and Kintore <p>For modelling purposes: <i>1hr 45 mins journey time with frequencies no worse than do-minimum</i></p>		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Improved accessibility of rail services between Aberdeen and Inverness has potential to encourage greater rail uptake/ modal shift although transport appraisal indicates much of uptake comes from bus users Modal shift from road to rail could result in minor route-wide reduction in traffic volume, with subsequent reduced congestion through population centres at peak (commuting) hours although traffic modelling indicates private car trips would only reduce slightly Could help reduce emissions related to through traffic within population centres, with potential benefits to human health Marginal reduction in traffic volume, as a result of modal shift, may benefit road safety Use of Park and Ride may increase traffic in the vicinity of rail stations Service frequency enhancements assumed to be electric rolling stock therefore no significant increases expected in local emissions from rail operations In the longer term enhanced rail service could encourage some population shift to areas with improved public transport services Potential for minor adverse impacts on noise sensitive receptors, along the rail corridor, as a result of increased frequency of rail services 	<ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor adverse effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised Minor, locally adverse effects to noise sensitive receptors around the rail corridor associated with increased service frequency Overall, a combination of minor positive and minor adverse (mixed) effects for population and human health at the regional scale
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Unlikely to affect designated biodiversity sites, as no infrastructure works are proposed Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, with neutral effects for roadside vegetation, mobile species and road surface runoff Increase in rail service frequency is not predicted to have a significant effect on wildlife mortality, i.e. potential for collisions with trains not expected to significantly increase to a level that would affect regional species populations Potential indirect effects on biodiversity as a result of new housing developments in areas benefitting from improved rail service frequency – assumed to be minimal adverse as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral at the regional scale
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Unlikely to significantly affect the water environment, as no infrastructure works are proposed Service frequency enhancements assumed to be electric rolling stock, with some elevated risk of spillage affecting quality of runoff from track drainage at the local level (associated with increased commuter services); however, no significant change expected at the regional level Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, with neutral effects in terms of reducing pollutant load of road surface runoff 	<ul style="list-style-type: none"> Assessed as predominantly neutral, but with potential for minor adverse impact on track drainage runoff, at the local scale

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak		
Description	Rail service enhancements to allow a 15 minute frequency between Inverurie and Aberdeen and Nairn and Inverness during peak periods. The remaining settlements which are within one hour of Aberdeen and Inverness will receive a 30 minute frequency, which forms part of the hourly service between both cities.		
Assumptions	<ul style="list-style-type: none"> Track and signalling enhancements have been delivered through the Aberdeen to Inverness rail improvements project. The route has been electrified. 15 minute frequency of rail passenger services during the peak periods between Inverness and Nairn, and, Inverurie and Aberdeen (including stops at Dalcross and Kintore); 30 minute service between Aberdeen and Huntly and Inverness and Elgin calling at all stations Hourly service between Inverness and Aberdeen which does not call at all intermittent stations during peaks to make way for stops at Dalcross and Kintore For modelling purposes: <i>1hr 45 mins journey time with frequencies no worse than do-minimum</i>		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> Unlikely to significantly affect soils or geological sites and features, as no infrastructure works are proposed Marginal modal shift predicted from road to rail, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for roadside soils Potential for indirect effects on soil as a result of housing developments in areas benefitting from improved rail service frequency – assumed to be minimal adverse as development would be controlled via the planning system and should avoid designated sites 	<ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Unlikely to significantly affect historic environment sites and features, as no infrastructure works are proposed Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for heritage assets in population centres/ near the roadside Potential for secondary effects as a result of new housing developments in areas benefitting from improved rail service frequency – assumed to be minimal adverse as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral at the regional scale
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Unlikely to adversely affect landscapes, as no infrastructure works are proposed Marginal modal shift from road to rail predicted, with limited potential for reduction in trunk road traffic volume at peak times, leading to neutral effects for roadside visual receptors Increased rail patronage likely to increase the proportion of population benefitting from views from trains Increased service frequency may present mixed minor impacts for visual receptors within the vicinity of the railway Potential for secondary effects on landscape should improved rail service lead to development in new areas – assumed to be minor adverse as development would be controlled via the planning system 	<ul style="list-style-type: none"> Assessed as neutral at the regional landscape scale Potential for mixed (minor positive to minor adverse) effects for visual receptors at local levels
SEA Summary <small>(to inform STAG 'environment' criterion assessment for this Option)</small>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor adverse effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised Minor, locally adverse effects to noise sensitive receptors around the rail corridor associated with increased service frequency Overall, a combination of minor positive and minor adverse (mixed) effects for population and human health at the regional scale <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale 		<p>Water</p> <ul style="list-style-type: none"> Assessed as predominantly neutral, but with potential for minor adverse impact on track drainage runoff, at the local scale <p>Soils & Geology</p> <ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level <p>Historic Environment</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale <p>Landscape</p> <ul style="list-style-type: none"> Assessed as neutral at the regional landscape scale Potential for mixed (minor positive to minor adverse) effects for visual receptors at local levels

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest

Table F3

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	3. Targeted Trunk Road Improvements		
Description	Physical works to improve safety and operational efficiency of the A96, such as: WS2+1 sections; climbing lanes; hard strip provision; local realignments and junction improvements.		
Assumptions	<ul style="list-style-type: none"> Assume generally where possible to complete on-line and where land allows for junction improvements Works targeted on sections where safety and operation are issues Assume avoidance of most severe effects on constraints, designations and communities 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Minor local benefits in terms of reduction in accident levels at targeted trunk road locations (but unlikely to result in a change in severity ratios) Minor local benefits as a result of provision of opportunities for overtaking at targeted trunk road locations, with potential to slightly improve operational efficiency and reduce driver stress Minor benefits at the regional scale as a result of reduced accident rates, congestion and journey times Potential for major local adverse effects related to transitions between road carriageway standards for drivers on the A96 (i.e. single to 2+1 and back) 	<ul style="list-style-type: none"> Minor benefits at the local scale where improved sections address operational issues and improve road safety Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Some designated biodiversity conservation sites are intersected by the existing A96, including: <ul style="list-style-type: none"> Quarry Wood and Loch Oire SSSIs near Elgin River Spey SAC and SSSI between Mosstodloch and Fochabers Potential for adverse effects, including habitat loss/ fragmentation due to land take for improvement work, depending on final alignments and locations of works Unlikely to significantly adversely affect designated biodiversity sites, given the assumption that improvement works will avoid the most severe effects on constraints and designations – improvement locations to be informed by designated site boundaries Likely to provide minor benefit to road surface runoff quality, as improvements will incorporate up to date design standards including SuDS Neutral effects on roadside vegetation, migrating species and runoff quality since no material change in trunk road traffic volumes is predicted 	<ul style="list-style-type: none"> Assessed as minor adverse at the regional scale Severity of adverse effects will depend on design, location and scale of improvement works
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Unlikely to significantly affect designated watercourses (e.g. River Spey) or coastal Natura sites, as the majority of infrastructure works assumed to be online and where land allows, and should avoid sensitive areas Upgraded sections will incorporate current design standards, including SuDS – minor localised benefits to surface water discharge quality – assume minor benefit at regional level Potential for habitat effects on wetland sites within the SEA study area, depending on final location of targeted trunk road improvements – assume minor adverse effect at the regional level Potential for locally minor adverse effects associated with channel/ bankside works for crossings/ culverts in new locations – dependent on final location of targeted trunk road improvements – assume minimal impact at the regional level Areas of flood risk at various points along the route, including significant areas around Forres and Elgin, may coincide with targeted trunk road improvement locations No significant change to flood risk due to targeted trunk road improvements anticipated – flood risk zones to inform location of targeted trunk road improvements – assume neutral effect 	<ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for neutral to minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	3. Targeted Trunk Road Improvements		
Description	Physical works to improve safety and operational efficiency of the A96, such as: WS2+1 sections; climbing lanes; hard strip provision; local realignments and junction improvements.		
Assumptions	<ul style="list-style-type: none"> Assume generally where possible to complete on-line and where land allows for junction improvements Works targeted on sections where safety and operation are issues Assume avoidance of most severe effects on constraints, designations and communities 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> There are a range of geodiversity (SSSI and GCR) sites within the SEA study area, including Bin Quarry SSSI north of Huntly, and potential for avoidance or adverse effects is dependent on final location of improvement works, which should avoid sensitive areas Large expanses of peaty soils within the SEA study area, including between Fochabers and Keith/ Huntly – potential for avoidance or adverse effects is dependent on final location of improvement works Some areas of productive agricultural land within the SEA study area, including around Elgin, Forres and Inverurie – scale of impact is dependent on final location of improvement works Minimal changes to journey times are predicted with neutral effects on roadside soils from traffic levels 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations Overall, assessed as likely to present minor adverse effects at the regional level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Range of historic environment features in the SEA study area potentially affected by targeted trunk road improvements, these include: <ul style="list-style-type: none"> SM – Forres (E,S,W), Elgin (mainly N), Huntly (N), Inverurie (N,S,E,W), surrounding the A96 in area from Skares to Kintore GDL – Forres (E,S,W), Elgin (N), Fochabers (N), two in stretch from Skares to Westhall, Inverurie (E) Battlefields – Inverurie (Harlaw, NW) LB – clusters around population centres, and spread through the SEA study area CA – Forres, Elgin, Fochabers, Keith Potential for direct (e.g. losses, moderate adverse) and/ or indirect (e.g. setting, minor to moderate adverse) impacts, depending on final location of improvement works Unlikely to significantly adversely affect heritage assets, given the assumption that improvement works will avoid the most severe effects on constraints and designations – improvement locations to be informed by historic environment constraint boundaries 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations of works Overall, assessed as likely to present minor to moderate adverse effects at the regional level
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Direct impacts on landscape (including locally designated landscapes) will depend on final alignments of targeted trunk road improvements, such as the location of upgraded junctions etc. and the relative sensitivity of the receiving landscape Potential adverse visual impacts on some sensitive receptors local to improvements 	<ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest, GCR = Geological Conservation Review site

SM = Scheduled Monuments, GDL = Gardens and Designed Landscapes, LB= Listed Buildings, CA = Conservation Areas

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	3. Targeted Trunk Road Improvements		
Description	Physical works to improve safety and operational efficiency of the A96, such as: WS2+1 sections; climbing lanes; hard strip provision; local realignments and junction improvements.		
Assumptions	<ul style="list-style-type: none"> • Assume generally where possible to complete on-line and where land allows for junction improvements • Works targeted on sections where safety and operation are issues • Assume avoidance of most severe effects on constraints, designations and communities 		
SEA Summary (to inform STAG 'environment' criterion assessment for this Option)	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Population and Human Health</p> <ul style="list-style-type: none"> • Minor benefits at the local scale where improved sections address operational issues and improve road safety • Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard • Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> • Assessed as minor adverse at the regional scale • Severity of adverse effects will depend on design, location and scale of improvement works <p>Water</p> <ul style="list-style-type: none"> • Minor benefits to surface water runoff discharge quality at local and regional scales • Neutral effect on flooding and flood risk at the regional scale • Locally minor to moderate adverse effects associated with channel/bankside works for crossings and culverts • Potential for neutral to minor adverse effects on wetland habitats at the regional level • Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections </td> <td style="width: 50%; vertical-align: top;"> <p>Soils & Geology</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations • Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations • Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> • Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale • Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations • Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures </td> </tr> </table>	<p>Population and Human Health</p> <ul style="list-style-type: none"> • Minor benefits at the local scale where improved sections address operational issues and improve road safety • Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard • Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> • Assessed as minor adverse at the regional scale • Severity of adverse effects will depend on design, location and scale of improvement works <p>Water</p> <ul style="list-style-type: none"> • Minor benefits to surface water runoff discharge quality at local and regional scales • Neutral effect on flooding and flood risk at the regional scale • Locally minor to moderate adverse effects associated with channel/bankside works for crossings and culverts • Potential for neutral to minor adverse effects on wetland habitats at the regional level • Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections 	<p>Soils & Geology</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations • Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations • Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> • Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale • Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations • Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures
<p>Population and Human Health</p> <ul style="list-style-type: none"> • Minor benefits at the local scale where improved sections address operational issues and improve road safety • Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard • Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> • Assessed as minor adverse at the regional scale • Severity of adverse effects will depend on design, location and scale of improvement works <p>Water</p> <ul style="list-style-type: none"> • Minor benefits to surface water runoff discharge quality at local and regional scales • Neutral effect on flooding and flood risk at the regional scale • Locally minor to moderate adverse effects associated with channel/bankside works for crossings and culverts • Potential for neutral to minor adverse effects on wetland habitats at the regional level • Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections 	<p>Soils & Geology</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations • Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations • Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> • Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale • Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations • Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures 		

Table F4

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	4. Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96		
Description	Single carriageway bypasses of Forres, Elgin and Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.		
Assumptions	<ul style="list-style-type: none"> Assumes that all three bypasses are constructed Assume avoidance of most severe effects on constraints, designations and communities On remainder of the route as Option 3 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Minor benefits in terms of reduced journey times and improved connectivity as a result of improvements at bypass locations, with associated benefits for businesses that rely on transportation via the A96 Minor benefits at the regional scale as a result of reduced accident rates, congestion and journey times Minor local benefits in terms of reduction in accident rate and severity at targeted trunk road locations Minor local benefits as a result of provision of opportunities for overtaking at targeted trunk road locations, improving operational efficiency and reducing driver stress Moderate local benefits in terms of reduced congestion through bypassed population centres Minor to moderate local benefits in terms of reduced noise and emissions through bypassed population centres, with secondary human health benefits Moderate local adverse effects for properties/ residents close to new bypass sections, currently unaffected by A96 issues Improvements to operational efficiency and journey times may encourage increased use of the A96 trunk road, potentially moving congestion, emissions and accidents to different points along the route; however, SEA assumes that these issues will be monitored and addressed under targeted improvements (traffic modelling indicates little overall change in trunk road traffic) Potential for moderate local adverse effects related to transitions between carriageway standard (i.e. single to 2+1 and back) 	<ul style="list-style-type: none"> Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity Minor to moderate benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Wide range of designated biodiversity conservation sites which could potentially be affected by upgrades/ bypasses, these include: <ul style="list-style-type: none"> SSSIs around Forres (SW), Elgin (N and W), Lhanbryde (E) and Keith (S) SPAs around Forres (SW) and Elgin (N) River Spey SAC and SSSI between Mosstodloch and Fochabers Mortlach Moss SAC and SSSI between Keith and Huntly Unlikely to significantly impact designated biodiversity sites, given requirements for HRA (Natura) and route alignment selection processes (SSSI) – assume, as worst case, locally minor to major impacts should particular sites prove unavoidable Potential for local habitat impacts, including woodland fragmentation, as a result of land take for bypasses and targeted trunk road improvements, significance depends on final alignment selection – assume, as worst case, minor to moderate impacts at the regional level Minor improvements to traffic flow and journey times are not predicted to significantly encourage increased use of the A96, with neutral effects on roadside vegetation, mobile species (through vehicle collision) and road surface runoff quality This option not anticipated to increase species/ vehicle collisions to a level that would significantly affect regional species populations New bypasses and targeted trunk road improvements will incorporate current design standards, including provisions for mammal passes, compensatory habitat creation and SuDS resulting in local benefits – assume incremental minor benefit at the regional level 	<ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Limited potential for impacts on designated watercourses (e.g. River Spey) – unlikely to be affected by this option Coastal Natura sites unlikely to be affected by this option Bypass sections and targeted trunk road improvements will incorporate current design standards, including SuDS – minor localised benefits to surface water discharge quality – assume minor benefit at regional level Potential for habitat effects on wetland sites within the SEA study area, depending on final location of bypass sections and targeted trunk road improvements – assume minor adverse effect at the regional level Potential for locally minor adverse effects associated with channel/ bankside works for crossings/ culverts in new locations –dependent on final location of bypass sections – assume minimal impact at the regional level Areas of flood risk at various points along the route, including wide expanses around Forres and Elgin No significant change to flood risk due to this option anticipated – flood risk zones to inform location of bypasses and improvement works – assume neutral effect 	<ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of bypass sections/ improvement works

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	4. Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96		
Description	Single carriageway bypasses of Forres, Elgin and Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.		
Assumptions	<ul style="list-style-type: none"> Assumes that all three bypasses are constructed Assume avoidance of most severe effects on constraints, designations and communities On remainder of the route as Option 3 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> There are a number of geodiversity sites within the SEA study area, including to the north of Forres, Elgin and Huntly – potential for avoidance or adverse effects is dependent on final alignment of bypasses and improvement works Large expanses of peaty soils within the SEA study area, including between Fochabers and Keith/ Huntly – potential for avoidance or adverse effects is dependent on final alignment of bypasses and improvement works Large areas of productive agricultural land within the SEA study area, including around Elgin, Forres and Inverurie – scale of impact is dependent on final alignment of bypasses and improvement works Minor improvements to journey times are not predicted to significantly encourage increased use of the A96 trunk road, with neutral effects predicted on roadside soils Potential for minor benefits to roadside soil quality on de-trunked sections of the route 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Wide range of historic environment features in the SEA study area potentially affected by bypasses and improvement works, these include: <ul style="list-style-type: none"> SM – Forres (E,S,W), Elgin (mainly N), Huntly (N), Inverurie (N,S,E,W), surrounding the A96 in area from Skares to Kintore GDL – Forres (E,S,W), Elgin (N), Fochabers (N), two in stretch from Skares to Westhall, Inverurie (E) Battlefields – Inverurie (Harlaw, NW) LB – clusters around population centres, and spread through the SEA study area CA – Forres, Elgin, Fochabers, Keith Potential for direct (e.g. losses, moderate adverse) and/ or indirect (e.g. setting, minor to moderate adverse) impacts, depending on final alignments of bypasses and improvement works Unlikely to significantly adversely affect heritage assets, given the assumption that improvement works will avoid the most severe effects on constraints and designations – improvement locations to be informed by historic environment constraint boundaries Potential for minor benefits to buildings/ monuments and Conservation Areas within bypassed population centres as a result of reduced vehicle emissions 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement locations Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Direct impacts on landscape (including locally designated landscapes) will depend on final alignments of bypasses and improvement works and the relative sensitivity of the receiving landscape Areas around 'Highland Straths' (e.g. Speyside and Strath Bogie) from Mosstodloch to Skares potentially more sensitive to dualling than more open arable agricultural areas Potential for improved 'view from the road', and enhanced travellers' experience, depending on final alignment of bypasses Potential local benefits to visual amenity for bypassed population centres from reduced traffic volumes/ congestion Potential adverse visual impacts on sensitive receptors local to some parts of the new bypasses and improvement works 	<ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass locations/ improvement works Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest, GCR = Geological Conservation Review site

SM = Scheduled Monuments, GDL = Gardens and Designed Landscapes, LB= Listed Buildings, CA = Conservation Areas

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario	
STAG Option	4. Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96
Description	Single carriageway bypasses of Forres, Elgin and Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.
Assumptions	<ul style="list-style-type: none"> Assumes that all three bypasses are constructed Assume avoidance of most severe effects on constraints, designations and communities On remainder of the route as Option 3
SEA Summary (to inform STAG 'environment' criterion assessment for this Option)	<p>Population and Human Health</p> <ul style="list-style-type: none"> Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity Minor to moderate benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS <p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of bypass sections/ improvement works <p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement locations Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass locations/ improvement works Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures

Table F5

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	5. Dual Carriageway Bypasses and Dualling of Heavily Trafficked Sections of the A96 plus Targeted Trunk Road Improvements		
Description	Dual carriageway bypasses of Forres, Elgin and Inverurie and dualling of heavily trafficked sections of the A96. Single carriageway bypass of Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.		
Assumptions	<ul style="list-style-type: none"> Dual carriageway on the most heavily trafficked sections Dual carriageway bypasses around Forres, Elgin and Inverurie. Single carriageway bypass around Keith (assume avoidance of most severe effects on constraints, designations and communities) On remainder of the route as Option 3 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Moderate regional benefits in terms of reduced journey times and improved connectivity and safety as a result of improvements at key locations, with associated benefits for businesses that rely on transportation via the A96 Improved operational efficiency and provision of overtaking opportunities at targeted locations likely to reduce driver stress and provide moderate to major local benefits in terms of reduced accident rates and severity at key locations Moderate to major local benefits in terms of reduced congestion through bypassed population centres and along improved sections of the route Moderate local benefits in terms of reduced noise and emissions through bypassed population centres, with secondary human health benefits Moderate local adverse effects for properties/ residents close to new dualled sections, currently unaffected by A96 issues Improvements to traffic flow and journey times is predicted to result in increased traffic flows on the A96 trunk road, potentially putting pressure on non-dualled sections Increased use of the A96 trunk road could potentially move congestion, emissions and accidents to different points along the route; however, SEA assumes that these issues will be monitored and addressed under targeted improvements 	<ul style="list-style-type: none"> Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Wide range of designated biodiversity conservation sites which could potentially be affected by upgrades/ bypasses, these include: <ul style="list-style-type: none"> SSSIs around Forres (SW), Elgin (N and W), Lhanbryde (E) and Keith (S) SPAs around Forres (SW) and Elgin (N) River Spey SAC and SSSI between Mosstodloch and Fochabers Mortlach Moss SAC and SSSI between Keith and Huntly Unlikely to significantly impact designated biodiversity sites, given requirements for HRA (Natura) and route alignment selection processes (SSSI) – assume, as worst case, locally minor to major impacts should particular sites prove unavoidable Potential for local habitat impacts, including woodland fragmentation, as a result of land take for upgraded sections/ bypasses, significance depends on final alignment selection – assume, as worst case, minor to moderate impacts at the regional level Road widening/ upgraded sections could present increased barrier to species movement across the route – assume minor adverse at the regional level Improvements to traffic flow and journey times predicted to increase use of the A96, potentially adversely affecting roadside vegetation, mobile species (through vehicle collision) and road surface runoff quality This option is not anticipated to increase species/ vehicle collisions to a level that would significantly affect regional species populations Improvements at targeted locations will incorporate current design standards, including provisions for mammal passes, compensatory habitat creation and SuDS resulting in local benefits – assume incremental minor benefit at the regional level 	<ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Limited potential for impacts on designated watercourses (e.g. River Spey) – unlikely to be affected by this option Coastal Natura sites unlikely to be affected by this option Upgraded/ bypass sections will incorporate current design standards, including SuDS – minor localised benefits to surface water discharge quality – assume minor benefit at regional level Potential for habitat effects on wetland sites within the SEA study area, depending on final location of upgraded/ bypass sections – assume minor adverse effect at the regional level Potential for locally minor adverse effects associated with channel/ bankside works for crossings/ culverts in new locations –dependent on final location of upgraded/ bypass sections – assume minimal impact at the regional level Areas of flood risk at various points along the route, including significant areas around Forres and Elgin No significant change to flood risk due to this option anticipated – flood risk zones to inform location of upgrades/ bypasses – assume neutral effect 	<ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	5. Dual Carriageway Bypasses and Dualling of Heavily Trafficked Sections of the A96 plus Targeted Trunk Road Improvements		
Description	Dual carriageway bypasses of Forres, Elgin and Inverurie and dualling of heavily trafficked sections of the A96. Single carriageway bypass of Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.		
Assumptions	<ul style="list-style-type: none"> Dual carriageway on the most heavily trafficked sections Dual carriageway bypasses around Forres, Elgin and Inverurie. Single carriageway bypass around Keith (assume avoidance of most severe effects on constraints, designations and communities) On remainder of the route as Option 3 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> There are a number of geodiversity sites within the SEA study area, including to the north of Forres, Elgin and Huntly – potential for avoidance of adverse effects is dependent on final alignment of bypasses/ upgraded sections Large areas of peaty soils in the SEA study area, including between Fochabers and Keith/ Huntly – potential for avoidance of adverse effects is dependent on final alignment of bypasses/ upgraded sections Large areas of productive agricultural land within the SEA study area, including around Elgin, Forres and Inverurie – scale of impact is dependent on final alignment of bypasses/ upgraded sections Improvements to journey times as a result of reduced congestion and accident frequencies are predicted to increase use of the A96 trunk road, potentially impacting roadside soils Potential benefits to roadside soil quality on de-trunked sections of the route 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Wide range of historic environment features in the SEA study area potentially affected by upgrades/ bypasses, these include: <ul style="list-style-type: none"> SM – Forres (E,S,W), Elgin (mainly N), Huntly (N), Inverurie (N,S,E,W), surrounding the A96 in area from Skares to Kintore GDL – Forres (E,S,W), Elgin (N), Fochabers (N), two in stretch from Skares to Westhall, Inverurie (E) Battlefields – Inverurie (Harlaw, NW) LB – clusters around population centres, and spread through the SEA study area CA – Forres, Elgin, Fochabers, Keith Potential for direct (e.g. losses, major adverse) and/ or indirect (e.g. setting, minor to moderate adverse) impacts, depending on final alignments of bypasses/ upgraded sections Unlikely to significantly adversely affect heritage assets, given the assumption that improvement works will avoid the most severe effects on constraints and designations – improvement locations to be informed by historic environment constraint boundaries Potential for minor benefits to buildings/ monuments and Conservation Areas within bypassed population centres as a result of reduced vehicle emissions 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Direct impacts on landscape (including locally designated landscapes) will depend on final alignments of bypasses/ upgraded sections, the location of upgraded junctions etc. and the relative sensitivity of the receiving landscape Areas around 'Highland Straths' (e.g. Speyside and Strath Bogie) from Mosstodloch to Skares potentially more sensitive to dualling than more open arable agricultural areas Potential for improved 'view from the road', and enhanced travellers' experience, depending on final alignment of bypasses/ upgraded sections Potential local benefits to visual amenity for bypassed population centres from reduced traffic volumes/ congestion Potential adverse visual impacts on sensitive receptors local to some parts of the upgrades 	<ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest, GCR = Geological Conservation Review site

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SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	5. Dual Carriageway Bypasses and Dualling of Heavily Trafficked Sections of the A96 plus Targeted Trunk Road Improvements		
Description	Dual carriageway bypasses of Forres, Elgin and Inverurie and dualling of heavily trafficked sections of the A96. Single carriageway bypass of Keith. Targeted Trunk Road Improvements (Option 3) for the remaining sections of the A96.		
Assumptions	<ul style="list-style-type: none"> Dual carriageway on the most heavily trafficked sections Dual carriageway bypasses around Forres, Elgin and Inverurie. Single carriageway bypass around Keith (assume avoidance of most severe effects on constraints, designations and communities) On remainder of the route as Option 3 		
SEA Summary (to inform STAG 'environment' criterion assessment for this Option)	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Population and Human Health</p> <ul style="list-style-type: none"> Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS <p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections </td> <td style="width: 50%; vertical-align: top;"> <p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures </td> </tr> </table>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS <p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections 	<p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures
<p>Population and Human Health</p> <ul style="list-style-type: none"> Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS <p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections 	<p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures 		

Table F6

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	6. A96 Full Dualling plus Targeted Trunk Road Improvements		
Description	Provide full dual carriageway between east of Nairn and Aberdeen (i.e. Inverness to Nairn including Nairn Bypass included in the do-minimum).		
Assumptions	<ul style="list-style-type: none"> A combination of on-line and off-line works allowing for avoidance of most severe effects on constraints, designations and communities Grade separated junctions, at least one per major settlement Dual carriageway bypasses around Forres, Elgin, Keith, Huntly and Inverurie 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Population & Human Health	<ul style="list-style-type: none"> Population within the SEA study area is expected to increase by at least the national average rate (0.4% per annum) between 2010 and 2035 and these increases are likely to lead to increased traffic volume along the A96 trunk road There is currently one AQMA at the southern extent of the study area (in Aberdeen city) designated for NO₂ and PM₁₀ which may benefit slightly from Haudagain Roundabout improvements and air quality in the SEA study area may become an issue in line with increased traffic volume and congestion, e.g. in Inverurie Committed transport schemes and infrastructure improvements may improve emissions within population centres (e.g. in Nairn) by diverting traffic and improving traffic flows Long term change in vehicle engine types could provide minor benefits in terms of reduced vehicle emissions Increasing congestion on the approaches to, and through, key settlements along the A96 and on approaches to the cities expected to lead to driver frustration Inadequate overtaking opportunities between east of Nairn and Inverurie will remain an issue in some locations In the absence of specific improvement schemes, higher than national average accident rates for the road type around areas such as Keith and Huntly, are likely to persist Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years 	<ul style="list-style-type: none"> Moderate benefits predicted through reduced journey times and improved connectivity as a result of improvements throughout the route, with associated benefits for businesses that rely on transportation via the A96 Improved operational efficiency and provision of overtaking opportunities likely to reduce driver stress and provide major local benefits in terms of reduced accident rates and severity at current accident hotspots Moderate to major local benefits in terms of reduced congestion through bypassed population centres and along the dualled route Moderate local benefits in terms of reduced noise and emissions through bypassed population centres, with indirect human health benefits Moderate local adverse effects for properties/ residents close to new dualled sections, currently unaffected by A96 issues Improvements to traffic flow and journey times is predicted to result in increased traffic flows on the A96 trunk road, potentially reducing the attractiveness of public transport However, reductions in bus journey times along the trunk road may improve the attractiveness of bus services 	<ul style="list-style-type: none"> Major benefits at the local scale where dualling addresses current accident hotspots and improves road safety Moderate benefits at the regional scale in terms of reduced journey times and improved connectivity Moderate to major benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are a wide range of Ramsar, SAC, SPA and SSSI sites within the SEA study area boundary, the number of which could increase (e.g. new designations being proposed) Current condition status trends of qualifying features and pressures on designated sites are likely to continue; however, future population growth and settlement expansion/ development within the SEA study area may introduce additional pressures Pressures on species within the study area include habitat loss/ fragmentation related to land use change, and mortality through vehicle collisions are likely to be exacerbated Existing A96 is likely to present a barrier to movement for some species, upgrading the Inverness to Nairn (including Nairn bypass) section may provide improved permeability via mammal passes/ pedestrian subways/ bridges; however this will not present route-wide benefits and barrier issues will persist in some locations Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards; however, this is not the case across the entire route and road surface runoff will continue to present localised impacts on water quality around outfall locations, with subsequent issues for local biodiversity Some modal shift may occur as a result of rail improvements; however, traffic demand modelling for the corridor indicates that there will be an overall growth in traffic in future years with potential for secondary impacts on roadside vegetation, species movement and road surface runoff 	<ul style="list-style-type: none"> Wide range of designated biodiversity conservation sites which could potentially be affected by upgrades/ bypasses, these include: <ul style="list-style-type: none"> SSSIs around Forres (SW), Elgin (N and W), Lhanbryde (E) and Keith (S) SPAs around Forres (SW) and Elgin (N) River Spey SAC and SSSI between Mosstodloch and Fochabers Mortlach Moss SAC and SSSI between Keith and Huntly Unlikely to significantly impact designated biodiversity sites, given requirements for HRA (Natura) and route alignment selection processes (SSSI) – assume, as worst case, locally minor to major impacts should particular sites prove unavoidable Potential for local habitat impacts, including woodland fragmentation, as a result of land take for dualling/ bypasses, significance depends on final alignment selection – assume, as worst case, minor to moderate impacts at the regional level Road widening/ dualling could present increased barrier to species movement across the route – assume minor adverse at the regional level Improvements to operational efficiency and journey times predicted to increased use of the A96, potentially adversely affecting roadside vegetation, mobile species (through vehicle collision) and road surface runoff quality Dualling not anticipated to increase species/ vehicle collisions to a level that would significantly affect regional species populations Improvements at targeted trunk road locations will incorporate current design standards, including provisions for mammal passes, compensatory habitat creation and SuDS resulting in local benefits – assume minor benefits at the regional level 	<ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS
Water	<ul style="list-style-type: none"> The quality of principal watercourses within the SEA study area (generally good to excellent) is likely to be maintained via non-transport related initiatives and measures to comply with the EU Water Framework Directive There are a number of coastal, fluvial and wetland Natura and Ramsar sites within the SEA study area, the number and size of which may change in the future Although there are a number of Local Authority flood prevention schemes within the vicinity of the existing Inverness to Aberdeen corridor, large areas are predicted to remain prone to significant fluvial and coastal flooding Climate change anticipated to increase frequency of extreme weather events, including rainfall, which would be likely to increase frequency and severity of local flooding events Upgraded sections of the A96 route will include drainage provisions (including SuDS) to current design standards, with subsequent benefits for surface runoff/ discharge quality and some enhanced capacity for flood attenuation; however, this is not the case across the entire route and current conditions will persist on some parts of the non-upgraded sections Continued growth in traffic volume predicted on the A96 in future years is likely to exacerbate surface runoff/ discharge quality issues Long term change in vehicle engine types could provide minor benefit in terms of vehicle emissions/ surface runoff (assume minimal change as electric vehicles still require oil/ lubricants) 	<ul style="list-style-type: none"> Potential for minor localised impacts on designated watercourses (e.g. River Spey) and coastal Natura sites depending on final alignments (including new river crossings) Dualling will incorporate current design standards, including SuDS – minor localised benefits to surface water discharge quality – assume minor benefit at regional level Potential for habitat effects on wetland sites within the SEA study area, depending on final route alignment – assume minor adverse effect at the regional level Potential for locally minor adverse effects associated with channel/ bankside works for crossings/ culverts in new locations – highly dependent on final route alignment – assume minimal impact at the regional level Areas of flood risk at various points along the route, including significant areas around Forres and Elgin No significant change to flood risk due to full dualling anticipated – flood risk zones to inform final route alignment – assume neutral effect 	<ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final route alignment

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario			
STAG Option	6. A96 Full Dualling plus Targeted Trunk Road Improvements		
Description	Provide full dual carriageway between east of Nairn and Aberdeen (i.e. Inverness to Nairn including Nairn Bypass included in the do-minimum).		
Assumptions	<ul style="list-style-type: none"> A combination of on-line and off-line works allowing for avoidance of most severe effects on constraints, designations and communities Grade separated junctions, at least one per major settlement Dual carriageway bypasses around Forres, Elgin, Keith, Huntly and Inverurie 		
SEA Assessment	Do Minimum Baseline Summary	SEA Commentary on STAG Intervention Option	SEA Assessment vs Do Minimum
Soils & Geology	<ul style="list-style-type: none"> There are a range of geodiversity sites (SSSI and Geological Conservation Review sites) within the SEA study area, the number of which could change in the future Development proposals in the SEA study area (transport and other land uses) have the potential to affect designated areas and to reduce the available area of productive agricultural land or peat reserves Potential for minor adverse effects likely on roadside soils/ soil biodiversity associated with surface runoff, vehicle emissions and salt spray, exacerbated by growth in traffic volume 	<ul style="list-style-type: none"> There are a number of geodiversity sites within the SEA study area, including to the north of Forres, Elgin and Huntly – potential for avoidance or adverse effects is dependent on final route alignment Large expanses of peaty soils within the SEA study area, including between Fochabers and Keith/ Huntly – potential for avoidance or adverse effects is dependent on final route alignment Large areas of productive agricultural land within the SEA study area, including around Elgin, Forres and Inverurie – scale of impact is dependent on final route alignment Improvements to traffic flow and journey times are predicted to increased use of the A96 trunk road, potentially impacting roadside soils Potential benefits to roadside soil quality on de-trunked sections of the route 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on the final route alignment Overall, assessed as likely to present minor adverse effects at the regional level
Historic Environment	<ul style="list-style-type: none"> There are a wide range of designated and non-designated historic environment sites/ features within the SEA study area, the number of which could change in the future, for example Inverurie and Kintore have been identified as potential future Conservation Areas Committed transport infrastructure schemes in the Do Minimum may have some effects on buried and upstanding archaeology, and other built heritage features, depending on the final alignments and locations of the proposals General development proposals (e.g. housing) have the potential to affect and/ or to allow for interpretation of historic environment sites, including as yet unidentified buried archaeology It is predicted that there will be a general continuation of existing traffic related effects on local historic environment features, e.g. effects of vehicle emissions on buildings/ monuments in urban areas/ close to the roadside, potentially exacerbated by increases in traffic volume associated with predicted population growth 	<ul style="list-style-type: none"> Wide range of historic environment features in the SEA study area potentially affected by dualling, these include: <ul style="list-style-type: none"> SM – Forres (E,S,W), Elgin (mainly N), Huntly (N), Inverurie (N,S,E,W), surrounding the A96 in area from Skares to Kintore GDL – Forres (E,S,W), Elgin (N), Fochabers (N), two in stretch from Skares to Westhall, Inverurie (E) Battlefields – Inverurie (Harlaw, NW) LB – clusters around population centres, and spread through the SEA study area CA – Forres, Elgin, Fochabers, Keith Potential for direct (e.g. losses, major adverse) and/ or indirect (e.g. setting, minor to moderate adverse) impacts, depending on final route alignment Unlikely to significantly adversely affect heritage assets, given the assumption that improvement works will avoid the most severe effects on constraints and designations – improvement locations to be informed by historic environment constraint boundaries Potential for minor benefits to buildings/ monuments and Conservation Areas within bypassed population centres as a result of reduced vehicle emissions 	<ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on the final route alignment Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level
Landscape	<ul style="list-style-type: none"> There are no national landscape designations within the SEA study area The area around Strathspey has been identified in local Morayshire reports as an Area of Great Landscape Value, none of the Do Minimum A96 route or Aberdeen to Inverness rail enhancements are expected to affect this area The SNH broad landscape character assessment dataset describes the predominant landscape types within the study area as Lowland Coastal Landscapes of the North East to Agricultural Lowlands of the North East, with smaller areas of Highland Strath and Rolling Mountains/ Transitional Moorland in between Do Minimum schemes are likely to present varying degrees of visual impact within the range of Landscape Character types, depending on the scale of the scheme and sensitivity of the relevant landscape and distribution of visual receptors; however, none are considered a scale sufficient to present significant adverse effects on local landscape character It is likely that there will be some incremental changes in the surrounding landscape over time as a result of proposed developments around towns and settlements and renewable energy (e.g. wind) developments 	<ul style="list-style-type: none"> Direct impacts on landscape (including locally designated landscapes) will depend on the final route alignment and the relative sensitivity of the receiving landscape Areas around 'Highland Straths' (e.g. Speyside and Strath Bogie) from Mosstodloch to Skares potentially more sensitive to dualling than more open arable agricultural areas Potential for improved 'view from the road', and enhanced travellers' experience, depending on final route alignment Potential local benefits to visual amenity for bypassed population centres from reduced traffic volumes/ congestion Potential adverse visual impacts on sensitive receptors local to some parts of the upgraded route 	<ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, full dualling is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to upgraded route Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures

Note:

SAC = Special Area of Conservation, SPA = Special Protection Area, SSSI – Site of Special Scientific Interest, GCR = Geological Conservation Review site

SM = Scheduled Monuments, GDL = Gardens and Designed Landscapes, LB= Listed Buildings, CA = Conservation Areas

SEA Assessment of STAG Intervention Options vs 'Do Minimum' Scenario	
STAG Option	6. A96 Full Dualling plus Targeted Trunk Road Improvements
Description	Provide full dual carriageway between east of Nairn and Aberdeen (i.e. Inverness to Nairn including Nairn Bypass included in the do-minimum).
Assumptions	<ul style="list-style-type: none"> • A combination of on-line and off-line works allowing for avoidance of most severe effects on constraints, designations and communities • Grade separated junctions, at least one per major settlement • Dual carriageway bypasses around Forres, Elgin, Keith, Huntly and Inverurie
SEA Summary (to inform STAG 'environment' criterion assessment for this Option)	<p>Population and Human Health</p> <ul style="list-style-type: none"> • Major benefits at the local scale where dualling addresses current accident hotspots and improves road safety • Moderate benefits at the regional scale in terms of reduced journey times and improved connectivity • Moderate to major benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety • Locally moderate indirect benefits to human health in bypassed population centres • Mixed effects on businesses depending on use/ reliance on the A96 • Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues <p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> • Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale • Highly dependent on final route selection and avoidance of valuable/ sensitive/ designated biodiversity sites • Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable • Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS <p>Water</p> <ul style="list-style-type: none"> • Minor benefits to surface water runoff discharge quality at local and regional scales • Neutral effect on flooding and flood risk at the regional scale • Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts • Potential for minor adverse effects on wetland habitats at the regional level • Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final route alignment <p>Soils & Geology</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on the final route alignment • Overall, assessed as likely to present minor adverse effects at the regional level <p>Historic Environment</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on the final route alignment • Some potential for locally minor benefits in bypassed areas • Overall, assessed as likely to present minor to moderate adverse effects at the regional level <p>Landscape</p> <ul style="list-style-type: none"> • Given that the A96 is already a feature in the landscape, full dualling is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale • Minor benefits at the local scale for bypassed receptors • Moderate to major adverse visual effects for some sensitive receptors local to upgraded route • Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures

Table F7

Option	SEA Summary of Potential Impacts	Overall Impact Range for STAG AST
<p>1. Rail enhancements/rolling stock improvements to provide an end-to-end travel time of around 1hr 45mins</p>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor beneficial effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised and type of rolling stock favoured Overall, minor positive effects for population and human health at the regional scale 	<p>Neutral to minor positive effects at the regional scale associated with modal shift and reduced emissions through population centres Potential for increased benefit with electrified rolling stock</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale with potential for minor adverse effects in some localised areas 	<p>Predominantly neutral, but with some potential for locally minor adverse effects depending on the location and scale of enhancement works</p>
	<p>Water</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale 	<p>Predominantly neutral</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level 	<p>Predominantly neutral</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale Potential for minor adverse localised effects on setting of historic environment features 	<p>Predominantly neutral, but with some potential for locally minor adverse effects depending on the location and scale of enhancement works</p>
	<p>Landscape</p> <ul style="list-style-type: none"> Assessed as neutral to minor adverse at the regional landscape scale Neutral effects for visual receptors at local levels from marginally reduced trunk road traffic Potential for minor adverse effects for visual receptors at local levels 	<p>Predominantly neutral, but with potential for minor adverse effects depending on the location and scale of enhancement works</p>
<p>2. Rail service enhancements to allow a 15 minute frequency into both cities during peak periods with a 30 minute frequency for services into both cities outside of peak</p>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Neutral to minor, regional benefits for population and health in terms of opportunity for modal shift Neutral to minor, local benefits include reduced emissions through population centres, within commutable distance, associated with modal shift/ reduced peak hour congestion Neutral to minor adverse effects on overall emissions within the SEA study area, depending on uptake/ modal shift realised Minor, locally adverse effects to noise sensitive receptors around the rail corridor associated with increased service frequency Overall, a combination of minor positive and minor adverse (mixed) effects for population and human health at the regional scale 	<p>Minor positive effects at the regional scale associated with modal shift and reduced emissions through population centres Minor adverse effects at local levels for sensitive noise receptors</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale 	<p>Predominantly neutral</p>
	<p>Water</p> <ul style="list-style-type: none"> Assessed as predominantly neutral, but with potential for minor adverse impact on track drainage runoff, at the local scale 	<p>Predominantly neutral, but with some potential for minor adverse effects on runoff water quality at the local scale</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> Assessed as predominantly neutral at the regional scale Areas better serviced by rail may become more attractive for development, with potential for minor indirect adverse effects on soil resources (soil sealing) at the local level 	<p>Predominantly neutral</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> Assessed as neutral at the regional scale 	<p>Predominantly neutral</p>
	<p>Landscape</p> <ul style="list-style-type: none"> Assessed as neutral at the regional landscape scale Potential for mixed (minor positive to minor adverse) effects for visual receptors at local levels 	<p>Predominantly neutral, but with some potential for mixed effects for visual receptors at local levels</p>
<p>3. Targeted Trunk Road Improvements</p>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Minor benefits at the local scale where improved sections address operational issues and improve road safety Potential for locally adverse effects for road users in relation to new transition zones where there are changes in carriageway standard Neutral to minor benefits at the regional scale in terms of reduced accident rate and journey times 	<p>Neutral to minor benefits at the regional scale in terms of reduced accident rates and journey times Mixed effects at the local scale associated with road safety at targeted locations and transition zones</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Assessed as minor adverse at the regional scale Severity of adverse effects will depend on design, location and scale of improvement works 	<p>Minor adverse effects at the regional scale dependent upon design, location and scale of improvement works</p>
	<p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for neutral to minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of widened or realigned sections 	<p>Mixed effects ranging from minor positive at the regional scale to moderate negative at the local scale, depending on final locations of improvements</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts on soil resources, depending on final locations Overall, assessed as likely to present minor adverse effects at the regional level 	<p>Minor adverse effects at the regional level depending upon final locations of improvements</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final locations Overall, assessed as likely to present minor to moderate adverse effects at the regional level 	<p>Minor to moderate adverse effects at the regional level due to the wide range of historic environment features in the area</p>
	<p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, the option to provide targeted trunk road improvements is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor to major adverse effects for sensitive visual receptors local to some areas of improvement locations Overall, minor to moderate adverse landscape and visual effects at the regional level, softening over the longer term as mitigation planting matures 	<p>Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures Minor to major adverse effects for sensitive visual receptors at the local scale</p>

Option	SEA Summary of Potential Impacts	Overall Impact Range for STAG AST
<p>4. Targeted Trunk Road Improvements and New (Single Carriageway) Bypasses on A96</p>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity Minor to moderate benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard 	<p>Minor benefits at the regional scale in terms of reduced accident rate, journey times and improved connectivity Some potential for moderate beneficial effects at the local scale in bypassed population centres Potential for locally adverse impacts on some isolated properties/ residents affected by new bypasses, that are not currently affected by A96 issues Potential for locally adverse impacts associated with transitions between carriageway standards</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS 	<p>Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Potential for locally minor to major adverse impacts, dependent on final route selection</p>
	<p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of bypass sections/ improvement works 	<p>Mixed effects ranging from minor positive at the regional scale to moderate negative at the local scale, depending on final locations of bypass sections/ improvement works</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level 	<p>Minor adverse effects at the regional level, due to soil sealing associated with this option, depending upon final alignments/ improvement locations</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement locations Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level 	<p>Minor to moderate adverse effects at the regional level due to the wide range of historic environment features in the area Some potential for minor beneficial effects at the local scale in bypassed centres</p>
	<p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass locations/ improvement works Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures 	<p>Minor to moderate adverse effects at the regional landscape scale, softening over the longer term as mitigation planting matures Mixed effects for sensitive visual receptors at the local scale</p>
<p>5. Dual Carriageway Bypasses and Dualling of Heavily Trafficked Sections of the A96 plus Targeted Trunk Road Improvements</p>	<p>Population and Human Health</p> <ul style="list-style-type: none"> Moderate to major benefits at the local scale where improved sections address operational issues and improve road safety Moderate benefits at the regional scale in terms of improved operational efficiency, connectivity and safety Moderate benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety Locally minor to moderate indirect benefits to human health in bypassed population centres Mixed effects on businesses depending on use/ reliance on the A96 Potential for locally moderate adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse effects in relation to new transition zones between carriageway standard 	<p>Moderate positive effects at the regional scale in terms of improved operational efficiency, connectivity and safety, and at the local scale in terms of reduced emissions through population centres Potential for locally adverse impacts on some isolated properties/ residents affected by this option that are not currently affected by A96 issues Potential for locally adverse impacts associated with transitions between carriageway standards</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale Highly dependent on final route selection/ location of improvement works and avoidance of valuable/ sensitive/ designated biodiversity sites Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS 	<p>Mixed impacts, ranging from minor positive to moderate adverse at the regional scale Potential for locally minor to major adverse impacts depending on final location of bypasses/ upgrades</p>
	<p>Water</p> <ul style="list-style-type: none"> Minor benefits to surface water runoff discharge quality at local and regional scales Neutral effect on flooding and flood risk at the regional scale Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts Potential for minor adverse effects on wetland habitats at the regional level Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final locations of improved/ bypass sections 	<p>Mixed impacts ranging from minor positive at the regional scale to minor negative at the local scale, depending on final location of bypasses/ upgrades</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on final alignments/ improvement locations Overall, assessed as likely to present minor adverse effects at the regional level 	<p>Minor adverse effects at the regional level due to soil sealing associated with this option</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> Given the assumption that the most severe effects on constraints and designations will be avoided, this option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on final alignments/ improvement works Some potential for locally minor benefits in bypassed areas Overall, assessed as likely to present minor to moderate adverse effects at the regional level 	<p>Minor to moderate adverse effects at the regional level (recognising potential for major adverse effects if losses are unavoidable at the local level) due to the wide range of historic environment features in the area Some potential for minor beneficial effects at the local scale in bypassed centres</p>
	<p>Landscape</p> <ul style="list-style-type: none"> Given that the A96 is already a feature in the landscape, this option is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale Minor benefits at the local scale for bypassed receptors Moderate to major adverse visual effects for some sensitive receptors local to bypass/ improvement locations Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures 	<p>Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures Mixed effects for sensitive visual receptors at the local scale</p>

Option	SEA Summary of Potential Impacts	Overall Impact Range for STAG AST
6. A96 Full Dualling plus Targeted Trunk Road Improvements	<p>Population and Human Health</p> <ul style="list-style-type: none"> • Major benefits at the local scale where dualling addresses current accident hotspots and improves road safety • Moderate benefits at the regional scale in terms of reduced journey times and improved connectivity • Moderate to major benefits at the local scale for bypassed population centres, in terms of reduced congestion, emissions and noise and improved road safety • Locally moderate indirect benefits to human health in bypassed population centres • Mixed effects on businesses depending on use/ reliance on the A96 • Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues 	<p>Major positive effects at the regional and local scales in terms of improved safety, journey times and connectivity and reduced emissions through population centre</p> <p>Potential for locally adverse impacts on some isolated properties/ residents affected by full dualling that are not currently affected by A96 issues</p>
	<p>Biodiversity, Flora and Fauna</p> <ul style="list-style-type: none"> • Mixed impacts, ranging from minor positive to moderate adverse predicted at the regional scale • Highly dependent on final route selection and avoidance of valuable/ sensitive/ designated biodiversity sites • Potential for locally minor to major adverse impacts should sensitive sites/ features/ habitats prove unavoidable • Neutral effect on mobile species, recognising potential barrier to movement, but with improved route permeability through passes, crossings and SuDS 	<p>Mixed impacts, ranging from minor positive to moderate adverse at the regional scale</p> <p>Potential for locally minor to major adverse impacts depending on final route alignment</p>
	<p>Water</p> <ul style="list-style-type: none"> • Minor benefits to surface water runoff discharge quality at local and regional scales • Neutral effect on flooding and flood risk at the regional scale • Locally minor to moderate adverse effects associated with channel/ bankside works for crossings and culverts • Potential for minor adverse effects on wetland habitats at the regional level • Overall, mixed effects ranging from minor positive (e.g. discharge quality) to minor negative, depending on final route alignment 	<p>Mixed impacts ranging from minor positive (e.g. improved drainage and discharge quality) at the regional scale to moderate negative (e.g. construction risks to watercourses) at the local scale, depending on final route alignment</p>
	<p>Soils & Geology</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to moderate adverse impacts on soil resources, depending on the final route alignment • Overall, assessed as likely to present minor adverse effects at the regional level 	<p>Minor adverse effects at the regional level due to soil sealing associated with full dualling</p>
	<p>Historic Environment</p> <ul style="list-style-type: none"> • Given the assumption that the most severe effects on constraints and designations will be avoided, the full dualling option is assessed with the potential for locally minor to major adverse impacts (direct and on setting) on historic environment features, depending on the final route alignment • Some potential for locally minor benefits in bypassed areas • Overall, assessed as likely to present minor to moderate adverse effects at the regional level 	<p>Minor to moderate adverse effects at the regional level (recognising potential for major adverse effects if losses are unavoidable at the local level) due to the wide range of historic environment features in the area</p> <p>Some potential for minor beneficial effects at the local scale in bypassed centres</p>
	<p>Landscape</p> <ul style="list-style-type: none"> • Given that the A96 is already a feature in the landscape, full dualling is assessed as having the potential for locally minor to moderate adverse impacts at the landscape character type scale • Minor benefits at the local scale for bypassed receptors • Moderate to major adverse visual effects for some sensitive receptors local to upgraded route • Overall, minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures 	<p>Minor to moderate adverse effects at the regional level, softening over the longer term as mitigation planting matures</p> <p>Mixed effects for sensitive visual receptors at the local scale</p>



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