

Strategic Transport Projects Review (STPR2) Consultancy Support Services Contract



STRATEGIC TRANSPORT PROJECTS REVIEW

PROTECTING OUR CLIMATE
AND IMPROVING LIVES



SEA Environmental Report: Assessment Matrices

December 2022

Jacobs **AECOM**

Summary of Approach

Appendix F presents the full assessment matrices used in the SEA. Please note, many of the transport interventions assessed in this appendix have now been dropped from STPR2 during its development and refinement, or the wording has been updated in the final 45 STPR2 recommendations. The interventions that were dropped, and the reasons for doing so, are provided in Appendix G of the STPR2 final Technical Report (Jacobs Aecom 2022f – full references are provided in the main Environmental Report).

The assessments in this appendix were undertaken for alternative mode-based groupings (defined in the glossary of the main Environmental Report) of transport interventions, assessed against alternative appraisal scenarios. The mode-based groupings were assessed throughout 2021, before the development of the 45 recommendations in the STPR2 final Technical Report (Jacobs Aecom, 2022f). Summary descriptions of each mode-based grouping are provided throughout this appendix, followed by an assessment of that grouping. Further detail on the groupings, including details on how the content of them has changed during the STPR2 development process, is provided in Appendix G of the STPR2 final Technical Report (Jacobs Aecom 2022f).

The mode-based grouping assessments were based on two Transport Behaviour Scenarios:

- High Transport Behaviour - capturing ‘without policy ambitions’ leading to High levels of motorised traffic demand/emissions (referred to as Scenario 1); and,
- Low Transport Behaviour – capturing ‘with policy ambitions’ leading to Low levels of motorised traffic demand/emissions (referred to as Scenario 2).

For most of the groupings assessed, the significance of effects was considered to be the same for Scenario 1 and Scenario 2; however, the magnitude of effects was considered to be less for Scenario 2 than for Scenario 1 for most groupings.

The Transport Behaviour Scenarios contain elements of travel behaviour change that have been accelerated by the COVID-19 crisis, for example increased working from home. The two scenarios broadly capture ‘high growth sensitivity with no policy ambition on car kilometres’ (henceforth referred to as ‘high’) and ‘low growth sensitivity with a 20 per cent reduction policy ambition on car kilometres’ (henceforth referred to as ‘low’) levels of motorised traffic demand. Further detail on these Transport Behaviour Scenarios is provided in the STPR2 final Technical Report (Jacobs Aecom, 2022f).

At the end of the appendix is an assessment of the 45 recommendations that are included in the STPR2 final Technical Report (Jacobs Aecom 2022f).

The assessment results from this appendix are summarised in Chapter 8 (Assessment Results) of the main Environmental Report.

SEA Objectives and Assessment Guide Questions

The SEA matrix-based assessments have been carried out using a set of SEA objectives and assessment guide questions. These form the assessment framework which has been used to determine the likely significant effects of STPR2. The assessment has used a 7-point scoring system to align with STAG criteria and SEA requirements. Further detail on the SEA methodology is provided in Chapter 7 of the main Environmental Report.

The table below provides an overview of the SEA objectives and guide questions used to determine the likely significant environmental effects of STPR2.

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
Climatic Factors	(1) Reduce emissions from Scotland’s transport sector by reducing the need to travel and encouraging modal shift and help meet Scotland’s wider targets to reduce greenhouse gas emissions.	<p>Contribute to achievement of Scotland CO₂ emissions reduction target of net zero by 2045?</p> <p>Commit to a monitoring programme for reviewing international low carbon best practice and emerging technologies?</p> <p>Promote and support the best use of clean fuels/technologies (e.g. strategic planning of EV charging points or hydrogen refuelling considerations)?</p> <p>Promote and facilitate reduction of car kilometres and modal shift to more sustainable transport options?</p> <p>Promote behavioural change within workplaces, including car sharing, flexible work patterns and supporting opportunities for home working?</p> <p>Facilitate ongoing co-ordination with spatial development planners to ensure communities are close to key services and places of employment, to the maximum extent possible?</p>
	(2) Adapt the transport network to the predicted effects of climate change.	<p>Help adapt the transport network to direct and indirect risks associated with climate change projections for Scotland?</p> <p>Prioritise adaptation of transport infrastructure in locations that are more vulnerable to the projected impacts of climate change, including coastal and isolated locations?</p> <p>Prioritise adaptation of transport connections to critical infrastructure, including transport interchanges, hospitals, power, fuel supply and ICT Infrastructure?</p> <p>Maintain or improve access to and within disadvantaged areas or isolated communities at risk from climate change impacts e.g. flooding, slope instability?</p>

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
Air Quality	(3) Reduce all forms of transport-related air pollution and improve air quality throughout Scotland.	Encourage and facilitate the use of active travel, particularly for short journeys? Help to reduce traffic congestion? Limit the more polluting vehicles in sensitive areas e.g. AQMAs? Improve or at least maintain air quality in disadvantaged areas? Help to limit polluting traffic growth? Reduce emissions of key air pollutants (NO _x , particulates, SO ₂) from all forms of transport, but focusing on the most polluting vehicles and areas of known poor air quality e.g. diesel emissions in urban areas? Promote green infrastructure at all spatial scales, to help remove pollutants from the air?

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
Population and Human Health	(4) Improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment.	Encourage sustainable access to the natural and historic environment? Reduce and avoid community severance or other detriment to existing active travel routes, including maintaining or improving pedestrian crossings? Ensure safe and sustainable access for all users to essential services and employment? Increase and enhance provision of non-motorised transport, especially walking and cycling links and facilities? Promote linking up existing or planned new communities through the active travel network? Plan for future capacity of active travel network, taking into account demographic or other changes? Provide increasing transport choice that meet the needs of the population? Allow for greater journey time reliability? Support changing demographics by providing appropriate transport facilities to meet their needs? Improve accessibility to open spaces and the path network for physical recreational purposes? Improve access to healthcare facilities?
	(5) Reduce noise and vibration associated with the transport network.	Reduce noise and vibration on the transport network particularly at sensitive locations?

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
	(6) Promote, invest in, build and maintain infrastructure to support the development of high-quality places.	<p>Support the development of places that feel safe to all users?</p> <p>Prioritise pedestrians in the public realm?</p> <p>Support the creation and maintenance of an attractive public realm, with a focus on the contribution of transport infrastructure?</p>
	(7) Improve safety on the transport network.	<p>Reduce the likelihood of transport-related road accidents and casualties?</p>
Material Assets	(8) Promote and improve the sustainable use of the transport network.	<p>Support improvements to transport technology, interchanges and timetabling?</p> <p>Plan for future travel arrangements where journeys are made by a number of different modes (e.g. electric vehicle for most of the journey, which is then parked and left to charge at a hub, cycle and walking assets, such as connected off-road paths, bike/e-bike share infrastructure)?</p> <p>Plan for future capacity of public transport, taking demographic and other societal changes into account?</p> <p>Promote sustainable use and management of existing infrastructure e.g. water, heat, energy or flood protection infrastructure?</p>
	(9) Reduce use of natural resources.	<p>Ensure transport infrastructure and innovation delivers/contributes to the circular economy?</p>

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
Water Environment	(10) Protect, maintain and improve the quality of water bodies and wetlands that could be directly or indirectly affected by transport infrastructure (with respect to Water Framework Directive targets) and protect against the risk of flooding.	<p>Support and enhance the network of blue and green infrastructure?</p> <p>Ensure transport network resilience to climate change and flood risk?</p> <p>Constrain any water bodies from achievement of Good Ecological Status/Good Ecological Potential under the Water Framework Directive (WFD)?</p> <p>Increase the risk of diffuse pollution from current or increasing traffic volumes?</p> <p>Improve the quality of surface water draining from the transport network (e.g. reducing salt spreading in winter, expanded or improved Sustainable Drainage System network)?</p> <p>Increase development that physically impacts on a waterbody, watercourse or the coastline?</p> <p>Promote removal of artificial transport-related structures in water bodies (e.g. bridge piers, concrete slipways)?</p> <p>Promote natural flood management techniques?</p>
Biodiversity	(11) Protect, maintain and enhance biodiversity and ecosystem services, avoiding damage to or loss of designated and undesignated wildlife or geological sites.	<p>Protect and/ or enhance the integrity of any site of biodiversity or geological value that has been designated at international, national or local levels (e.g. land take, fragmentation or indirect degradation)?</p> <p>Protect and or enhance the integrity of existing habitat and green/blue networks and other wildlife corridors (including the ecological connections between separate Natura 2000 sites and 'landscape-scale' corridors)?</p> <p>Maintain or upgrade transport network to remove barriers to wildlife movement?</p> <p>Reduce the risk of spreading invasive non-native species?</p> <p>Provide opportunities to provide positive effects for biodiversity e.g. habitat creation or enhancement?</p> <p>Align with the strategic goals of the Aichi Biodiversity Targets and 2020 outcomes for Scotland?</p>

SEA TOPIC	SEA OBJECTIVE AND NUMBER	SEA ASSESSMENT GUIDE QUESTIONS DOES THE STPR2 OPTION...?
Soil	(12) Safeguard and improve soil quality in Scotland, particularly high value agricultural land and carbon-rich soil.	<p>Avoid and minimise disturbance of rare soils, high-carbon (including peat) and wetland soils and productive agricultural land?</p> <p>Avoid indirect impacts on off-site peat and wetland soils to maintain natural processes of hydrological and ecological regimes?</p> <p>Avoid or minimise land take of greenfield sites?</p> <p>Reduce risk of soil sealing, contamination or erosion on a significant scale?</p>
Cultural Heritage	(13) Protect and enhance (where appropriate) historic and archaeological sites and other culturally and historically important features, landscapes and their settings.	<p>Avoid significant effects (direct or indirect) on designated or undesignated archaeological sites, as well as other culturally and historically important features, including Conservation Areas, inventory sites for Battlefields and Gardens and Designed Landscapes?</p> <p>Protect key views to and from heritage assets?</p> <p>Improve access to the historic environment?</p>
Landscape and Visual Amenity	(14) Safeguard and enhance the character and diversity of the Scottish landscape and areas of valuable landscape.	<p>Align with the four key aims of Transport Scotland’s ‘Fitting Landscapes’ policy (1. Ensure high quality of design and place; 2. Enhance and protect natural heritage; 3. Use resources wisely; 4. Build in adaptability to change)?</p> <p>Avoid significant effects (direct or indirect) on National, Regional and Local Landscape designations and mitigate where appropriate?</p> <p>Protect wild land areas?</p>

Assessment of Modes

Active Travel (AA) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
AA1	Options to improve access to bikes (conventional and e-bikes) and equipment such as charging facilities, lights, locks and helmets through bike libraries and other initiatives.
AA2	Active Travel Hubs: This grouping would create more Active Travel Hubs across Scotland, delivered through a 'hub and spoke' network. The services offered would vary according to local circumstances, but typically could include maps, information and route planning advice; led walks and cycle rides (including those targeted towards specific groups, e.g., women, families, etc); cycle skills and confidence training, buddying schemes; Bike maintenance and repair; bike / equipment loan schemes / low-cost bike purchase; and community education, events and outreach activities.
AA9	Connected Neighbourhoods: Options to make urban and suburban neighbourhoods in Scotland's cities and towns more conducive for active travel by improving conditions for walking, wheeling and cycling and reducing traffic dominance
AA10	Reducing Trunk Road Severance: Provision of active travel and related interventions to reduce barriers within and between communities severed by trunk roads.
AA11	Public Cycle Hire Schemes: This grouping would support a network of integrated public cycle hire schemes for short-term use in cities and other large urban areas across Scotland. Interventions in all areas would support the provision of a range of cycle types, including e-bikes and accessible cycles such as trikes.
AA13	Increasing Active Travel to School: Specific interventions would vary across schools but expected to include Reallocation of road space; Improved surfacing and lighting of foot and cycle ways; improved road crossing points; Measures to reduce traffic volumes and/or speeds; 'School Streets' (where appropriate); Campaigns to promote better driver behaviour.
AA16	Active Freeways: Options to provide high quality, segregated active travel routes on major distributor routes in Scotland's towns and cities, with connections to major trip attractors
AA19	Village – Town Active Travel Connections: Options to provide active travel routes from villages to a nearby town or regional centre.

AA23	Long-distance active travel network: High-quality segregated long-distance routes for people walking, wheeling and cycling across Scotland; including improvements to the existing NCN and creating new links where necessary.
AA24	Connecting Scotland's Towns: Options to provide better (including safer) active travel connections for those vulnerable to social exclusion and transport poverty, such as those without access to a car.
AA25	Cycle Parking Hubs: Provision of large-scale, high-quality, secure cycle storage facilities in city and town centres and at other major trip attractors.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
AA1	+	~	+	+	+	+	+	+	+	0	0	0	0	0	+
AA2	+	~	+	+	0	0		+	?	0	0	0	?	?	+
AA9	+	0	+	+	+	+	+	+	?	?	?	?	?	?	+
AA10	+	~	+	+	+	+	+	+	0	0	0	0	?	?	+
AA11	+	~	+	+	+	~	0	+	0	0	0	0	0	0	+

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
AA13	+	0	+	+	+	+	+	+	0	0	0	0	0	0	+
AA16	+	~	+	+	+	+	+	+	0	0	0	0	0	0	+
AA19	+	~	+	+	+	+	+	+	?	?	?	?	?	?	+
AA23	+	~	+	+	+	+	+	+	?	?	?	?	?	?	+
AA24	+	~	+	+	+	+	+	+	?	?	?	?	?	?	+

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
AA25	+	~	+	+	+	+	+	+	?	0	0	0	?	?	+
Cumulative Travel Mode Summary	+	~	+	+	+	+	+	+	?	0	0	0	?	?	+

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
AA1	This grouping would likely result in positive effects on the Climatic Factors and Air Quality SEA objectives due to promoting a modal shift to more sustainable active travel options for functional and recreational journeys and as a result a reduction in emissions and improvement in air quality. Positive effects anticipated on the Population and Human Health and Material Assets (SEA Objective 8) due to an expected increase in users choosing more

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
	<p>sustainable travel to essential services. Due to the modal shift to cycling, there will also be a slight reduction in wear and tear and need for maintenance of the road network, which will in turn reduce raw material requirements and help to progress the SEA objectives for Material Assets (SEA Objective 9). Cycle skills and confidence training combined with lower traffic levels are also likely to result in improved safety of people that were already cycling (or walking). However, any new people transferring from car may be exposed to increased risk. Studies have suggested that walking or cycling could realistically substitute for 41% of short car trips, saving nearly 5% of carbon emissions from car travel. But only 35% of Scottish households has access to one or more bikes, significantly limiting the potential for change.</p> <p>Neutral effects are anticipated for the remaining SEA objectives, including biodiversity, landscape, cultural heritage and soil and water as minimal hard infrastructure is required.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA9	<p>This grouping is likely to result in positive effects on SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions, reducing transport related noise and improving the quality of places. To increase improvements in Air Quality interventions could be focused in areas in or adjacent to AQMAs.</p> <p>The grouping would also have a positive effect on Material Assets (SEA Objective 8) and Population and Human Health as it seeks to expand the existing active travel network, providing more active travel options, safer routes and helping to reduce noise and vibration in urban and rural areas for a significant proportion of the population. 1.3M-1.9M people would live within the improved areas.</p> <p>Based on the evidence presented above up to 1.9 million There is an uncertain relationship between the proposed grouping and Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity SEA objectives, due to the impact of new routes. Further assessment should be undertaken to identify any impacts once the location of interventions is decided.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA10	<p>This grouping would likely result in positive effects on the Climatic Factors (SEA Objective 1) and Air Quality (SEA</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
	<p>Objective 3) due to promoting a modal shift to more sustainable active travel options and as a result a reduction in emissions and improvement in air quality. Positive effects anticipated on Population and Human Health and Material Assets (SEA Objective 8) due to an expected increase in users choosing more sustainable and safe routes to local amenities and a prioritisation of pedestrians in the public realm. Safer crossings also likely to result in a small net decrease in accidents.</p> <p>Further environmental assessment will be required as individual links are developed to determine local effects on the Landscape and Visual Amenity, and Cultural Heritage objectives.</p> <p>Neutral effects are anticipated for the remaining SEA objectives, including biodiversity, soil and water, due to the focus of hubs within urban locations.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA13	<p>This grouping is likely to result in positive effects on the SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), as it seeks to encourage a modal shift to more sustainable and active travel methods and reduce traffic and congestion through reallocation of road space and encouragement to travel actively. As a result, decreasing levels of transport related air pollution outside of schools and carbon emissions would result. The grouping would also have a positive effect on Material Assets (SEA Objective 8) and Population and Human Health as it promotes a more sustainable use of the existing transport network, encouraging sustainable access and increased travel choice with a focus on improved safety and creating accessible spaces for all users. There would also be a likely reduction in noise and vibration around schools.</p> <p>It is considered that the grouping would have neutral effects on the remaining SEA objectives.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA16	<p>This grouping would likely result in positive effects on the SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), as it seeks to encourage a modal shift by providing higher quality routes for people walking, cycling and wheeling. This will reduce levels of transport related air pollution and carbon emissions, reduce transport related noise and improve the quality of these spaces. The grouping would also have a positive effect on Material Assets (SEA Objective 8) and Population and Human Health as it promotes a more sustainable use of the existing transport network, encouraging sustainable access and increased travel choice</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
	<p>with a focus on improved safety and creating accessible spaces for all users. The grouping is specifically aimed at young people and their carers, therefore may also have a positive effect on reducing childhood obesity and promoting life-long behaviours.</p> <p>It is considered that the grouping would have neutral effects on the remaining SEA objectives due to the limited physical works required.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA19	<p>This grouping is likely to result in positive effects on SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions, reducing transport related noise and improving the quality of places. The grouping would also have a positive effect on Material Assets and Population and Human Health as it seeks to expand the existing active travel network, providing more active travel options, safer routes and helping to reduce noise and vibration in both more urban and rural locations.</p> <p>There is an uncertain relationship between the proposed grouping and the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity SEA objectives, due to the impact of new routes. Further assessment should be undertaken to identify any impacts once the location of interventions is decided.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA23	<p>This grouping is likely to result in positive effects on SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality, as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions. The grouping would also have a positive effect on Material Assets and Population and Human Health as it seeks to expand the existing and popular NCN active travel network, providing more active travel options, safer routes and helping to reduce noise and vibration in both urban and rural locations.</p> <p>There is an uncertain relationship between the proposed grouping and the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14), due to the impact of new routes. Further assessment should be undertaken to identify any impacts once the location of interventions is decided.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
	For Scenario 2, the magnitude of effects will be less than for Scenario 1.
AA24	<p>This grouping is likely to result in positive effects on SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reducing levels of transport related air pollution and carbon emissions. The grouping would also have a positive effect on Material Assets (SEA Objective 8) and Population and Human Health as it is seeking to expand the existing active travel network, providing more active travel options, safer routes and help to reduce noise and vibration in both more urban and rural locations.</p> <p>There is an uncertain relationship between the proposed grouping and the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14) and Material Assets (SEA Objective 9), due to the impact of new routes. Further assessment should be undertaken to identify any impacts once the location of interventions is known.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
AA25	<p>This grouping would likely result in positive effects on the Climatic Factors (SEA Objective 1) and Air Quality SEA objectives due to promoting a modal shift to more sustainable active travel options and as a result a reduction in emissions and improvement in air quality. Positive effects anticipated on the Population and Human Health SEA Objectives and Material Assets (SEA Objective 8) due to an expected increase in users choosing more sustainable travel with a focus on improved safety, user enjoyment and creating accessible spaces for all users.</p> <p>There is potential for negative environmental impacts during construction and operation of the cycle points with possible negative effects on Material Assets, Cultural Heritage and Landscape and Visual Amenity depending on the design and location of the interventions. It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Neutral effects are anticipated for the remaining SEA objectives (biodiversity, soil and water), due to the focus of hubs within urban locations.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
Cumulative	Overall, the Active Travel recommendations are anticipated to result in minor positive effects on SEA Objective 1

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR AA GROUPING
Active Travel Mode Summary	<p>(Climatic Factors) as the various interventions are likely to contribute to reducing emissions from Scotland's transport sector by reducing the need to travel and encouraging a modal shift to more sustainable modes of travel, thereby helping meet Scotland's wider targets to reduce greenhouse gas emissions.</p> <p>The Active Travel recommendations are generally anticipated to result in negligible effects on SEA Objective 2 (Climatic Factors) as most of the interventions proposed will not help directly help to adapt the transport network to the predicted effects of climate change.</p> <p>The Active Travel recommendations are generally anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the various interventions proposed will help to reduce all forms of transport-related air pollution and improve air quality throughout quality by encouraging and facilitating the use of active travel. The various active travel interventions proposed will also potentially help to reduce traffic congestion, limit polluting vehicles, and reduce emissions of key air pollutants.</p> <p>The Active Travel recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed will improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment through improved access to more sustainable forms of transport, provision of active travel connections and related interventions between villages, nearby towns and regional centres, and improvements to existing roads for the purpose of active travel (e.g. improved crossing points, surfacing, lighting etc.).</p> <p>The Active Travel recommendations are generally anticipated to result in minor positive effects on SEA Objective 5 (Population and Human Health) as most of the interventions proposed will help reduce noise and vibration on the transport network by encouraging a modal shift to more sustainable modes of travel, i.e. active travel options. For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR AA PACKAGE
Argyll and Bute	<p>The group references included in the Argyll & Bute region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Edinburgh and SE Scotland	<p>The group references included in the Edinburgh & South-East Scotland region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR AA PACKAGE
Forth Valley	<p>The group references included in the Forth Valley region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Glasgow City Region	<p>The group references included in the Glasgow City region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Highlands and Islands	<p>The group references included in the Highlands and Islands region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR AA PACKAGE
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Shetland Isles	<p>The group references included in the Shetland Isles region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA13 Increasing Active Travel to School • AA19 Village – Town Active Travel Connections <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR AA PACKAGE
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • AA1 Options to Improve Access to Bikes • AA9 Connected Neighbourhoods • AA10 Reducing Trunk Road Severance • AA13 Increasing Active Travel to School • AA16 Active Freeways • AA19 Village – Town Active Travel Connections • AA23 Long-distance Active Travel Network • AA24 Connecting Scotland's Towns • AA25 Cycle Parking Hubs <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

Behaviour Change (BC) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
BC2	Behaviour Change Initiatives: Delivery of (or provide support for delivery of) activities which provide encouragement, enablement and incentivisation for more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives.
BC10	Expansion of 20mph zones and limits: Provision of new or expanded 20mph schemes across Scotland, on appropriate roads in cities, towns and villages. This would reduce traffic speeds and create safer environments which promote and encourage active travel choices.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
BC2	+	~	+	+	+	~	+	+	+	~	~	~	~	~	+
BC10	+	~	+	+	+	+	+	0	0	0	0	0	0	0	+
Cumulative Behavioural Change Mode Summary	+	~	+	+	+	?	+	?	?	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BC GROUPING
BC2	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3), as it seeks to encourage a modal shift to more sustainable and active travel methods, and, as a result, improving levels of transport-related air pollution and carbon emissions. The grouping would also have a positive effect on Material Assets and Population and Human Health as it would promote more sustainable use of the existing transport network, encourage sustainable access, increase travel choice and facilitate change for those otherwise unable to access travel options (SEA Objectives 4, 5, 7, 8 and 9).</p> <p>The grouping has no clear relationship to the achievement of the remaining SEA Objectives given the nature (social marketing and campaigning) of the grouping.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
BC10	<p>This grouping is likely to result in positive effects for SEA Objectives related to Climatic Factors (SEA Objective 1) and Population and Human Health (SEA Objectives 4, 5, 6 and 7) as it seeks to improve safety of the road network and street environments, which in turn will encourage greater use of sustainable active travel methods and prioritises pedestrians in the public realm. In addition, road traffic travelling at slower speeds may also result in positive effects in relation to a reduction in noise and vibration; as well as Air Quality (SEA Objective 3), due to a reduction in fuel consumption.</p> <p>There is an uncertain relationship between the grouping and Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity SEA Objectives at this time. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Given the nature of the grouping, it has no (or negligible) clear relationship to the achievement of SEA Objective 2 at this time. The grouping is related to, but unlikely to have any effect on the achievement of many of the SEA Objectives.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
Cumulative	Overall, the Behaviour Change recommendations are anticipated to result in minor positive effects on SEA

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BC GROUPING
Behaviour Change Mode Summary	<p>Objective 1 (Climatic Factors) as both interventions proposed will help reduce emissions from Scotland's transport sector by encouraging a modal shift to more sustainable modes of travel.</p> <p>The Behaviour Change recommendations are generally anticipated to result in negligible effects on SEA Objective 2 (Climatic Factors) as both the interventions proposed will not help to adapt the transport network to the predicted effects of climate change.</p> <p>The Behaviour Change recommendations are generally anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the interventions proposed will help to reduce all forms of transport-related air pollution and improve air quality throughout quality by encouraging active and sustainable travel choices.</p> <p>The Behaviour Change recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed will improve quality of life and human health by encouraging more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives, and expanding 20mph zones and limits across Scotland.</p> <p>The Behaviour Change recommendations are generally anticipated to result in minor positive effects on SEA Objective 5 (Population and Human Health) as the interventions proposed will help reduce noise and vibration on the transport network by encouraging a modal shift to more sustainable modes of travel, and expanding 20mph zones and limits across Scotland.</p> <p>The Behaviour Change recommendations are anticipated to result in uncertain effects on SEA Objective 6 (Population and Human Health) as while the expansion of 20mph zones and limits across Scotland will support the development of places that feel safe to all users, the encouragement of more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives will not directly help promote / invest in / build / maintain infrastructure to support the development of high-quality places.</p> <p>The Behaviour Change recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the interventions proposed will help improve safety on the transport network by potentially reducing the likelihood of transport-related road accidents and casualties by encouraging a modal shift to more sustainable modes of travel and through the expansion of 20mph zones and limits across Scotland.</p> <p>The Behaviour Change recommendations are anticipated to result in uncertain effects on SEA Objective 8 (Material Assets) as the encouragement / enablement / incentivisation for more people to make use of active and</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BC GROUPING
	<p>sustainable transport choices more often through national, regional and/or local initiatives will promote and improve the sustainable use of the transport network. However, there is not a clear link between the expansion of 20mph zones and limits across Scotland and the promotion and improvement of the sustainable use of the transport network.</p> <p>The Behaviour Change recommendations are generally anticipated to result in uncertain effects on SEA Objective 9 (Material Assets) as the encouragement / enablement / incentivisation for more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives will potentially reduce the use of natural resources. However, there is not a clear link between the expansion of 20mph zones and limits across Scotland and the reduction in the use of natural resources.</p> <p>The Behaviour Change recommendations are generally anticipated to result in uncertain effects on SEA Objectives 10 (Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as, given the nature of the interventions (i.e., social marketing and campaigning / expansion of 20mph zones and limits), there is no clear link between the mode and the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity.</p> <p>For the Scenario 2, the magnitude of effects will be less than for the Scenario 1 due to the reduction in travel.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR BC PACKAGE
Argyll and Bute	<p>The group references included in the Argyll & Bute region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Edinburgh and SE Scotland	<p>The group references included in the Edinburgh and South-East Scotland region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Forth Valley	<p>The group references included in the Forth Valley region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Glasgow City Region	<p>The group references included in the Glasgow City region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Highlands and Islands	<p>The group references included in the Highlands and Islands region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR BC PACKAGE
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Shetland Isles	<p>The group references included in the Shetland Isles region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • BC2 Behavioural Change Initiatives • BC10 Expansion of 20mph Zones and Limits <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

National Bus (BS) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
BS1	Options to increase the roll out of bus priority measures, and where already available, improve existing measures
BS2	Decarbonisation of the Bus Network: Support the decarbonisation of the bus network through continuation of support funding schemes to introduce low emission vehicles.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
BS1	+	~	+	+	?	0	+	+	?	?	?	?	?	?	?
BS2	++	~	++	+	+	~	0	+	0	+	+	+	~	~	+
Cumulative Bus Mode Summary	+	~	+	+	?	?	?	+	?	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BS GROUPING REFERENCE
BS1	<p>This grouping is likely to result in positive effects for SEA Objectives related to Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3), particularly in relation to the achievement of a reduction in transport related emissions as it seeks to encourage a modal shift to more sustainable public transport forms. There is evidence that implementation of extensive bus lanes can reduce car use by up to 6%. Positive environmental effects are anticipated, particularly if the interventions support reinvestment in a low carbon fleet. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) by providing a sustainable alternative for users to travel to employment, education, healthcare and leisure activities, which has potential for improved safety on the transport network. It could also result in a beneficial impact on noise and vibration; however, this would depend on the location of the measures / upgrades and is therefore uncertain at this stage.</p> <p>The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network.</p> <p>There is potential for possible positive effects on Biodiversity as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage as the overall impact will depend on whether physical construction works are required.</p> <p>Depending on the location of the bus priority measure implementation or upgrades, there is potential for negative environmental impacts during construction and operation of the improvements, particularly on Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity and noise (Population and Human Health SEA Objective 5). It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>The grouping is related to, but unlikely to have any effect on the achievement of SEA Objective 6; and given the nature of the grouping, it has no (or negligible) clear relationship to the achievement of SEA Objective 2 at this time.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
BS2	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3), particularly in relation to the achievement of a reduction in transport related emissions;</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BS GROUPING REFERENCE
	<p>as it seeks to reduce emissions from buses through decarbonisation / use of alternative fuels (electric, hydrogen). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health as a result of encouraging sustainable access and a move away from diesel engines to alternatives such as electric which could result in a beneficial impact on noise and vibration (SEA Objectives 4 and 5).</p> <p>There are possible positive effects on Water, Biodiversity and Soil as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage.</p> <p>The grouping is related to, but unlikely to have any effect on the achievement of SEA Objectives 7 and 9; and given the nature of the grouping, it has no (or negligible) clear relationship to the achievement of SEA Objectives 2, 6, 13 and 14 at this time.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
Cumulative Bus Mode Summary	<p>Overall, the Bus recommendations are anticipated to result in minor positive effects on SEA Objective 1 (Climatic Factors) as the delivery of faster and more reliable journey times for bus passengers will help reduce emissions from Scotland's transport sector by reducing the need to travel and encouraging a modal shift towards more sustainable transport options i.e., public transport. The decarbonisation of the bus network will also directly contribute to the achievement of Scotland's CO2 emissions reduction target of net zero by 2045 and promote and support the best use of clean fuels / technologies.</p> <p>The Bus recommendations are generally anticipated to result in negligible effects on SEA Objective 2 (Climatic Factors) as the interventions proposed will not help adapt the transport network to the predicted effects of climate change.</p> <p>The Bus recommendations are generally anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the interventions proposed will directly help to reduce all forms of transport-related air pollution and improve air quality throughout Scotland by helping to reduce traffic congestion, limiting more polluting vehicles, helping to limit polluting traffic growth, and reducing emissions of key air pollutants, particularly through the decarbonisation of the bus network.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BS GROUPING REFERENCE
	<p>The Bus recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the delivery of faster and more reliable journey times for bus passengers will ensure safe and sustainable access for all users to essential services and employment, provide increasing transport choice that meet the needs of the population, allow for greater journey time reliability, and potentially encourage sustainable access to the natural and historic environment, improve accessibility to open spaces and the path network for physical recreational purposes, and improve access to healthcare facilities. The decarbonisation of the bus network will also potentially encourage sustainable access to the natural and historic environment and ensure safe and sustainable access for all users to essential services and employment.</p> <p>The Bus recommendations are generally anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as while the decarbonisation of the bus network is anticipated to reduce noise and vibration on the transport network, there is potential for negative effects on noise and vibration associated with the delivery of faster and more reliable journey times for bus passengers, depending on the location of the bus priority measure implementation or upgrades.</p> <p>The Bus recommendations are anticipated to result in uncertain effects on SEA Objective 6 (Population and Human Health) as the proposed interventions are unlikely to help promote / invest in / build / maintain infrastructure to support the development of high-quality places.</p> <p>The Bus recommendations are anticipated to result in uncertain effects on SEA Objective 7 (Population and Human Health) as while the delivery of faster and more reliable journey times for bus passengers will support the development of places that feel safe to all users, it is unlikely that the decarbonisation of the network would contribute to the achievement of the promotion / investment in / building / maintenance of infrastructure to support the development of high-quality places.</p> <p>The Bus recommendations are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as the interventions proposed will promote and improve the sustainable use of the transport network by supporting improvements to transport technology, interchanges and timetabling, plan for future travel arrangements where journeys are made by a number of different modes, and plan for future capacity of public transport (taking demographic and other societal changes into account).</p> <p>The Bus recommendations are anticipated to result in uncertain effects on SEA Objective 9 (Material Assets) as any reduction in the use of natural resources will be dependent on the location of the bus priority measure</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR BS GROUPING REFERENCE
	<p>implementation or upgrades, and there is also potential for negative environmental impacts during construction and operation of the improvements. The decarbonisation of the bus network is also unlikely to result in any significant contributions to the circular economy.</p> <p>The Bus recommendations are anticipated to result in uncertain effects on SEA Objectives 10 (Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as depending on the location of the bus priority measure implementation or upgrades, there is potential for negative environmental impacts during construction and operation of the improvements. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate. Furthermore, there are possible positive effects on the water environment, biodiversity and soil as a result of a reduction in diffuse pollution on key receptors associated with the decarbonisation of the bus network; however, the significance of effect is uncertain at this stage. There is also no clear relationship between the decarbonisation of the bus network and the achievements of SEA Objectives 13 and 14.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1 due to the reduction in travel.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR BS PACKAGE
Argyll and Bute	<p>The group references included in the Argyll & Bute region are:</p> <ul style="list-style-type: none"> • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Edinburgh and SE Scotland	<p>The group references included in the Edinburgh and South-East Scotland region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Forth Valley	<p>The group references included in the Forth Valley region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Glasgow City Region	<p>The group references included in the Glasgow City region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Highlands and Islands	<p>The group references included in the Highlands and Islands region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR BS PACKAGE
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Shetland Isles	<p>The group references included in the Shetland Isles region are:</p> <ul style="list-style-type: none"> • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • BS1 Bus Priority Infrastructure • BS2 Decarbonisation of the Bus Network <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package</p>

Island Connectivity (IC) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
IC1c	Mull Connectivity: Connectivity enhancements for the Isle of Mull. Grouping includes options to increase the number of ferry services, increase ferry capacity (including for freight), improve vessels, reliability and resilience and options for a fixed link between Mull and the Scottish mainland and improved connections to the Ardnamurchan and Morvern peninsulas.
IC1d	Northern Isles Connectivity: Connectivity enhancements to the existing Northern Isles Ferry Services (NIFS) ferry routes serving the Orkney Islands and Shetland Islands from the Scottish mainland and an option for a potential fixed link between Orkney and the Scottish mainland
IC1e	Outer Hebrides Connectivity: Connectivity enhancements for the Outer Hebrides. Grouping includes options to enhance Clyde and Hebrides Ferry Services (CHFS) and development of ferry routes. Grouping also includes options for potential fixed links across the Sounds of Harris and Barra.
IC1g	Arran and Campbeltown Connectivity: Connectivity enhancements to Clyde and Hebrides Ferry Services (CHFS) serving Arran and Campbeltown.
IC1h	Islay Connectivity: Connectivity enhancements to Clyde and Hebrides Ferry Services (CHFS) serving Islay.
IC2	New Ferry Routes (Internal to Scotland): Consideration of new internal (to Scotland) ferry routes added to the Clyde and Hebrides Ferry Services (CHFS) and Northern Isles Ferry Services (NIFS) networks.
IC4	Decarbonisation of CHFS and NIFS Ferry Network: Decarbonisation of the CHFS and NIFS ferry networks.
IC5	Fixed Links: Options within this grouping meet at least one of the following criteria: connecting the Scottish mainland (including peninsulas) to an island; reducing the operating costs of CHFS and NIFS networks; and addressing a strategic problem as identified through evidence-based appraisal that cannot be addressed by reasonable alternatives.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
IC1c	-	+	-	+	-	~	~	+	-	-	-	?	?	?	-
IC1d	-	+	-	+	-	~	~	+	-	-	-	?	?	?	-
IC1e	-	+	-	+	-	~	~	+	-	-	-	?	?	?	-

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
IC1g	?	+	?	+	-	~	~	+	-	-	-	?	?	?	?
IC1h	?	+	?	+	-	~	~	+	-	-	-	?	?	?	?
IC2	?	+	?	+	-	~	~	+	-	-	-	?	?	?	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
IC3	+	~	+	+	-	~	0	+	-	-	-	?	?	?	?
IC4	++	~	++	+	+	~	~	+	?	+	+	~	~	~	+
IC5	-	+	-	+	-	~	-	~	-	-	-	-	-	-	-

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
Cumulative Island Connectivity Mode Summary	?	+	?	+	-	~	~	+	-	-	-	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
IC1c	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the ferry network to the direct / indirect risks associated with climate change and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>A fixed link between Mull and the Scottish mainland is likely to result in negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) due to the potential for an increase in motorised traffic to and from the mainland. With the increase in traffic there is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>Negative environmental effects are also anticipated on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation of both the fixed link and harbour upgrade infrastructure required. As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7 at this time.</p> <p>Overall, it is assumed that there would be a minor negative effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of impacts will be less than for the High Scenario due to the reduction in travel.</p>
IC1d	<p>This grouping is likely to result in positive effects on the SEA Objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>would help adapt the ferry network to the direct / indirect risks associated with climate change, and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>A fixed link between Orkney and the Scottish mainland is likely to result in negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) due to the potential for an increase in motorised traffic to and from the mainland. With the increase in traffic, there is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>Negative environmental effects are also anticipated on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation of both the fixed link and harbour upgrade infrastructure required. As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7 at this time.</p> <p>Overall, it is assumed that there would be a minor negative effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of impacts will be less than for the High Scenario due to the reduction in travel.</p>
IC1e	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the ferry network to the direct / indirect risks associated with climate change, and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>The implementation of fixed links in the Outer Hebrides (and between the Outer Hebrides and Skye) is likely to result in negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) due to the potential for an increase in motorised traffic within the archipelago and to and from the mainland. With the increase in traffic there is also potential for negative effects on Population and Human Health (SEA Objective 5)</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>with an increase in noise and vibration.</p> <p>Negative environmental effects are also anticipated on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation of both the fixed link and harbour upgrade infrastructure required. As is standard with marine infrastructure developments further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7 at this time.</p> <p>Overall, it is assumed that there would be a minor negative effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of impacts will be less than for the High Scenario due to the reduction in travel.</p>
IC1g	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the ferry network to the direct / indirect risks associated with climate change and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>With the increase in services there is potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>With an increase in services, and a possible requirement for improvements to harbour infrastructure to facilitate this, there is potential for negative environmental effects, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation. As is standard with marine infrastructure developments further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>Potential negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) are dependent on whether the ferries would reduce road and air miles and/or increase road traffic on the islands, therefore scoring is currently considered uncertain.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7 at this time.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
IC1h	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the ferry network to the direct / indirect risks associated with climate change, and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>With the increase in services there is potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>With an increase in services, and a possible requirement for improvements to harbour infrastructure to facilitate this, there is potential for negative environmental effects, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation. As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>Potential negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) are dependent on whether the ferries would reduce road and air miles and/or increase road traffic on the islands, therefore scoring is currently considered uncertain.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
IC2	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice; together with positive effects on Material Assets (SEA Objective 8) as the grouping supports plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the ferry network to the direct/indirect risks associated with climate change and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>With the increase in services there is potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>With an increase in services and a possible requirement for improvements to harbour infrastructure to facilitate this, there is also potential for negative environmental effects, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation. As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>Potential negative effects on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) are dependent on whether the ferries would reduce road and air miles and/or increase road traffic on the islands, therefore scoring is currently considered uncertain.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objectives 6 and 7.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
IC3	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3), particularly in relation to the achievement of a reduction in road and air transport-related emissions; however, the significance of these positive effects is uncertain at this stage and will be</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>dependent on whether the ferries would use lower or zero carbon fuels. This grouping is also likely to result in positive effects related to Population and Human Health (SEA Objective 4) and Material Assets (SEA Objective 8) as the enhancements seek to improve accessibility, reduce severance, increase transport choice and improve the sustainable use of the transport network.</p> <p>There is potential for negative environmental effects during construction and operation of any new harbour infrastructure, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) and noise (Population and Human Health SEA Objective 5); however, the significance of effect is uncertain at this stage. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Whilst the grouping is related to the Population and Human Health SEA Objective 7, it is unlikely to have a notable effect on the achievement of this objective and is therefore considered to be neutral. The grouping has no clear relationship to the achievement of the remaining SEA Objectives related to Climatic Factors and Population and Human Health (SEA Objectives 2 and 6 respectively) at this time.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
IC4	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors, Air Quality and the Water Environment (SEA Objectives 1, 3 and 10), particularly in relation to the achievement of a reduction in transport-related emissions; as the grouping seeks to reduce emissions from ferries through decarbonisation / use of alternative fuels (electric, hydrogen). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use, and management of, the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 5) as a result of encouraging sustainable access and a move away from diesel engines to alternatives such as electric which could result in a beneficial impact on noise and vibration for those living or working near ferry terminals.</p> <p>There are possible positive effects on Biodiversity (SEA Objective 11) as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage. The effects on Material Assets (SEA Objective 9) are uncertain at this stage.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>Given the nature of the grouping, it has no (or negligible) clear relationship to the achievement of many of the SEA Objectives at this time, including Climatic Factors, Population and Human Health, Soil, Cultural Heritage, and Landscape and Visual Amenity (SEA Objectives 2, 6, 7, 12, 13 and 14 respectively).</p> <p>Overall, it is assumed that there would be a positive effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
IC5	<p>This grouping is likely to result in positive effects on the SEA objective related to Population and Human Health (SEA Objective 4) as the enhancements seek to improve accessibility, reduce severance and increase transport choice.</p> <p>It is also likely to result in minor positive effects on Climatic Factors (SEA Objective 2) as the enhancements would help adapt the transport network to the direct / indirect risks associated with climate change and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>A fixed link is likely to result in negative effects on Climatic Factors (SEA Objective 1), Air Quality (SEA Objective 3) and Population and Human Health (SEA Objective 7) due to the potential for an increase in motorised traffic to and from the Scottish mainland. There is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>Negative environmental effects are also anticipated on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13, and 14 respectively) during construction and operation of the fixed link infrastructure. As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objective 6, or Material Assets SEA Objective 8, at this time.</p> <p>Overall, it is assumed that there would be a minor negative effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of impacts will be less than for the High Scenario due to the reduction in travel.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
Cumulative Island Connectivity Mode Summary	<p>Overall, the Island Connectivity recommendations are anticipated to result in uncertain effects on SEA Objective 1 (Climatic Factors) as the various interventions are not likely to contribute to reducing emissions from Scotland's transport sector by reducing the need to travel and encouraging modal shift and help meet Scotland's wider targets to reduce greenhouse gas emissions. In addition, some of the new fixed links proposed have the potential to result in an increase in motorised traffic to and from the mainland, potentially resulting in increases in emissions in turn. However, Intervention IC4 is likely to result in major positive effects on SEA Objective 1 as the decarbonisation of the CHFS and NIFS ferry networks will directly contribute to the achievement of Scotland's CO2 emissions reduction target of net zero by 2045, promote and support the best use of clean fuels / technologies, and promote and facilitate modal shift to more sustainable transport options.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor positive effects on SEA Objective 2 as several of the interventions proposed (i.e. IC1c, IC1d, IC1e, IC1g and IC1h) comprise enhancements which will help adapt the ferry network to the direct / indirect risks associated with climate change, prioritise adaptation of the ferry network in locations that are more vulnerable to the projected impacts of climate change (i.e. island and coastal communities), prioritise adaptation of ferry connections to critical infrastructure, and maintain / improve access to and within isolated island communities at risk from climate change impacts. Interventions IC2 and IC4 are anticipated to result in uncertain and negligible effects on SEA Objective 2 respectively as these interventions will not necessarily adapt the ferry network to the predicted effects of climate change. However, the new ferry routes proposed as part of IC2 could potentially improve access to / within isolated island communities at risk from climate change.</p> <p>The Island Connectivity recommendations are generally anticipated to result in uncertain effects on SEA Objective 3 (Air Quality) as the enhancements to existing ferry routes proposed as part of interventions IC1c, IC1d, IC1e, IC1g and IC1h and the new ferry routes proposed as part of IC12 will not reduce forms of transport-related air pollution or improve air quality. Furthermore, these proposals have the potential to result in increases in motorised traffic to and from the mainland, thereby potentially resulting in increases in emissions and reductions in air quality. However, interventions IC1c, IC1d, IC1e, IC1g and IC1h also involve upgrades to / replacement of vessels which could potentially result in reductions in air pollution and contribute to improvements in air quality. Intervention IC4 is anticipated to result in major positive effects on SEA Objective 3 as the decarbonisation of the CHFS and NIFS ferry networks will help reduce emissions of key air pollutants</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>(NO_x, particulates, SO₂) from ferry transport, help to limit polluting traffic growth, and potentially limit more polluting vehicles in sensitive areas.</p> <p>The Island Connectivity recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as each of the interventions will improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment through the various enhancements to existing ferry routes / infrastructure, new ferry routes and decarbonisation of the ferry network proposed. In particular, this mode will ensure safe and sustainable access for all users to essential services and employment, provide increasing transport choice that meet the needs of the population, support changing demographics by providing appropriate transport facilities to meet their needs, and improve access to healthcare facilities.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 5 (Population and Human Health) as the majority of the interventions proposed will not reduce noise and vibration on the transport network as many of the proposals (i.e. IC1c, IC1d, IC1e, IC1g, IC1h and IC2) comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions. However, intervention IC4 is anticipated to result in minor positive effects on SEA Objective 5 as the decarbonisation of the ferry network involves several proposals which could reduce noise and vibration on the ferry network e.g. the use of new fuel technologies, the introduction of hydrogen ferries, and reducing / removing air travel in inter and intra island travel.</p> <p>The Island Connectivity recommendations are anticipated to result in negligible effects on SEA Objectives 6 and 7 (both Population and Human Health) as these interventions will not significantly promote / invest in / build / maintain infrastructure to support the development of high-quality places (including the development of places that feel safe to all users, prioritisation of pedestrians in the public realm or the creation and maintenance of an attractive public realm), or improve safety on the transport network.</p> <p>The Island Connectivity recommendations are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as the interventions proposed each aim to promote / improve the sustainable use of the transport network, including improvements to ferry interchanges and timetabling, and helping plan for the future capacity of public transport, taking demographic and other societal changes, particularly within island / coastal</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>communities, into account. Some of the interventions will also help plan for future travel arrangements where journeys are made by a number of different modes by providing new ferry / fixed links which will connect to new road connections (e.g., IC1d). Interventions IC1c, IC1d, IC1e, IC1g, IC1h and IC4 also support improvements to transport technology and promotes the sustainable use and management of existing infrastructure through the various proposals for upgrades to / replacement of vessels, and the decarbonisation of the ferry network.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 9 (Material Assets) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce in the use of natural resources. Intervention IC4 is anticipated to result in uncertain effects on SEA Objective 9 as this intervention may result in reductions in the use of natural resources and contributions to the circular economy; however, this is dependent on the methods / technologies adopted in relation the decarbonisation of the ferry network.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 10 (Water Environment) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment, e.g. physical impacts on waterbodies / watercourses / coastlines associated with development, constraining water bodies from the achievement of Good Ecological Status / Good Ecological Potential under the Water Framework Directive, or increasing the risk of diffuse pollution from current or increasing traffic volumes. Intervention IC4 is anticipated to result in minor positive effects on SEA Objective 10 as the decarbonisation of the ferry network has the potential to protect / maintain / improve the quality of the water environment.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 11 (Biodiversity) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. Intervention IC4 is anticipated to result in minor positive effects on SEA Objective 11 as the decarbonisation of the ferry network (e.g., the use of alternative fuel sources, the transition to zero carbon emissions) could potentially protect and / or enhance the integrity of existing habitat, and protect and/ or</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR IC GROUPING
	<p>enhance the integrity of any site of biodiversity or geological value that has been designated at international, national or local levels.</p> <p>The Island Connectivity recommendations are generally anticipated to result in uncertain effects on SEA Objective 12 (Soil) as the majority of the interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential to result in the disturbance of soils, contamination, and indirect impacts on the natural processes of hydrological and ecological regimes. Intervention IC4 is anticipated to result in negligible effects on SEA Objective 12 as there is no clear relationship between this intervention and soils.</p> <p>The Island Connectivity recommendations are generally anticipated to result in uncertain effects on SEA Objective 13 (Cultural Heritage) as the majority of interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential for negative effects on designated and undesignated archaeological sites and other culturally and historically important features; however, further environmental assessment would be required to identify location-specific environmental impacts and mitigation where appropriate. Intervention IC1c is anticipated to result in minor negative effects on SEA Objective 13 due to the new fixed link and harbour infrastructure proposed which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets. Intervention IC4 is anticipated to result in negligible effects on SEA Objective 13 as there is no clear relationship between IC4 and cultural heritage.</p> <p>The Island Connectivity recommendations are generally anticipated to result in uncertain effects on SEA Objective 14 (Landscape and Visual Amenity) as the majority of interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential for negative effects on national / regional / local landscape designations; however, further environmental assessment would be required to identify location-specific environmental impacts and mitigation where appropriate. Intervention IC1c is anticipated to result in minor negative effects on SEA Objective 13 due to the new fixed link and harbour infrastructure proposed which could result in negative effects on national / regional / local landscape designations. Intervention IC4 is anticipated to result in negligible effects on SEA Objective 13 as there is no clear relationship between this intervention and landscape and visual amenity.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
Argyll and Bute	<p>The group references included in the Argyll and Bute region are:</p> <ul style="list-style-type: none"> • IC1c Mull Connectivity • IC1g Arran and Campbeltown Connectivity • IC2h Islay Connectivity • IC2 New Ferry Routes (Internal to Scotland) • IC4 Decarbonisation of CHFS and NIFS Ferry Network <p>Key environmental features impacted by the package of interventions:</p> <p>Population and Human Health The Island Connectivity recommendations are anticipated to have a minor negative effect on Population and Human Health as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p> <p>Material Assets The Island Connectivity recommendations are anticipated to have minor negative effects on Material Assets as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources.</p> <p>Water Environment The Island Connectivity recommendations are anticipated to result in minor negative effects on the Water Environment as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment. In particular, the region is faced with:</p> <ul style="list-style-type: none"> • Large area of coast identified as being at medium and high likelihood of flooding by SEPA <p>Biodiversity The Island Connectivity recommendations are anticipated to result in minor negative effects Biodiversity as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. Key designations in the coastal and water region likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of SACs

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<ul style="list-style-type: none"> • A number of Special Protected Areas (SPA) • A number of Nature Conservation Marine Protected Areas (MPA) <p>Cultural Heritage</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Cultural Heritage due to the new fixed link and harbour infrastructure proposed which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets.</p> <p>Key designations in the coastal region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of A-C Listed Buildings • A Historic Marine Protected Area <p>Landscape and Visual</p> <p>The island Connectivity recommendations are anticipated to result in minor negative effects on Landscape and Visual due to the new fixed link and harbour infrastructure, effecting national / regional / local landscape designations.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of National Scenic Areas
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • IC1g Arran and Campbeltown Connectivity • IC2 New Ferry Routes (Internal to Scotland) • IC4 Decarbonisation of CHFS and NIFS Ferry Network <p>Key environmental features impacted by the package of interventions:</p> <p>Population and Human Health</p> <p>The Island Connectivity is anticipated to have a minor negative effect on the Population and Human Health as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p> <p>Material Assets</p> <p>The Island Connectivity recommendations are anticipated to have minor negative effects to the Material Assets as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<p>Water Environment</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects the Water Environment as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment.</p> <p>In particular, the region is faced with:</p> <ul style="list-style-type: none"> • Large area of coast identified as being at medium and high likelihood of flooding by SEPA <p>Biodiversity</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Biodiversity as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • SPA • Nature Conservation Marine Protected Area
Edinburgh and SE Scotland	<p>The group reference included in the Edinburgh & SE Section region is:</p> <ul style="list-style-type: none"> • IC2 New Ferry Routes (Internal to Scotland) <p>No other key environmental features within the SEA topics in the region have been identified as being impacted by the package.</p> <p>Note: New Ferry Routes (Internal to Scotland) has not been assessed yet as still tbc.</p>
Forth Valley	No groupings apply to the Forth Valley region.
Glasgow City Region	No groupings apply to the Glasgow City region.
Highlands and Islands	<p>The group references included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • IC1c Mull Connectivity • IC1d Northern Isles Connectivity • IC1e Outer Hebrides Connectivity • IC4 Decarbonisation of CHFS and NIFS Ferry Network <p>Key environmental features impacted by the package of interventions:</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<p>Population and Human Health</p> <p>The Island Connectivity is anticipated to have a minor negative effect on the Population and Human Health as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p> <p>Material Assets</p> <p>The Island Connectivity recommendations are anticipated to have minor negative effects to the Material Assets as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources.</p> <p>Water Environment</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects the Water Environment as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment.</p> <p>In particular, the region is faced with:</p> <ul style="list-style-type: none"> • Large area of coast identified as being at medium and high likelihood of flooding by SEPA <p>Biodiversity</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Biodiversity as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of SACs • A number of SPAs <p>Cultural Heritage</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Cultural Heritage due to the new fixed link and harbour infrastructure proposed which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets.</p> <p>Key designations in the coastal region are likely to be threatened by the</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<p>recommendations:</p> <ul style="list-style-type: none"> • Heart of Neolithic Orkney Heritage Site • A-C Listed Buildings • Historic Marine Protected Areas <p>Landscape and Visual Amenity</p> <p>The island Connectivity recommendations are anticipated to result in minor negative effects on Landscape and Visual due to the new fixed link and harbour infrastructure, effecting national / regional / local landscape designations.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of National Scenic Areas
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • IC1d Northern Isles Connectivity • IC4 Decarbonisation of CHFS and NIFS Ferry Network <p>Key environmental features impacted by the package of interventions:</p> <p>Population and Human Health</p> <p>The Island Connectivity is anticipated to have a minor negative effect on the Population and Human Health as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p> <p>Material Assets</p> <p>The Island Connectivity recommendations are anticipated to have minor negative effects to the Material Assets as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources.</p> <p>Water Environment</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects the Water Environment as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment.</p> <p>In particular, the region is faced with:</p> <ul style="list-style-type: none"> • Large area of coast identified as being at medium and high likelihood of flooding by SEPA

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<p>Biodiversity</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Biodiversity as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A SAC
Borders	No groupings apply to the Borders region.
Shetland Isles	<p>The group references included in the Shetland Isles region are:</p> <ul style="list-style-type: none"> • IC1d Northern Isles Connectivity • IC4 Decarbonisation of CHFS and NIFS Ferry Network <p>Key environmental features impacted by the package of interventions:</p> <p>Population and Human Health</p> <p>The Island Connectivity is anticipated to have a minor negative effect on the Population and Human Health as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p> <p>Material Assets</p> <p>The Island Connectivity recommendations are anticipated to have minor negative effects to the Material Assets as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources.</p> <p>Water Environment</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects the Water Environment as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment.</p> <p>In particular, the region is faced with:</p> <ul style="list-style-type: none"> • Large area of coast identified as being at medium and high likelihood of flooding by SEPA

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR IC PACKAGE
	<p>Biodiversity</p> <p>The Island Connectivity recommendations are anticipated to result in minor negative effects on Biodiversity as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the coastal and water region are likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A SAC
South-West	No groupings apply to the South-West region.
Tay Cities	No groupings apply to the Tay Cities region.

National Freight (FT) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
FT1	Decarbonisation of Freight Deliveries: Interventions to support the decarbonisation of freight deliveries, including awareness and education activities, alternative fuel infrastructure and alternative fuel HGV trials.
FT2	Railway Freight Terminals and Facilities: Improving the modal shift of freight from road to rail primarily for trunk haul movements (but not exclusively) through a network of rail freight terminals and facilities to include direct connections to manufacturing facilities and warehousing.
FT3	Freight Rest Stops: An audit of the availability of lorry parks and rest areas within 5kms of the trunk road network to help identify which routes have gaps in provision.
FT4	Freight Reliability and Efficiency Improvements: Interventions designed to provide improved resilience on the road network in Scotland for the freight industry, such as: strengthening bridges, 50mph speed limits, implementing freight route signage
FT5	Freight Consolidation and Last-Mile Logistics: Introduction of measures to improve freight connectivity within urban and rural areas, such as improved access to cargo bikes, consolidation centres to aid 'last-mile' logistics and use of innovative technologies.
FT6	Freight Incentives and Freight Best Practice: Expansion of Freight Facilities Grant and Mode Shift Revenue Support to encourage more efficient, environmentally friendly practices within the freight industry, including promoting sustainable transport options
FT7a	Rail Freight Enhancements for Key Arterial & Diversionary Routes: Rail freight enhancements required on key arterial and diversionary routes, as outlined as part of the Industry Growth Plan for Rail Freight by the Scotland Freight Joint Board in 2017. The options which comprise this grouping include gauge and capacity enhancements on several routes, as well as specific development options on these lines.
FT7b	Rail Freight Enhancements for Core and Other Freight Routes: Rail freight enhancements required on key arterial and diversionary routes, as outlined as part of the Industry Growth Plan for Rail Freight by the Scotland Freight Joint Board in 2017. The options that sit in this section include gauge enhancements, weight capability improvements and lengthening of freight loops.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
FT1	++	0	++	0	+	0	0	+	?	?	?	?	?	?	?
FT2	++	0	++	0	?	0	+	0	-	?	?	?	?	?	?
FT3	0	~	~	+	~	0	+	0	~	~	~	~	~	~	0
FT4	?	+	?	+	?	~	+	0	?	?	?	?	?	?	?
FT5	+	?	+	?	+	~	+	+	+	?	?	?	?	?	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
FT6	+	~	+	+	+	~	+	+	~	?	?	?	~	~	+
FT7a	++	0	++	0	+	~	+	+	-	?	?	?	?	?	?
FT7b	++	0	++	0	+	~	+	+	-	?	?	?	?	?	?
Cumulative Freight Mode Summary	+	0	+	0	?	0	+	+	?	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
FT1	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3), particularly in relation to the achievement of a reduction in transport related emissions; as it seeks to reduce emissions from freight through decarbonisation / use of alternative fuels (electric, hydrogen). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objective 5) as a result of a reduction in noise and vibration on key routes.</p> <p>There are possible positive effects on the Water Environment, Biodiversity and Soil (SEA Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage.</p> <p>Depending on the location and nature of alternatives fuels, infrastructure there is potential for negative environmental effects during construction and operation of the improvements, particularly on Biodiversity, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 11, 13 and 14). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Whilst the grouping is related to the remaining SEA Objectives, it is unlikely to have a notable effect on the achievement of these objective and is therefore considered neutral.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
FT2	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors, Air Quality and Population and Human Health, particularly in relation to the achievement of a reduction in transport related emissions as it seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where alternative fuels are used. It would also have a positive effect on Population and Human Health due to improved safety on the transport network.</p> <p>There are possible positive effects on Water, Biodiversity and Soil as a result of a reduction in diffuse pollution on</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
	<p>key receptors; however the significance of effect is uncertain at this stage.</p> <p>Depending on the source and type of materials/natural resources used to construct new infrastructure, there is potential for negative impacts on Material Assets. As such, it is recommended that further environmental assessment be undertaken as the grouping develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>Depending on the location and nature of the terminals and facilities, there is potential for negative environmental impacts during construction and operation of the improvements, particularly on Biodiversity, Cultural Heritage and Landscape and Visual Amenity. It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>For Scenario 2, the magnitude of effects would be less than for Scenario 1 due to the reduction in travel.</p>
FT3	<p>This grouping is likely to result in positive effects on SEA objectives related to Population and Human Health (SEA Objectives 4 and 7), particularly in relation to improving safety on the transport network and access to essential services. The grouping is related to, but unlikely to have any effect on the achievement of SEA Objectives 1, 6 and 8. Given the nature of the grouping, auditing to inform decision making for improvements to rest and welfare facilities for freight, the grouping has no (or negligible) clear relationship to the achievement of many of the SEA Objectives at this time.</p> <p>Following future decision making, it is recommended that rest stop proposals should be assessed at the detailed appraisal stage, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>No groupings apply to the Forth Valley region.</p>
FT4	<p>This grouping is likely to result in positive effects on SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) due to improved journey time reliability and safety on the transport network. It is also likely to support SEA Objective 2 (Climatic Factors) due to increased resilience of the road network to climate change.</p> <p>The options may result in negative effects on Climatic Factors and Air Quality (SEA Objectives 1 and 3) as road</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
	<p>infrastructure improvements could potentially encourage the use of the road network by freight. However, this should be balanced with a likely improvement in the reliability and reduction in congestion. These objectives are currently considered to result in uncertain effects. An increase in vehicles would also cause increases in noise and vibration associated with the transport network, although this is dependent on the proximity of noise sensitive receptors (SEA Objective 5).</p> <p>Depending on the source and type of materials/natural resources used to construct new infrastructure, there is potential for negative effects on Material Assets (SEA Objective 9). As such, it is recommended that further environmental assessment be undertaken as the grouping develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>Depending on the location and nature of the enhancement, there is also potential for negative environmental effects during construction and operation of the improvements, particularly on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Whilst the grouping is related to the Material Assets SEA Objective 8, it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral. Given the nature of the grouping, it has no clear relationship to the achievement of the Population and Human Health SEA Objective 6 at this time.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
FT5	<p>This grouping would be likely to support the SEA objectives related to Climatic Factors (SEA Objective 1), Air Quality (SEA Objective 3) and Material Assets (SEA Objectives 8 and 9) due to the uptake of sustainable modes of delivery, and consequent reductions in congestion, emissions and use of natural resources. It is also likely to support SEA Objective 5 (Population and Human Health) due to reductions in vehicle noise pollution and vibration, and SEA Objective 7 (Population and Human Health) due to the potential for improving safety on the road network through reductions in vehicular traffic.</p> <p>The interventions have potential to result in potential effects on the Population and Human Health (SEA</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
	<p>Objective 4) by improving access to goods and services for rural communities.</p> <p>Depending on the location and nature of the implementation of consolidation centres, there is potential for negative environmental effects during construction and operation of the improvements, particularly on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are known in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>There is no clear link between this grouping and the Population and Human Health SEA Objective 6 at this time. Overall, it is assumed there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
FT6	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3). This is in relation to the achievement of a reduction in transport-related emissions as it seeks to improve the use of sustainable modes of transport through modal shift of freight from road; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where alternative fuels are used. There would also be a positive effect on Population and Human Health SEA Objectives 5 and 7, due to improved safety on the transport network and reduced noise and vibration associated with a reduction in road traffic. A positive effect on Population and Human Health SEA Objective 4 is also likely, due to improvements in sustainable access to freight services.</p> <p>As the grouping promotes sustainable use of the existing infrastructure it would also be likely to have a positive effect on Material Assets (SEA Objective 8).</p> <p>There are possible positive effects on the SEA objectives related to the Water Environment, Biodiversity and Soil (SEA Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage.</p> <p>Given the nature of the grouping to use softer measures to incentivise operators, there are limited physical interventions anticipated and therefore no clear link between this grouping and the SEA objectives relating to Climatic Factors, Population and Human Health, Material Assets, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 2, 6, 9, 13 and 14 respectively) at this time.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
	<p>Overall, it is assumed that there would be a minor positive effect in terms of the SEA in both Low and High scenarios. For the Low Scenario, the magnitude of impacts will be less than for the High Scenario due to the reduction in travel.</p>
FT7a	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3). This is in relation to the achievement of a reduction in transport-related emissions as it seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where electric traction or alternative fuels are used for rail freight. There would also be positive effects on Population and Human Health SEA Objectives 5 and 7, due to improved safety on the road network and reduced noise and vibration associated with a reduction in road traffic.</p> <p>The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it would promote a more sustainable use and management of the existing transport network.</p> <p>Depending on the source and type of materials/natural resources used to construct new infrastructure, there is potential for negative effects on Material Assets (SEA Objective 9). As such, it is recommended that further environmental assessment be undertaken as the grouping develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>Depending on the location and nature of the enhancements, there is also potential for negative environmental effects during construction and operation of the improvements, particularly on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objectives 2 (Climatic Factors) and 4 (Population and Human Health), it is unlikely to have a notable effect on the achievement of these objectives and is therefore considered neutral. Given the nature of the grouping, it has no clear link to the achievement of the Population and Human Health SEA Objective 6 at this time.</p> <p>Overall, it is assumed there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
FT7b	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3). This is in relation to the achievement of a reduction in transport-related emissions as it seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where electric traction or alternative fuels are used for rail freight. There would also be positive effects on Population and Human Health SEA Objectives 5 and 7, due to improved safety on the road network and reduced noise and vibration associated with a reduction in road traffic.</p> <p>The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it would promote a more sustainable use and management of the existing transport network.</p> <p>Depending on the source and type of materials/natural resources used to construct new infrastructure, there is potential for negative effects on Material Assets (SEA Objective 9). As such, it is recommended that further environmental assessment be undertaken as the grouping develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>Depending on the location and nature of the enhancements, there is also potential for negative environmental effects during construction and operation of the improvements, particularly on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objectives 2 (Climatic Factors) and 4 (Population and Human Health), it is unlikely to have a notable effect on the achievement of these objectives and is therefore considered neutral. Given the nature of the grouping, it has no clear link to the achievement of the Population and Human Health SEA Objective 6 at this time.</p> <p>Overall, it is assumed there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
Cumulative Multi Modal	<p>Overall, the Freight recommendations are anticipated to result in minor positive effects on SEA Objective 1 (Climatic Factors) as several of the interventions proposed will directly contribute to the reduction of emissions from Scotland's transport sector e.g. the decarbonisation of freight deliveries, improving the modal shift of freight</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
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Summary	<p>from road to rail, and the encouragement of more efficient / environmentally friendly practices within the freight industry including the promotion of sustainable transport options.</p> <p>The Freight recommendations are generally anticipated to result in neutral effects on SEA Objective 2 as it is unlikely that many of the interventions proposed will have a notable effect on the adaption of the transport network to the predicted effects of climate change. However, intervention FT4 is anticipated to have a minor positive effect on SEA Objective 2 as this intervention aims to provide improved resilience on the road network in Scotland for the freight industry e.g. strengthening bridges.</p> <p>The Freight recommendations are generally anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the majority of the interventions proposed would lead to a reduction in transport-related air pollution and consequently improve air quality by helping to reduce traffic congestion. limiting more polluting vehicles, helping to limit polluting traffic growth and reducing emissions of key air pollutants through the decarbonisation of freight deliveries, improving the modal shift of freight from road to rail, and the encouragement of more efficient / environmentally friendly practices within the freight industry including promoting sustainable transport options.</p> <p>The Freight recommendations are anticipated to result in neutral effects on SEA Objective 4 (Population and Human Health) as the relationship between the majority of the interventions and the achievement of SEA Objective 4 (i.e. improvements in quality of life and human health and increases in sustainable access to essential services, employment and the natural environment) is uncertain / unclear. However, it should be noted that several of the interventions proposed (including FT3, FT4 and FT6) are anticipated to result in minor positive effects on SEA Objective 4 largely owing to these interventions ensuring safe and sustainable access to essential services and employment and allowing for greater journey time reliability.</p> <p>The Freight recommendations are generally anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as while some of the interventions (e.g. FT1) would result in a reduction in noise and vibration on key routes, there is potential for negative environmental effects associated with the construction and operation of other interventions (e.g. FT7), although this will be dependent of the location and nature of the enhancements adopted.</p> <p>The Freight recommendations are anticipated to result in neutral effects on SEA Objective 6 (Population and Human Health) as, given the nature of the various interventions proposed, it is unlikely to have a notable effect on the promotion / investment in / building / maintenance of infrastructure to support the development of high</p>
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GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR FT GROUPING
	<p>quality places.</p> <p>The Freight recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the vast majority of the interventions proposed are likely to improve safety on the transport network by reducing the likelihood of transport-related road accidents and casualties, largely due to the various interventions which propose a modal shift of freight from road to rail, in addition to proposals for freight rest stops.</p> <p>The Freight recommendations are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as several of the interventions proposed would help promote and improve the sustainable use of the transport network, primarily through supporting improvements to transport technology and promoting the sustainable use and management of existing infrastructure.</p> <p>The Freight recommendations are generally anticipated to result in uncertain effects on SEA Objective 9 (Material Assets) as depending on the source and type of materials / natural resources used to construct some of the new infrastructure associated with several of the proposed interventions, there is potential for negative impacts on material assets, particularly in relation to the use of natural resources.</p> <p>The Freight recommendations are generally anticipated to result in uncertain effects on SEA Objectives 10 (Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as the potential for any negative environmental effects resulting from some of the interventions proposed (i.e. FT1, FT2, FT4, FT5 and FT7) is dependent on the location and nature of these proposals. It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate. Given the nature of the proposals associated with the remaining interventions (i.e. FT3 and FT6), the relationship between these and SEA Objectives 10 to 14 is unclear.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1 due to the reduction in travel.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
Argyll and Bute	<p>The group references included in the Argyll and Bute region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a • FT7b <p>Key environmental features impacted by the package of interventions: Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a <p>Key environmental features impacted by the package of interventions: Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
<p>Edinburgh and SE Scotland</p>	<p>The group reference included in the Edinburgh & SE Scotland Section region is:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>
<p>Forth Valley</p>	<p>The group reference included in the Forth Valley region is:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a • FT7b <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
<p>Glasgow City Region</p>	<p>The group reference included in the Glasgow City region is:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT4 • FT5 • FT6 • FT7a <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>
<p>Highlands and Islands</p>	<p>The group references included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a • FT7b <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • FT1 • FT3 • FT4 • FT5 • FT6 <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several the interventions proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
Shetland Isles	<p>The group references included in the Shetland Isles region are:</p> <ul style="list-style-type: none"> • FT1 • FT3 • FT4 • FT5 • FT6 <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR FT PACKAGE
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • FT1 • FT2 • FT3 • FT4 • FT5 • FT6 • FT7a <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p> <p>The Freight recommendations are anticipated to result in minor negative effects on Material Assets as several group references proposed involve enhancements to rail freight, terminals and facilities and therefore will not reduce the use of natural resources.</p>

National Metro (MT) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
MT1	<p>Glasgow Metro: The development of a new level of public transport provision within the Glasgow City Region badged under the term 'Glasgow Metro'.</p>
MT2	<p>Edinburgh Mass Transit Options: The development of the mass transit public transport network within the Edinburgh City Region with consideration of bus rapid transit, rail conversion, and tram network extension.</p> <p>Development of the public transport network within the Edinburgh City Region with consideration of bus rapid transit, rail conversion, and tram network extension.</p>
MT3	<p>Aberdeen Rapid Transit: The development of a rapid transit system within the Aberdeen City Region, considering the Bus Priority/Bus Rapid Transit (BRT).</p> <p>Development of the public transport network within the Aberdeen City Region, with consideration of bus rapid transit, and light rail</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
MT1	1	+	+	+	+	?	?	?	?	?	?	?	?	?	?	?
MT1	2	+	+	+	+	?	?	?	?	?	?	?	?	?	?	?
MT2	1	++	+	+	+	?	?	+	++	?	?	-	?	-	-	?
MT2	2	+	+	+	+	?	?	?	?	?	?	-	?	-	-	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
MT3	1	+	+	+	+	?	?	?	?	?	?	-	?	-	?	?
MT3	2	+	+	+	+	?	?	?	?	?	?	-	?	-	?	?
Cumulative Metro Mode Summary	1	+	+	+	+	?	?	?	?	?	?	?	?	?	?	?
Cumulative Metro Mode Summary	2	+	+	+	+	?	?	?	?	?	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MT GROUPING
MT1	1	<p>This grouping is likely to result in positive effects on the Climatic Factors and Air Quality SEA objectives due to enhancing the rail network and promoting a modal shift to more sustainable transport options. As a result, there is an expected reduction in air pollution and carbon emissions. Positive effects are anticipated on Population and Human Health due to an expected increase in sustainable access to essential services. The significance of effects is dependent on the alternatives being safe, affordable and available for all users.</p> <p>There is potential for negative environmental impacts during construction and operation of the improvements, particularly on Biodiversity, Cultural Heritage and Landscape and Visual Amenity and it is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p>
MT1	2	Findings the same as Scenario 1
MT2	1	<p>Mass Transit would likely result in positive effects on SEA objectives related to Climatic Factors (SEA Objectives 1 and 2) and Air Quality (SEA Objective 3) due to enhancing the rail network and promoting a modal shift to more sustainable transport options. It is envisaged that mass transit modes would be electric/battery/hydrogen powered from the outset, helping to improve air quality and reduce Greenhouse Gas emissions. Positive effects are anticipated on Population and Human Health (SEA Objectives 4 and 7) due to an expected increase in sustainable access by public transport to essential services. The significance of these effects is dependent on the alternatives system being safe, affordable and available for all users.</p> <p>There is the potential for negative environmental impacts during construction and operation of the transit options system with possible negative effects on the Water Environment, Biodiversity, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively), depending on the design of the intervention. In addition, significant quantities of materials and construction related trips would be required. Depending on the source and type of materials/natural resources used, there is the potential for negative impacts on Material Assets (SEA Objective 9).</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MT GROUPING
		<p>In terms of construction, there is an opportunity to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>It is therefore recommended that further environmental assessment is undertaken as the options within this grouping further develops to identify potentially significant location specific environmental impacts and mitigation where appropriate. Design and construction environmental management plans would also be recommended to consider how to protect and enhance landscape, drainage, amenity, biodiversity and cultural heritage. Further cumulative impact assessment and environmental mitigation and enhancement measures proposed can be embedded in any final options.</p> <p>Overall, mass transit would have an unknown uncertain effect on the environment. Modal shift to more sustainable modes of transport will have a positive impact on climatic factors and air quality as well as potentially improve human health. However, construction and operation of the system is likely to have a negative impact overall. The exact magnitude of these positive and negative effects is unclear and so the overall balance of the effects of mass transit (either being positive or negative) are uncertain.</p>
MT2	2	Findings the same as Scenario 1

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MT GROUPING
MT3	1	<p>Mass Transit will have positive effects on the SEA objectives related to climatic factors and air quality due to enhancing the rail network and promoting a modal shift to more sustainable transport options. Positive effects anticipated on population and human health due to an expected increase in sustainable access to essential services. Positive effects are dependent on the alternatives being safe, affordable and available for all users to ensure modal shift.</p> <p>There is potential for negative environmental impact during construction and operation of the improvements on cultural heritage and biodiversity, and it is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location specific environmental impacts and mitigation where appropriate.</p>
MT3	2	Findings the same as Scenario 1
Cumulative Metro Mode Summary	1	<p>Overall, the Metro recommendations are anticipated to result in minor positive effects on SEA Objectives 1 and 2 (both Climatic Factors) as each of the interventions proposed involve enhancements to the rail network and encourage a modal shift to more sustainable transport options, thereby helping reduce emissions from Scotland's transport sector and meet Scotland's wider targets to reduce greenhouse gas emissions, and helping adapt the transport network to the predicted effects of climate change.</p> <p>Similarly, the Metro recommendations are anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as it will also help reduce all forms transport-related air pollution and improve air quality through the proposed interventions aimed at enhancing the rail network and encouraging a modal shift to more sustainable transport options. The Metro recommendations will also help to reduce traffic congestion, limit more polluting vehicles, limit polluting traffic growth and reduce emissions of air pollutants, all of which will help contribute to air quality improvements.</p> <p>The Metro recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed will help improve quality of life and human health and increase sustainable access to essential services and the natural environment by ensuring safe and sustainable access for all users to essential services and employment, increasing and enhancing provision of non-motorised transport, providing increasing transport</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MT GROUPING
		<p>choice that meet the needs of the population, supporting changing demographics by providing appropriate transport facilities to meet their needs and improving access to healthcare facilities via the proposed enhancements to the rail network and encouragement of a modal shift to more sustainable transport options.</p> <p>The Metro recommendations are anticipated to result in uncertain effects on SEA Objectives 5 and 6 (Population and Human Health) as it is unclear if the proposed interventions will reduce noise and vibration associated with the transport network or promote / invest in / build and maintain infrastructure to support the development of high-quality places.</p> <p>The Metro recommendations are generally anticipated to result in uncertain effects on SEA Objective 7 (Population and Human Health) as it is unclear if the interventions proposed will improve safety on the transport network by reducing the likelihood of transport-related road accidents and casualties. However, MT2 is considered to have minor positive effects on SEA Objective 7 as this intervention involves proposals for bus rapid transit, rail conversion and tram network extension, thereby potentially leading to reduced road traffic and consequently, road accidents and casualties as well.</p> <p>The Metro recommendations are generally anticipated to result in uncertain effects on SEA Objective 8 (Material Assets) as it is unclear if the proposed interventions will directly promote and improve the sustainable use of the transport network. However, MT2 is considered to result in major positive effects on SEA Objective 8 as this intervention involves proposals for bus rapid transit, rail conversion and tram network extension, thereby potentially helping plan for future travel arrangement where journeys are made by a number of different modes, and plan for the future capacity of public transport, taking demographic and other societal changes into account.</p> <p>The Metro recommendations are anticipated to result in uncertain effects on SEA Objectives 9 (Material Assets), 10 (Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as there is potential for negative environmental impacts during construction and operation of the transit options with possible negative effects on these SEA topics, depending on the design of the intervention. It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MT GROUPING
		location specific environmental impacts and mitigation where appropriate.
Cumulative Metro Mode Summary	2	Findings for Scenario 2 are the same as those for Scenario 1.

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR MT PACKAGE
Argyll and Bute	No groupings apply to the Argyll & Bute region.
Ayrshire and Arran	No groupings apply to the Ayrshire & Arran region.
Edinburgh and SE Scotland	<p>The group reference included in the Edinburgh & SE Section region is:</p> <ul style="list-style-type: none"> • MT2 Edinburgh Mass Transit Options <p>Key environmental features impacted by the package of interventions:</p> <p>Biodiversity</p> <p>The Mass Transit recommendations are anticipated to result in negative effects on Biodiversity due to the construction and operation of the transit options system including the rail conversion, tram network extension and bus rapid transit. Potential negative effects include potential damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the region likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A Ramsar Site • An SPA • A number of SSSI's <p>Cultural Heritage</p> <p>The Mass Transit recommendations are anticipated to result in negative effects on Cultural Heritage due to the construction and operation of the transit options system including the rail conversion, tram network extension and bus rapid transit. Designated and undesignated archaeological sites and other cultural heritage features / key views may be affected.</p> <p>Key designations likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> • A number of Scheduled monuments • The Old and New Towns of Edinburgh World Heritage Site • A number of Conservation Areas • A number of Listed Buildings • A Battlefield Inventory Boundary <p>Landscape and Visual</p> <p>The Mass Transit recommendations are anticipated to result in negative effects on Biodiversity due to the construction and operation of the transit options system including the rail conversion, tram network extension and bus rapid transit. Designated and undesignated areas and views may be affected.</p> <p>Key designations in the region likely to be threatened by the recommendations:</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR MT PACKAGE
	<ul style="list-style-type: none"> A number of Garden and Designated Landscapes
Forth Valley	No groupings apply to the Forth Valley region.
Glasgow City Region	<p>The group reference included in the Glasgow City region is:</p> <ul style="list-style-type: none"> MT1 Glasgow Metro <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Highlands and Islands	No groupings apply to the Highlands & Islands region.
North-East	<p>The group references included in the North-East region is:</p> <ul style="list-style-type: none"> MT3 Aberdeen Rapid Transit <p>Biodiversity</p> <p>The Mass Transit recommendations are anticipated to result in negative effects on Biodiversity due to the construction and operation of the transit options system including development of the transport hub, light rail/ tram and rapid bus transit. Potential negative effects include damage to / loss of designated and undesignated wildlife or geological sites.</p> <p>Key designations in the region likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> SAC <p>Cultural Heritage</p> <p>The Mass Transit recommendations are anticipated to result in minor negative effects on Cultural Heritage due to the construction and operation of the transit options system including the development of the transport hub, light rail/ tram and rapid bus transit.</p> <p>Key designations in the region likely to be threatened by the recommendations:</p> <ul style="list-style-type: none"> Number of Conservation Areas Number of Listed Buildings
Borders	No groupings apply to the Borders region.
Shetland Isles	No groupings apply to the Shetland Isles region.
South-West	No groupings apply to the South-West region.
Tay Cities	No groupings apply to the Tay Cities region.

Multi Modal (MM) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
MM1	Motorway and Trunk Road Network: Renewal for Reliability, Resilience and Safety: Renew and improve the resilience of the trunk road and motorway network. This would include preventative and programmed structural renewals of carriageways and network structures for consideration.
MM2a	Motorway and Trunk Road Network: Renewal for Reliability, Resilience and Safety: Renew and improve the resilience of the trunk road and motorway network. This would include preventative and programmed structural renewals of carriageways and network structures for consideration.
MM2b	Trunk Road and Motorway Climate Change Adaptation and Resilience: This focuses on the areas on the trunk road and motorway network most at risk of disruption due to weather events. This would involve identification of priorities and measures to strengthen the resilience of Scotland’s trunk road and motorway network to adapt to a changing climate and unplanned events.
MM2c	Rail Network Resilience Climate Change Adaptation: Tackle the existing effects of climate change on the rail network and develop the rail network to be able to maintain a resilient, reliable and safe network in the face of increasing severity of weather events and sea level rises from climate change.

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
MM1	1	?	+	?	+	?	0	?	+	?	?	?	?	?	?	?
MM1	2	?	+	?	+	?	0	?	+	?	?	?	?	?	?	?
MM2a	1	?	+	?	+	?	0	+	0	-	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
MM2a	2	-	+	-	+	?	0	+	0	-	?	?	?	?	?	?
MM2b	1	?	+	?	+	?	0	+	0	?	?	?	?	?	?	?
MM2b	2	?	+	?	+	?	0	+	0	?	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
MM2c	1	?	++	?	+	?	0	+	0	?	?	?	?	?	?	?
MM2c	2	?	++	?	+	?	0	+	0	?	?	?	?	?	?	?
Cumulative Multi Modal Summary	1	?	+	?	+	?	0	+	0	?	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
Cumulative Multi Modal Summary	2	?	+	?	+	?	0	+	0	?	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
MM1	1	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1, 2 and 3) particularly in relation to the achievement of a reduction in transport-related emissions; as it seeks to encourage a modal shift to more sustainable modes of transport and has the potential to improve access for isolated communities at risk from climate change effects.</p> <p>The grouping is also likely to result in a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network; together with a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network where there is a reduction in road traffic. The construction of new and improved road links however have the potential to result in negative effects due to the potential for an increase in motorised traffic. With an increase in traffic, there is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration.</p> <p>Depending on the location and nature of the improvements, there is also potential for negative environmental effects, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14), during construction and operation. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
MM1	2	
MM2a	1	<p>This grouping would be likely to support SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) due to improved safety of the trunk road and motorway network and Climatic Factors due to increased resilience and reliability of the road network.</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
		<p>While this grouping is not expected to have a notable impact on mode shift, a focus on maintaining the existing network as opposed to building new infrastructure is not anticipated to significantly increase traffic volumes or associated emissions which could arise from other types of road schemes. It is therefore not anticipated that this grouping would have a negative impact on Climatic Factors (SEA Objective 1) or Air Quality (SEA Objective 3).</p> <p>While there is the potential for a negative impact on the Materials associated with asset improvements (SEA Objective 9), depending on the source and type of materials/natural resources used in construction, this should be balanced against the interventions potentially reducing the requirement for materials for recurring repairs, should they not be made. As such, it is recommended that further environmental assessment be undertaken as the options develop to identify areas for re-use of construction materials, adhering with circular economy principles. In addition, any opportunity for the options to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>There is potential for negative environmental impact during construction and operation on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively) and it is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate. The SEA will inform the development of the more detailed design and Environmental Impact Assessment (EIA) avoidance, mitigation and enhancement requirements at the project level. There may be opportunities for improving biodiversity in the long-term, with adoption of the principle of securing positive effects for biodiversity.</p> <p>Given the nature of the grouping it is not considered to significantly affect Population and Human Health (SEA Objective 6) or Material Assets (SEA Objective 8), therefore neutral scores were assessed in the SEA.</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
		Overall the cumulative environmental effects are scored uncertain for this grouping, as the effects will be determined by the location, complexity, scale and design of individual options (i.e. flood mitigation or geotechnical schemes).
MM2a	2	The magnitude of effects is expected to be less in the low traffic demand scenario due to the reduction in travel.
MM2b	1	<p>Interventions identified to either adapt or improve the resilience of the trunk road and motorway network to climate change impacts, should lead to an improvement in the reliability of the network, particularly on routes that could be subject to flooding, landslides and erosion. This grouping would therefore be likely to support SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) due to improved reliability and safety on the transport network. It is also likely to support SEA Objective 2 (Climatic Factors) due to increased adaptation and resilience of the trunk road and motorway network to future and current climate change impacts.</p> <p>While this grouping is not expected to have a notable impact on mode shift, a focus on adapting the existing network as opposed to building new infrastructure is not anticipated to increase traffic volumes or associated emissions which could arise from other types of road schemes. It is therefore not anticipated that this grouping would have a negative impact on Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3). Similarly, the unlikely increase in the number of vehicles is not expected to have associated noise impacts, although this may be dependent on the proximity of noise sensitive receptors (SEA Objective 5).</p> <p>While there is the potential for a negative impact on the Materials associated with asset improvements (SEA Objective 9), depending on the source and type of materials/natural resources used in construction, this should be balanced against the interventions potentially reducing the requirement for materials for recurring repairs, should they not be made. As such, it is recommended that further environmental assessment be undertaken as the options develop to identify areas for re-use of construction materials, adhering with circular economy principles. In addition, any opportunity for the options to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
		<p>of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>There is potential for negative environmental impact during construction and operation on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives, 10, 11, 12, 13 and 14 respectively) and it is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate. The SEA will inform the development of the more detailed design and Environmental Impact Assessment (EIA) avoidance, mitigation and enhancement requirements at the project level. There may be opportunities for improving biodiversity in the long-term, with adoption of the principle of securing positive effects for biodiversity.</p> <p>Given the nature of the grouping it is not considered to significantly affect Population and Human Health (SEA Objective 6) or Material Assets (SEA Objective 8), therefore neutral scores were assessed in the SEA.</p> <p>Overall the cumulative environmental effects are scored positive and uncertain for this grouping, as the effects will be determined by the location, complexity, scale and design of individual options (i.e. flood mitigation or geotechnical schemes).</p>
MM2b	2	The magnitude of effects is expected to be less in the low traffic demand scenario due to the reduction in travel.

MM2c	1	<p>Interventions identified to either adapt or improve the resilience of the rail network to climate change impacts, should lead to an improvement in the reliability of the network, particularly on routes that could be subject to flooding, landslides and erosion. This grouping would therefore be likely to result in positive effects on SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) due to improved reliability and safety on the transport network. It is also likely to result in positive effects on SEA Objective 2 (Climatic Factors) due to increased adaptation and resilience of the rail network to future and current climate change impacts.</p> <p>While there is the potential for negative effects on the Materials Assets (SEA Objective 9), associated with asset improvements; depending on the source and type of materials/natural resources used in construction, this should be balanced against the interventions potentially reducing the requirement for materials for recurring repairs, should they not be made. As such, it is recommended that further environmental assessment be undertaken as the options develop to identify areas for re-use of construction materials, adhering with circular economy principles. In addition, any opportunity for the options to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction could be used as a basis for developing these methods.</p> <p>There is potential for negative environmental effects during construction and operation of the improvements, particularly on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). It is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental effects and mitigation where appropriate. There may be opportunities for improving biodiversity in the long-term, with adoption of the principle of securing positive effects for biodiversity.</p> <p>Given the nature of the grouping it is unlikely to have a notable effect on the achievement of the Population and Human Health (SEA Objective 6) or Material Assets (SEA Objective 8) objectives and is therefore considered neutral.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both the Low and High scenarios; as the effects will be determined by the location, complexity, scale and design of individual schemes.</p>
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GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
MM2c	2	
Cumulative Multi Modal Summary	1	<p>The Multi Modal recommendations are anticipated to result in uncertain effects on SEA Objective 1 (Climatic Factors) as the interventions proposed are not expected to have a notable impact on mode shift or the reduction of emissions from Scotland's transport sector.</p> <p>The Multi Modal recommendations are anticipated to result in minor positive effects on SEA Objective 2 (Climatic Factors) as the interventions involve proposals for service improvements and climate change adaptation and resilience. As a result, these interventions are anticipated to directly help adapt the transport network to the direct and indirect risks associated with climate change, potentially prioritise adaptation of transport infrastructure in locations that are more vulnerable to the projected impacts of climate change including coastal and isolated locations, prioritise adaptation transport connections to critical infrastructure (including transport interchanges, hospitals, power, fuel supply and ICT infrastructure), and maintain or improve access to and within disadvantaged areas or isolated communities at risk from climate change impacts e.g. flooding, slope instability etc.</p> <p>The Multi Modal recommendations are generally anticipated to result in uncertain effects on SEA Objective 3 (Air Quality) as the interventions proposed are not expected to have a notable impact on mode shift or, in turn, reduce emissions from Scotland's transport sector or improve air quality across Scotland.</p> <p>The Multi Modal recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed are likely to result in improvements to quality of life and human health and increase sustainable access to essential services, employment and the natural environment by providing service improvements and climate change adaptation and resilience to the existing motorway and trunk road network.</p> <p>The Multi Modal recommendations are anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as the interventions proposed are unlikely to result in an increase in the number of vehicles and thus are not expected to have associated noise impacts, although this may be dependent on the proximity of noise sensitive receptors</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR MM GROUPING
		<p>The Multi Modal recommendations are anticipated to result in neutral effects on SEA Objective 6 (Population and Human Health) as there is no clear link between the majority of the interventions proposed and the promotion / investment in / building / maintenance of infrastructure to support the development of high-quality places.</p> <p>The Multi Modal recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the interventions proposed are expected to improve safety on the transport network due to the various resilience, reliability and safety improvements to the motorway and trunk road network proposed.</p> <p>The Multi Modal recommendations are anticipated to result in neutral effects on SEA Objective 8 (Material Assets) as the interventions proposed are not considered to significantly promote / improve the sustainable use of the transport network.</p> <p>The Multi Modal recommendations are generally anticipated to result in uncertain effects on SEA Objectives 9 (Material Assets), 10 (the Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as there is potential for negative environmental effects during both the construction and operation of the interventions proposed. It is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p>
Multi Modal Summary	2	The magnitude of effects is expected to be less in Scenario 2 due to the reduction in travel.

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR MM PACKAGE
Argyll and Bute	<p>The group reference included in the Argyll & Bute Section region are:</p> <ul style="list-style-type: none"> • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Ayrshire and Arran	<p>The group reference included in the Ayrshire & Arran Section region are:</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Edinburgh and SE Scotland	<p>The group reference included in the Edinburgh & SE Section region are:</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Forth Valley	<p>The group reference included in the Forth Valley region are:</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR MM PACKAGE
	<ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Glasgow City Region	<p>The group reference included in the Glasgow City region are</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Highlands and Islands	<p>The group reference included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
North-East	<p>The group reference included in the North-East region are:</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR MM PACKAGE
	<ul style="list-style-type: none"> • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Borders	<p>The group reference included in the Borders region are:</p> <ul style="list-style-type: none"> • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>
Shetland Isles	<p>The group reference included in the Borders region is:</p> <ul style="list-style-type: none"> • MM1 Improve Routes to Major Ports and Airports <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
South-West	<p>No groupings apply to the South-West region.</p>
Tay Cities	<p>The group reference included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • MM2a Motorway and Trunk Road Network • MM2b Trunk Road and Motorway Climate Change Adaptation and Resilience <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Multi Modal recommendations are anticipated to result in minor negative effects on Material Assets as one of the group references proposed involve renewal and improvement of the resilience of the trunk and motorway network, including preventative and programmed structural renewals of carriageways and network structures for consideration and therefore will not reduce the use of natural resources.</p>

National Passenger Transport (PT) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
PT2	Mobility Hubs and Multi-modal Interchanges: Construction of new or upgrades to existing mobility hubs, P&R sites and other multi-modal interchanges to improve interchanges between modes.
PT3	Regional Passenger Facilities/Station Enhancements: Building on the Phase 1 recommendation, improvements to public transport passenger facilities, focusing on bus stations seeking to improve passenger facilities both in terms of improved quality and in terms of improved accessibility for those with reduced mobility.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
PT2	+	0	+	+	?	?	+	+	?	?	?	?	?	?	?
PT3	+	~	+	+	0	+	+	+	?	?	?	?	?	?	+
Cumulative Passenger Transport Mode Summary	+	?	+	+	?	?	+	+	?	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR PT GROUPING
PT2	<p>This grouping would likely result in positive effects on Climatic Factors and Air Quality SEA objectives due to promoting a modal shift to more sustainable transport options. Positive effects anticipated on Population and Human Health due to an expected increase in sustainable access to essential services and where interchange reduces car use, this is likely to result in a small net decrease in accidents. The significance of effects is dependent on the alternatives being safe, affordable and available for all users.</p> <p>There is potential for negative environmental impacts during construction and operation of the transit options with possible negative effects on Material Assets, the Water Environment, Biodiversity, Cultural Heritage and Landscape and Visual Amenity depending on the design and location of the interventions. It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location specific environmental impacts and mitigation where appropriate.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
PT3	<p>This grouping would likely result in positive effects on Climatic Factors (SEA Objective 1), Air Quality and Population and Human Health as the enhancements seek to encourage modal shift to more sustainable travel means. The grouping is seeking to improve the mobility of passengers and access for all to essential services with a focus on improved safety and reducing barriers for passengers with reduce mobility and creating an attractive public realm. It will have a positive effect on Material Assets (SEA Objective 8) as it seeks to improve the existing transport network planning for future capacity of public transport and seeking to improve interchanges.</p> <p>Depending on the location and nature of facilities and station enhancements there is potential for negative environmental impacts during construction and operation of the improvements, particularly on Biodiversity, Cultural Heritage and Landscape and Visual Amenity. It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>
Cumulative Passenger Transport	<p>The Passenger Transport recommendations are anticipated to result in minor positive effects on SEA Objective 1 (Climatic Factors) as the interventions proposed seek to promote a modal shift to more sustainable transport options and thus will help meet Scotland's wider targets to reduce greenhouse gas emissions.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR PT GROUPING
Mode Summary	<p>The Passenger Transport recommendations are anticipated to result in uncertain effects on SEA Objective 2 (Climatic Factors) as there is no clear relationship between the interventions proposed and the adaptation of the transport network to the predicted impacts of climate change.</p> <p>The Passenger Transport recommendations are anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the interventions proposed seek to promote a modal shift to more sustainable transport options and consequently will help reduce all forms of transport-related air pollution and improve air quality throughout Scotland by, for example, helping to reduce traffic congestion, limiting more polluting vehicles and limiting polluting traffic growth.</p> <p>The Passenger Transport recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed will help improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment by helping to ensure safe and sustainable access for all users to essential services and employment, providing increasing transport choice that meet the needs of the population, allowing for greater journey time reliability, support changing demographics by providing appropriate transport facilities to meet their needs, improving accessibility to open spaces and the path network for physical recreational purposes, and improving access healthcare facilities.</p> <p>The Passenger Transport recommendations are generally anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as it is unclear if the interventions proposed will have a notable effect on noise and vibration associated with the transport network.</p> <p>The Passenger Transport recommendations are generally anticipated to result in neutral effects on SEA Objective 6 (Population and Human Health) as the relationship between the interventions proposed and the promotion / investment in / building and maintenance of infrastructure to support the development of high-quality places is not clear, although there is potential for positive effects on SEA Objective 6 associated with PT3 due to the proposed improvements to the quality of passenger facilities for all users, including those with reduced mobility.</p> <p>The Passenger Transport recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the interventions proposed comprise various improvements / upgrades to existing mobility hubs and public transport facilities, and thereby will potentially improve the safety on the transport network by reducing the likelihood of transport-related road accidents and casualties.</p>



GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR PT GROUPING
	<p>The Passenger Transport recommendations are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as the interventions proposed would help promote and improve the sustainable use of the transport network by encouraging a modal shift to more sustainable transport options.</p> <p>The Passenger Transport recommendations are generally anticipated to result in uncertain effects on SEA Objectives 9 (Material Assets), 10 (the Water Environment), 11 (Biodiversity), 12 (Soil, 13 (Cultural Heritage and 14 (Landscape and Visual Amenity) as there is potential for negative environmental effects during both the construction and operation of several of the interventions proposed, depending on where the interventions are located. It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>For Scenario 2, the magnitude of effects will be less than for Scenario 1.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR PT PACKAGE
Argyll and Bute	<p>The group references included in the Argyll & Bute Section region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran Section region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Edinburgh and SE Scotland	<p>The group references included in the Edinburgh & SE Section region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Forth Valley	<p>The group references included in the Forth Valley region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Glasgow City Region	<p>The group reference included in the Glasgow City region is:</p> <ul style="list-style-type: none"> • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Highlands and Islands	<p>The group references included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
North-East	<ul style="list-style-type: none"> • The group references included in the North-East region are: • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR PT PACKAGE
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Shetland Isles	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • PT2 Mobility Hubs and Multi-modal Interchanges • PT3 Regional Passenger Facilities/Station Enhancements <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

National Rail (RL) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
RL1	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements.
RL2	Corridor Enhancements: Central Belt: Provision of a platform for rail network enhancements within the Central Belt and on cross-border routes. This covers the Central Belt of Scotland (Glasgow-Edinburgh), communities within a commutable distance of these city regions and the two main rail routes for cross-border travel to England (East and West Coast Mainlines).
RL3	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements.
RL4	Rural Rail Connectivity: This would comprise of a number of rail enhancement schemes focused on improving journey times, reliability and resilience on rural railways in Scotland.
RL5	Decarbonisation of the Rail Network: Delivery of a continued, rolling programme of rail decarbonisation, including consideration of batteries and alternative fuel sources, in line with Transport Scotland's Rail Services Decarbonisation Action Plan (DAP).
RL6	High-Speed Rail Development: Investment in measures to complement the introduction of cross border High-Speed Rail, including options which are required to facilitate Scotland to England rail journeys including HS2 services and options which will facilitate new HSR services within Scotland.
RL7a	New Rail Lines: Extending Borders Railway: This grouping considers the case for an extension to the Borders Railway south of Tweedbank into England.
RL7b	New Rail Lines: Re-Opening Freight only for Pax: Upgrade existing freight-only rail infrastructure to passenger standards and re-open them for passenger services.
RL7c	New Rail Lines: Boosting Strategic Regional Connectivity: Provision of new rail lines to support heavy rail operations. Proposed new links have been developed from stakeholder engagement and during initial appraisal.
RL8	New Rail Stations: Development of new rail stations on existing railway corridors (served by current services). These would improve access and connectivity for communities not currently served by rail.

GROUPING REFERENCE	GROUPING DESCRIPTION
RL9	New Rail Sleeper Routes: Introduction of new rail sleeper services between Argyll & Bute, Highland & Islands and London. This would be an addition to the current Caledonian Sleeper Franchise, which currently serves several destinations across Scotland to/from London, including Inverness, Aberdeen, Fort William, Glasgow and Edinburgh.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
RL1	+	~	+	+	?	0	+	+	?	?	?	?	?	?	?
RL2	+	+	+	+	?	0	+	+	?	?	?	?	?	?	?
RL3	+	+	+	+	?	~	0	+	?	?	?	?	?	?	?
RL4	+	0	+	+	?	0	0	+	?	?	?	?	?	?	?
RL5	++	0	+	+	+	0	0	+	?	?	?	?	?	?	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
RL6	+	+	+	+	?	~	+	0	-	-	-	-	-	-	-
RL7a	+	+	+	+	?	?	+	+	?	?	?	?	?	?	?
RL7b	+	0	+	+	?	~	+	+	?	?	?	?	?	?	?
RL7c	+	+	+	+	?	?	+	+	-	-	-	-	-	-	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
RL8	+	+	+	+	?	?	+	+	?	?	?	?	?	?	?
RL9	+	~	+	+	?	0	+	+	?	?	?	?	?	?	?
Cumulative Rail Mode Summary	+	+	+	?	0	+	+	?	?	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
RL1	<p>This grouping is likely to result in positive effects on the SEA objectives for Climatic Factors, Air Quality and Population and Human Health, particularly in relation to the achievement of a reduction in transport related emissions; as it seeks to encourage a modal shift to more sustainable public transport (rail). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p> <p>There are possible positive effects on Water, Biodiversity and Soil as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage.</p> <p>There is also potential for negative environmental impacts during construction and operation of the improvements, particularly on Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity and noise (Population and Human Health SEA Objective 5). It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objective 6, it is unlikely to have a notable effect on the achievement of this objective and is therefore consider neutral. The grouping has no clear relationship to the achievement of SEA Objective 2 at this time.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
RL2	<p>This grouping is likely to result in positive effects on the SEA objectives for Climatic Factors, Air Quality and Population and Human Health (SEA Objectives 1, 3, 4 and 7), particularly in relation to the achievement of a reduction in transport related emissions; as it seeks to encourage a modal shift to more sustainable public transport forms (rail). The grouping contributes to the rail network's resilience to climate change (SEA Objective 2). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>There are possible positive effects on Water, Biodiversity and Soil as a result of a reduction in diffuse pollution on key receptors; however, the significance of effect is uncertain at this stage.</p> <p>There is also potential for negative environmental impacts during construction and operation of the improvements, particularly on Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage, Landscape and Visual Amenity and noise (Population and Human Health SEA Objective 5). It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objective 6, it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
RL3	<p>The grouping is likely to support SEA objectives related to Climatic Factors, Air Quality and Material Assets (SEA Objectives 1,2, 3 and 8) as the enhancements of rail corridor infrastructure may encourage a modal shift to more sustainable transport options due to potential improvements in journey times and network reliability and resilience.</p> <p>The grouping would have a positive effect on Population and Human Health SEA Objective 4 as a result of increasing sustainable access to services for isolated communities in the north of Scotland. However, there is potential for negative effects on Population and Human Health SEA Objective 5 due to potential increases in noise associated with the transport network, although this is dependent on the proximity of noise sensitive receptors.</p> <p>In addition, there is potential for negative environmental impacts during construction and operation of the corridor enhancements with possible conflict with SEA objectives for Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity; for example, through construction of dual tracks or passing loops in a sensitive environment. It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objective 7, it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral. The grouping has no clear relationship to the achievement of SEA</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>Objective 6 at this time.</p> <p>For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.</p>
RL4	<p>The interventions are likely to support SEA objectives related to Climatic Factors, Air Quality and Material Assets (SEA Objective 8) as the enhancements of rail corridor infrastructure may encourage a modal shift to more sustainable transport options due to potential improvements in journey times and network reliability and resilience. The grouping would also have a positive effect on Population and Human Health SEA Objective 4 as a result of increasing sustainable access to services for those living in rural areas.</p> <p>However, there is potential for negative effects on Population and Human Health SEA Objective 5 due to potential increases in noise associated with the transport network although this is dependent on the proximity of noise sensitive receptors.</p> <p>In addition, there is potential for negative environmental impacts during construction and operation of the corridor enhancements with possible conflict with SEA objectives Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity. It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location specific environmental impacts and mitigation where appropriate.</p>
RL5	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality, particularly in relation to the achievement of a reduction in transport related emissions; as it seeks to reduce emissions from rail through decarbonisation / use of alternative fuels (electric, hydrogen). The grouping would also have a positive effect on Material Assets as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health as a result of encouraging sustainable access and a move away from diesel engines to alternatives such as hydrogen or battery which could also result in a beneficial impact on noise and vibration.</p> <p>There are possible positive effects on Water, Biodiversity and Soil as a result of a reduction in diffuse pollution on key receptors; however the significance of effect is uncertain at this stage.</p> <p>There is also potential for negative environmental impacts during construction and operation of the improvements,</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>particularly on Material Assets, Biodiversity, Cultural Heritage and Landscape and Visual Amenity where overhead line equipment is installed for rail electrification. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>It is considered that there would be neutral effects on the remaining SEA objectives.</p>
RL6	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors, Air Quality and Population and Human Health (SEA Objectives 1, 3, 4 and 7), particularly in relation to the achievement of a reduction in transport related emissions; as it seeks to encourage a modal shift to more sustainable transport forms (rail) encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network. The grouping contributes to the rail network's resilience to climate change (SEA Objective 2).</p> <p>Given the scale of works likely to be required to facilitate the grouping, it is likely to result in negative effects on SEA objectives for Material Assets (SEA Objective 9), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity during construction and operation. Depending on the location and nature of such works to facilitate the grouping, there is also potential for negative impacts during construction and operation on noise (Population and Human Health SEA Objective 5). It is therefore recommended that further environmental assessment is undertaken, including Habitats Regulations Appraisal, as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Whilst the grouping is related to SEA Objective 8, it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral. The grouping has no clear relationship to the achievement of SEA Objective 6 at this time.</p>
RL7a	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1, 2 and 3) particularly in relation to the achievement of a reduction in transport related emissions, as it seeks to encourage a modal shift to more sustainable public transport forms (rail) and has the potential to improve access for isolated communities. The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p> <p>There is potential for negative environmental effects during construction and operation of the improvements, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14). There is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
RL7b	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3) particularly in relation to the achievement of a reduction in transport-related emissions; as it seeks to encourage a modal shift to more sustainable public transport forms (rail). The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p> <p>There is potential for negative environmental effects during construction and operation of the improvements, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14). There is also potential for negative effects on Population and Human Health (SEA Objective 5) with an increase in noise and vibration. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Potential negative effects associated with the reduction in freight-only rail routes should also be assessed to identify where any relocation of freight traffic may have a negative effect on environmental receptors.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
RL7c	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1, 2 and 3), particularly in relation to the achievement of a reduction in transport-related</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>emissions; as it seeks to encourage a modal shift to more sustainable transport forms (rail) and has the potential to improve access for isolated communities. It also provides for resilience for the existing transport network through the provision of new routes. The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p> <p>Given the scale of works likely to be required to facilitate the grouping, it is likely to result in negative environmental effects during construction and operation, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14 respectively). Depending on the location and nature of such works to facilitate the grouping, there is also potential for negative effects on noise Population and Human Health (SEA Objective 5) with an increase in noise and vibration during construction and operation. It is therefore recommended that further environmental assessment is undertaken, including Habitats Regulations Appraisal, as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
RL8	<p>This grouping is likely to result in positive effects on the SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1, 2 and 3) particularly in relation to the achievement of a reduction in transport-related emissions; as it seeks to encourage a modal shift to more sustainable public transport forms (rail) and has the potential to improve access for isolated communities. The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network.</p> <p>Depending on the location and nature of the stations and associated facilities, there is potential for negative environmental effects during construction and operation of the improvements, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14). There is also potential for negative effects on Population and Human Health (SEA</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>Objective 5) with an increase in noise and vibration. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
RL9	<p>This grouping is likely to result in positive effects on SEA objectives related to Climatic Factors and Air Quality (SEA Objectives 1 and 3), particularly in relation to the achievement of a reduction in transport-related emissions; as it seeks to encourage a modal shift to more sustainable public transport forms. The grouping would also have a positive effect on Material Assets (SEA Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on Population and Human Health (SEA Objectives 4 and 7) as a result of encouraging sustainable access, increased travel choice and improved connectivity.</p> <p>There is potential for negative environmental effects during construction and operation of the supporting infrastructure, particularly on Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14). It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>The grouping is unlikely to impact on the achievement of Climatic Factors (SEA Objective 2) as it is unlikely to alter the resilience of the transport network given the niche nature of the service.</p> <p>Overall, it is assumed that there would be an uncertain effect in terms of the SEA in both Low and High scenarios.</p>
Cumulative Rail Mode Summary	<p>Overall, the Rail recommendations are anticipated to result in minor positive effects on SEA Objective 1 (Climatic Factors) as several of the interventions proposed involve options to improve the capacity / frequency / reliability / accessibility / connectivity of train services, thereby promoting and facilitating the modal shift to more sustainable transport options i.e. rail. Intervention RL5 will also help reduce emissions from Scotland's transport sector through the decarbonisation of the rail network, thereby helping contribute to the achievement of Scotland's CO2 emissions reduction target of net zero by 2045, and promoting and supporting the best use of clean fuels/technologies.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
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	<p>The Rail recommendations are generally anticipated to result in minor positive effects on SEA Objective 2 as several of the interventions proposed will improve access to and within disadvantaged areas or isolated communities at risk from climate change, prioritise adaptation of transport connections to critical infrastructure that are more vulnerable to the projected impacts of climate change through the proposed improvements to railway resilience, new rail lines and new trail rail stations.</p> <p>The Rail recommendations are generally anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the several of the interventions proposed involve options to improve the capacity / frequency / reliability / accessibility / connectivity of train services, thereby helping to reduce forms of transport-related air pollution and improve air quality by encouraging rail travel. This will also likely help reduce traffic congestion, limit more polluting vehicles, help limit polluting traffic growth and reduce emissions of key air pollutants from transport.</p> <p>The Rail recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as several of the interventions proposed will help improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment. In particular the interventions which involve options to improve existing rail capacity / frequency / reliability / resilience as well as the proposals for new rail lines and rail stations will help ensure safe and sustainable access for all users to essential services and employment, provide increasing transport choice that meet the needs of the population, allow for greater journey time reliability, support changing demographics by providing appropriate transport facilities to meet their needs, improve accessibility to open spaces and the path network for physical recreational purposes, and improve access healthcare facilities.</p> <p>The Rail recommendations are generally anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as while some of the interventions could result in reductions in noise and vibration (e.g. RL5 which involves a move away from diesel engines to alternatives such as hydrogen or battery), several of the other interventions proposed could lead to potential increases in noise associated with the proposed expansions to the rail network, although this is dependent on the proximity of noise sensitive receptors.</p> <p>The Rail recommendations are anticipated to result in neutral effects on SEA Objective 6 (Population and Human Health) as there is no clear link between the majority of the interventions proposed and the promotion / investment in / building / maintenance of infrastructure to support the development of high-quality places.</p> <p>The Rail recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and</p>
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GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RL GROUPING REFERENCE
	<p>Human Health) as the interventions proposed promote the use of the rail network through various enhancements / expansions, and thereby will improve the safety on the transport network by reducing the likelihood of transport-related road accidents and casualties.</p> <p>The Rail recommendations are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as the interventions proposed would help promote and improve the sustainable use of the transport network through the various enhancements / expansions to the rail network.</p> <p>The Rail recommendations are generally anticipated to result in uncertain effects on SEA Objectives 9 (Material Assets), 10 (the Water Environment), 11 (Biodiversity), 12 (Soil, 13 (Cultural Heritage and 14 (Landscape and Visual Amenity) as there is potential for negative environmental effects during both the construction and operation of several of the interventions proposed. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
Argyll and Bute	<p>The group references included in the Argyll and Bute region are:</p> <ul style="list-style-type: none"> • RL5 Decarbonisation of the Rail Network • RL8 New Rail Stations <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • RL2 Corridor Enhancements • RL5 Decarbonisation of the Rail Network • RL8 New Rail Stations <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Edinburgh and SE Scotland	<p>The group reference included in the Edinburgh & SE Section region is:</p> <ul style="list-style-type: none"> • RL1 Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements • RL2 Corridor Enhancements • RL5 Decarbonisation of the Rail Network • RL6 High-Speed Rail Development • RL7b New Rail Lines • RL8 New Rail Stations <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Rail recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involve the development of High-Speed Rail and therefore will not reduce the use of natural resources.</p> <p>Water Environment The Rail recommendations are anticipated to result in negative effects on Water Environment as one of the groups proposed involve the development of High-Speed Rail and may impact watercourses/ waterbodies during construction and operation. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts where appropriate.</p> <p>Biodiversity The Rail recommendations are anticipated to result in negative effects on Biodiversity as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>location-specific environmental impacts.</p> <p>Soil The Rail recommendations are anticipated to result in negative effects on Soil as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts to soil quality in the region. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Cultural Heritage The Rail recommendations are anticipated to result in negative effects on Cultural Heritage as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Landscape and Visual The Rail recommendations are anticipated to result in negative effects on Landscape and Visual as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated areas and views due to operation and construction. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p>
Forth Valley	<p>The group references included in the Glasgow City region are</p> <ul style="list-style-type: none"> • RL1 Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements • RL2 Corridor Enhancements • RL5 Decarbonisation of the Rail Network • RL7b New Rail Lines • RL8 New Rail Station <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Glasgow City Region	<p>The group references included in the Glasgow City region are:</p> <ul style="list-style-type: none"> • RL2 Corridor Enhancements • RL5 Decarbonisation of the Rail Network • RL6 High-Speed Rail Development • RL8 New Rail Stations <p>Key environmental features impacted by the package of interventions:</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>Material Assets The Rail recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involve the development of High-Speed Rail and therefore will not reduce the use of natural resources.</p> <p>Water Environment The Rail recommendations are anticipated to result in negative effects on Water Environment as one of the groups proposed involve the development of High-Speed Rail and may impact watercourses/ waterbodies during construction and operation. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Biodiversity The Rail recommendations are anticipated to result in negative effects on Biodiversity as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Soil The Rail recommendations are anticipated to result in negative effects on Soil as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts to soil quality in the region. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Cultural Heritage The Rail recommendations are anticipated to result in negative effects on Cultural Heritage as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Landscape and Visual The Rail recommendations are anticipated to result in negative effects on Landscape and Visual as one of the groups proposed involves the</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>development of High-Speed Rail which could result in negative effects on designated and undesignated areas and views due to operation and construction.</p> <p>It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p>
Highlands and Islands	<p>The group references included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • RL1 Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements • RL4 Rural Rail Connectivity • RL5 Decarbonisation of the Rail Network • RL8 New Rail Stations <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • RL1 Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements • RL7c New Rail Lines • RL8 New Rail Stations <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • RL5 Decarbonisation of the Rail Network • RL6 High-Speed Rail Development • RL7a New Rail Lines • RL8 New Rail Stations <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets The Rail recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involve the development of High-Speed Rail and therefore will not reduce the use of natural resources.</p> <p>Water Environment The Rail recommendations are anticipated to result in negative effects on Water Environment as one of the groups proposed involve the development of High-Speed Rail and may impact watercourses/ waterbodies during construction and operation. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Biodiversity The Rail recommendations are anticipated to result in negative effects on Biodiversity as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Soil The Rail recommendations are anticipated to result in negative effects on Soil as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts to soil quality in the region. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Cultural Heritage The Rail recommendations are anticipated to result in negative effects on Cultural Heritage as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Landscape and Visual The Rail recommendations are anticipated to result in negative effects on Landscape and Visual as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated areas and views due to operation and construction. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p>
Shetland Isles	No groupings apply to the Shetland Isles region.
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • RL2 Corridor Enhancements • RL5 Decarbonisation of the Rail Network • RL6 High-Speed Rail Development • RL7a New Rail Lines • RL8 New Rail Stations <p>Key environmental features impacted by the package of interventions:</p> <p>Material Assets</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>The Rail recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involve the development of High-Speed Rail and therefore will not reduce the use of natural resources.</p> <p>Water Environment The Rail recommendations are anticipated to result in negative effects on Water Environment as one of the groups proposed involve the development of High-Speed Rail and may impact watercourses/ waterbodies during construction and operation. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Biodiversity The Rail recommendations are anticipated to result in negative effects on Biodiversity as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts on biodiversity, including potential damage to / loss of designated and undesignated wildlife or geological sites. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Soil The Rail recommendations are anticipated to result in negative effects on Soil as one of the groups proposed involves the development of High-Speed Rail and therefore has the potential to result in direct impacts to soil quality in the region. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Cultural Heritage The Rail recommendations are anticipated to result in negative effects on Cultural Heritage as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features / affect key views to and from heritage assets. It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p> <p>Landscape and Visual The Rail recommendations are anticipated to result in negative effects on Landscape and Visual as one of the groups proposed involves the development of High-Speed Rail which could result in negative effects on</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RL PACKAGE
	<p>designated and undesignated areas and views due to operation and construction.</p> <p>It is recommended that further environmental assessment is undertaken as the grouping develops in order to identify potentially significant location-specific environmental impacts.</p>
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • RL1 Options to improve capacity, frequency and reliability of train services, such as, train lengthening and line speed improvements • RL5 Decarbonisation of the Rail Network • RL7c New Rail Lines • RL8 New Rail Stations <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

National Road (RD) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
RD1	South-West Trunk Road and Motorway Network Improvements: This grouping focusses on improving the safety, operation, resilience and reliability of the trunk road network within the South-West of Scotland.
RD3	North-West Trunk Road and Motorway Network Improvements: This grouping focusses on improving the safety, operation, resilience and reliability of the trunk road network within the North-West of Scotland.
RD2	South-East Trunk Road and Motorway Network Improvements: This grouping focusses on improving the safety, operation, resilience and reliability of the trunk road network within the South-East of Scotland.
RD4	North-East Trunk Road and Motorway Network Improvements: This grouping focusses on improving the safety, operation, resilience and reliability of the trunk road network within the North-East of Scotland. Grouping focuses on a bypass of Dundee.
RD5	A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets.
RD6	Changing Road User Behaviour: Implementation of speed enforcement technology and national road safety behaviour change campaigns, education and training initiatives to enable all road users to understand their road safety responsibilities, allowing them to improve their attitudes and behaviours for the safety of themselves and others.
RD7	Grouping focusses on the introduction of HOV (High Occupancy Vehicle) lanes at various locations across Scotland.

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
RD1	-	+	-	?	0	?	+	-	-	?	?	?	?	?	?
RD2	--	0	0	?	0	~	+	-	-	?	?	?	?	?	?
RD3	-	0	-	?	-	0	+	-	-	?	?	?	?	?	?
RD4	-	0	-	?	?	~	+	-	-	?	?	?	?	?	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
RD4 (Dundee bypass)	--	+	--	?	0	+	+	-	-	?	?	?	?	?	?
RD5	++	0	++	+	+	~	0	++	++	0	0	0	0	0	+
RD6	?	0	?	+	?	~	++	0	0	0	0	0	0	0	0
RD7	+	0	?	+	?	~	+	0	?	?	?	?	?	?	?

GROUPING REFERENCE	SEA OBJECTIVES ASSESSMENT SCORES														
	1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	CUMULATIVE SCORE
Cumulative Road Mode Summary	-	0	-	?	?	~	+	-	-	?	?	?	?	?	?

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
RD1	<p>The junction improvement, realignment / widening, overtaking opportunities, bypass and dualling options within this grouping would result in potential positive effects on Population and Human Health (SEA Objective 7) due to improved safety of the trunk road network in the South-West.</p> <p>Bypass and / or dualling options could result in negative effects on Climate Change, Air Quality and Material Assets SEA objectives (SEA Objectives 1, 3 and 8) as they have the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated emissions. Junction improvements, realignment / widening and overtaking opportunities are not anticipated to have a notable impact on traffic volumes or mode share and subsequently transport-based emissions. In addition, any opportunity to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>Significant quantities of materials and construction related trips would be required for bypasses and dualling schemes in particular, and overtaking opportunities and realignment / widening to a lesser extent depending on the complexity and scale of individual schemes. Depending on the source and type of materials/natural resources used, there is the potential for negative impacts on Material Assets (SEA Objective 9). There is though the potential opportunity for schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term with associated positive impacts.</p> <p>Any increase in the number of vehicles using the trunk road network would also cause increases in noise, although there is the potential to mitigate noise impacts and a bypass also has the potential to reduce traffic from communities and as such minimise noise and air pollution exposure at a local level. As such, a neutral impact for bypasses has been assessed for the Population and Human Health (SEA Objective 5) as is the case for junction improvements, realignment / widening and overtaking opportunities which are not expected to increase traffic volumes while dualling is anticipated to have a negative impact.</p> <p>An uncertain impact is assessed in relation to Population and Human Health (SEA Objective 4), as although the options within this grouping would support connectivity to employment and other services this would be</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>primarily for road-based transport. The trunk road network is, however, important to the operation of local bus services as well as inter-urban services in the South-West and provision for non-motorised users would be a consideration as part of the design of individual options to address any specific safety and/or severance challenges. The network is also important in providing connections to other regions, for example through providing access to ports and key freight centres.</p> <p>There is the potential for negative environmental impacts during the construction and operation of the types of options within this grouping on SEA objectives related to the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). However, the scale of the impacts is uncertain at this stage and the location of the options will have a strong influence on this, particularly for junction improvements, realignment / widening and overtaking opportunities.</p> <p>It is recommended that further environmental assessment is undertaken as individual options are progressed through the design and development process in order to assess the location and scale of specific environmental effects as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be recommended to consider how to protect and enhance landscape, drainage, amenity, biodiversity and cultural heritage. It is also recommended that further cumulative impact assessment and environmental mitigation and enhancement measures proposed can be embedded in any final options.</p> <p>Overall, the indirect/direct/synergistic and cumulative environmental effects are scored uncertain for this grouping as there is the potential for some interventions to detract from SEA objectives with the effects determined by the location, complexity, scale and design of individual schemes. It is, however, expected that bypasses and dualling options will have increased potential for significant environmental impact compared to other types of options and more so in the high travel demand scenario due to the potential for these types of options to increase road-based trips compared to the other types of options within this grouping. These types of options are also of likely to be of a greater scale involving more land take and associated construction activities.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
RD2	The junction improvement, realignment / widening, overtaking opportunities, bypass and dualling options

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>within this grouping would result in potential positive effects on Population and Human Health (SEA Objective 7) due to improved safety of the trunk road network in the North-West.</p> <p>Bypass and / or dualling options could result in negative effects on Climate Change, Air Quality and Material Assets SEA objectives (SEA Objectives 1, 3 and 8) as they have the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated emissions. Junction improvements, realignment / widening and overtaking opportunities are not anticipated to have a notable impact on traffic volumes or mode share and subsequently transport-based emissions. In addition, any opportunity to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>Significant quantities of materials and construction related trips would be required for bypasses and dualling schemes in particular, and overtaking opportunities and realignment / widening to a lesser extent depending on the complexity and scale of individual schemes. Depending on the source and type of materials/natural resources used, there is the potential for negative impacts on Material Assets (SEA Objective 9). There is though the potential opportunity for schemes to improve surface conditions and alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term with associated positive impacts.</p> <p>Any increase in the number of vehicles using the trunk road network would also cause increases in noise, although there is the potential to mitigate noise impacts and a bypass also has the potential to reduce traffic from communities and as such minimise noise and air pollution exposure at a local level. As such, a neutral impact for bypasses has been assessed for the Population and Human Health (SEA Objective 5) as is the case for junction improvements, realignment / widening and overtaking opportunities which are not expected to increase traffic volumes while dualling is anticipated to have a negative impact.</p> <p>An uncertain impact is assessed in relation to Population and Human Health (SEA Objective 4), as although the options within this grouping would support connectivity to employment and other services this would be primarily for road-based transport. The trunk road network is, however, important to the operation of local bus services as well as inter-urban services in the North-West and provision for non-motorised users would be a</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>consideration as part of the design of individual options to address any specific safety and/or severance challenges. The network is also important in providing connections to Uig on Skye and other ferry services on the mainland which provide access to the Inner and Outer Hebrides.</p> <p>There is the potential for negative environmental impacts during the construction and operation of the types of options within this grouping on SEA objectives related to the Water Environment, Biodiversity, Soil, Cultural Heritage, and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14 respectively). However, the scale of the impacts is uncertain at this stage, particularly for junction improvements, realignment / widening and overtaking opportunities.</p> <p>It is recommended that further environmental assessment is undertaken as individual options are progressed through the design and development process in order to assess the location and scale of specific environmental effects as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be recommended to consider how to protect and enhance landscape, drainage, amenity, biodiversity and cultural heritage. It is also recommended that further cumulative impact assessment and environmental mitigation and enhancement measures proposed can be embedded in any final options.</p> <p>Overall, the indirect/direct/synergistic and cumulative environmental effects are scored uncertain for this grouping as there is the potential for some interventions to detract from SEA objectives with the effects determined by the location, complexity, scale and design of individual schemes. It is, however, expected that bypasses and dualling options will have increased potential for significant environmental impact compared to other types of options and more so in the high travel demand scenario due to the potential for these types of options to increase road-based trips compared to the other types of options within this grouping. These types of options are also of likely to be of a greater scale involving more land take and associated construction activities.</p>
RD3	<p>This grouping would result in potential positive effects on population and human health SEA objective 7 due to improved safety on the road network.</p> <p>However, the interventions are likely to result in negative effects on Climate Change, Air Quality and Material Assets SEA objectives as trunk road improvements could potentially increase the number of unsustainable</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>private vehicles on the road network and associated emissions. Increased vehicles would also cause increases in noise associated with the transport network, although this is dependent on the proximity of noise sensitive receptors.</p> <p>An uncertain impact is assessed in relation to Population and Human Health SEA Objective 4, as although the grouping would improve journey time reliability and accessibility, this would be for road transport and as such would not be considered to increase sustainable access.</p> <p>Depending on the source and type of materials/natural resources used to construct the enhancements, there is potential for negative impacts on Material Assets SEA Objective 9. As such, it is recommended that further environmental assessment be undertaken as the option develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>It is recommended that further environmental assessment be undertaken as the option is developed in order to assess location specific potentially significant environmental effects and to identify appropriate mitigation where required.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
RD4	<p>This grouping would result in potential positive effects on population and human health SEA Objective 7 due to improved safety on the road network.</p> <p>However, the grouping is likely to result in negative effects on Climate, Air Quality and Material Assets SEA objectives as junction improvements could potentially increase the number of unsustainable private vehicles on the road network and associated emissions. Increased vehicles would also cause increases in noise associated with the transport network, although this is dependent on the proximity of noise sensitive receptors.</p> <p>An uncertain impact is assessed in relation to Population and Human Health SEA Objective 4, as although the grouping would improve journey time reliability and accessibility, this would be for road transport and as such would not be considered to increase sustainable access. Positive effects could be experienced where complementary bus priority and active travel provisions are introduced.</p> <p>Depending on the source and type of materials/natural resources used to construct the enhancements, there</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>is likely to be negative impacts on Material Assets SEA Objective 9. As such, it is recommended that further environmental assessment be undertaken as the option develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>It is recommended that further environmental assessment be undertaken as the option is developed in order to assess location specific potentially significant environmental effects and to identify appropriate mitigation where required.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
RD4 (Dundee bypass)	<p>The grouping is likely to support Population and Human Health SEA Objective 7 due to improved safety on the transport network.</p> <p>However, the interventions are likely to result in significant negative effects on Climatic Factors and Air Quality SEA objectives and negative effects on the Material Assets SEA objectives as the construction of a bypass could potentially increase the number of unsustainable private vehicles on the road network and associated emissions. Significant quantities of material resources and associated delivery trips would also be required for road construction. Increased vehicles would also cause increases in noise associated with the transport network, however the grouping has the potential to remove traffic from urban areas and as such minimise noise and air pollution at a local level in the areas being bypassed. As such, a neutral impact has been assessed for the Population and Human Health SEA Objective 5.</p> <p>An uncertain impact is assessed in relation to Population and Human Health SEA Objective 4, as although the grouping would improve journey time reliability and accessibility, this would be for road transport and as such would not be considered to increase sustainable access. Uncertain impacts are also assessed for SEA Objectives 10-14 and as such it is recommended that further environmental assessment be undertaken as the option is developed in order to assess location specific potentially significant environmental effects and to identify appropriate mitigation where required.</p> <p>Depending on the source and type of materials/natural resources used for construction, there is potential for negative impacts on Material Assets SEA Objective 9. As such, it is recommended that further environmental assessment be undertaken as the option develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	For Scenario 2, the magnitude of effects would be the same as for Scenario 1.
RD5	<p>The grouping is likely to result in Significant Positive Effects on Climatic Factors, Air Quality and Material Assets SEA Objectives as the interventions would support the reduction of emissions from the transport sector and promote the sustainable use of transport network, in addition to reducing the use of natural resources.</p> <p>Minor Positive Effects are assessed in relation to Population and Human Health SEA Objectives 4 and 5, as the interventions would both improve sustainable access to essential services, employment and the natural environment, in addition to reducing the noise associated with vehicle transport due to electric vehicle technology.</p> <p>Neutral impacts are assessed in relation to Climatic Factors (SEA Objective 2), Population and Human Health (SEA Objective 7) and SEA Objectives 10-14, as the grouping is related, however it is not expected to contribute to the achievement of these objectives.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
RD6	<p>The interventions are likely to result in Significant Positive Effects upon Population and Human Health SEA Objective 7 due to improvements in safety on the road network.</p> <p>Uncertain effects have been assessed in relation to Climatic Factors and Air Quality SEA Objectives 1 and 3, as it is uncertain whether the proposed interventions will result in reductions in transport-based emissions due to changes in driver behaviour.</p> <p>Neutral effects are assessed in relation to Climatic Factors (SEA Objective 2) and both Material Assets objectives as the interventions are not anticipated to adapt the transport network to the effects of climate change, promote and improve the sustainable use of the transport network, or reduce the use of natural resources. In addition, Neutral effects are assessed in relation to SEA Objectives 10-14 as the interventions would not cause any significant effects upon these environmental topics.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
RD7	This grouping would result in potential positive effects on Population and Human Health SEA Objectives 4

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>and 7 due to improved safety on the road network and improved reliability and opportunities for sustainable accessibility via public transport vehicles to reduce the number of vehicles in some locations. In addition, positive impacts are assessed in relation to Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) as the grouping seeks to reduce congestion vehicle numbers and encourage car users to switch to public transport methods, and as such reducing associated vehicle-derived greenhouse gas emissions.</p> <p>Neutral effects have been assessed in relation to Climatic Factors (SEA Objective 2) and Material Assets (SEA Objective 8) as the grouping is not anticipated to adapt the transport network to the effects of climate change or promote and improve the sustainable use of the transport network. Neutral effects have also been assessed for Air Quality (SEA Objective 3) as, although the overall number of vehicles could reduce in some areas, the reallocation of road space could increase congestion on both the trunk and local road networks.</p> <p>The extent to which HOV lanes will reallocate existing road space or additional lanes will be used is not known and as such uncertain impacts are assessed for Material Assets (SEA Objective 9). As such, it is recommended that further environmental assessment be undertaken as the option develops to maximise the reallocation of existing road space, adhering with circular economy principles.</p> <p>In relation to the Uncertain effects assessed for SEA Objectives 10 to 14 (the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity), it is recommended that further environmental assessment be undertaken as the option is developed in order to assess location specific potentially significant environmental effects and to identify appropriate mitigation where required.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>
Cumulative Road Mode Summary	<p>Overall, the Road recommendations are anticipated to result in minor negative effects on SEA Objective 1 (Climatic Factors) as several of the interventions proposed have the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>The Road recommendations are generally anticipated to result in neutral effects on SEA Objective 2 as the majority of the intervention proposed are unlikely to have a notable effect on adapting the transport network to the predicted effects of climate change.</p> <p>The Road recommendations are anticipated to result in minor negative effects on SEA Objective 3 (Air Quality) as several of the interventions proposed have the potential to increase the number of vehicles on the</p>

GROUPING REFERENCE	NATIONAL ASSESSMENT SUMMARY FOR RD GROUPING
	<p>trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>The Road recommendations are generally anticipated to result in uncertain effects on SEA Objectives 4 and 5 (both Population and Human Health) as while some of the interventions may improve access to essential services, employment and the natural environment, this access will be achieved via the road network and therefore will not be sustainable. In addition, the various interventions proposed have the potential to both reduce and maintain / increase noise and vibration levels.</p> <p>The Road recommendations are anticipated to result in negligible effects on SEA Objective 6 (Population and Human Health) as there is no clear link between the majority of the interventions proposed and the promotion / investment in / building / maintenance of infrastructure to support the development of high-quality places.</p> <p>The Road recommendations are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the interventions proposed focus on improving safety on the road network.</p> <p>The Road recommendations are anticipated to result in minor positive effects on SEA Objectives 8 and 9 (both Material Assets) as several of the interventions proposed may require significant quantities of materials, and construction related trips would be required for bypasses and dualling schemes in particular, and overtaking opportunities and realignment / widening to a lesser extent depending on the complexity and scale of individual schemes. The significance of any effects will depend on the source and type of materials / natural resources used. However, it should also be noted that there is also potential opportunity for schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term with associated positive impacts.</p> <p>The Road recommendations are generally anticipated to result in uncertain effects on the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12,13 and 14 respectively) as there is potential for negative environmental effects during both the construction and operation of several of the interventions proposed. However, the scale of the impacts is uncertain at this stage, particularly for junction improvements, realignment / widening and overtaking opportunities.</p> <p>For Scenario 2, the magnitude of effects would be the same as for Scenario 1.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
Argyll and Bute	<p>The group references included in the Argyll and Bute region are:</p> <ul style="list-style-type: none"> • RD3 North-West Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p> <p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Population and Human Health The Road recommendations are anticipated to result in minor negative effects on Population and Human Health as one of the groups proposed may result in an increase in noise and vibration during construction and operation.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the North-West Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
Ayrshire and Arran	<p>The group references included in the Ayrshire & Arran region are:</p> <ul style="list-style-type: none"> • RD1 South-West Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p> <p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
	<p>increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the South-West Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
Edinburgh and SE Scotland	<p>The group reference included in the Edinburgh & SE Section region is:</p> <ul style="list-style-type: none"> • RD2 South-East Trunk Road and Motorway Network Improvements • RD4 North-East Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government’s net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions: Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as two of the proposed groups involves the improvement of the South-East Trunk Road, North-East Trunk Road and Motorway Network Improvements which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
Forth	The group reference included in the Forth Valley region is:

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
Valley	<ul style="list-style-type: none"> • RD2 South-East Trunk Road and Motorway Network Improvements • RD3 North-West Trunk Road and Motorway Network Improvements • RD4 North-East Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p> <p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as two of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Population and Human Health The Road recommendations are anticipated to result in minor negative effects on Population and Human Health as one of the groups proposed may result in an increase in noise and vibration during construction and operation.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as a number of the proposed groups involves the improvement of the South-East Trunk Road, North-East Trunk Road, North-West Trunk Road and Motorway Network Improvements which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
Glasgow City Region	<p>The group reference included in the Glasgow City region is:</p> <ul style="list-style-type: none"> • RD1 South-West Trunk Road and Motorway Network Improvements • RD2 South-East Trunk Road and Motorway Network Improvements • RD3 North-West Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
	<p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as a number of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Population and Human Health The Road recommendations are anticipated to result in minor negative effects on Population and Human Health as one of the groups proposed may result in an increase in noise and vibration during construction and operation.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as a number of the proposed groups involves the improvement of the South-West and Motorway Network Improvements which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
<p>Highlands and Islands</p>	<p>The group references included in the Highlands & Islands region are:</p> <ul style="list-style-type: none"> • RD3 North-West Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government’s net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p> <ul style="list-style-type: none"> • Climatic Factors • The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions. • Air Quality • The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
	<p>potentially reducing air quality.</p> <ul style="list-style-type: none"> • Population and Human Health • The Road recommendations are anticipated to result in minor negative effects on Population and Human Health as one of the groups proposed may result in an increase in noise and vibration during construction and operation. • Material Assets • The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the North-West Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.
North-East	<p>The group references included in the North-East region are:</p> <ul style="list-style-type: none"> • RD4 North-East Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Key environmental features impacted by the package of interventions:</p> <ul style="list-style-type: none"> • Climatic Factors • The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions. • Air Quality • The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality. • Material Assets • The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the North-East Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • RD2 South-East Trunk Road and Motorway Network Improvements

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
	<ul style="list-style-type: none"> • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government’s net zero targets • RD6 Changing Road User Behaviour <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the South-East Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>
Shetland Isles	<ul style="list-style-type: none"> • The group references included in the Shetland Isles region are: • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government’s net zero targets • RD6 Changing Road User Behaviour • No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • RD1 South-West Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government’s net zero targets • RD6 Changing Road User Behaviour <p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the South-West Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR RD PACKAGE
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • RD4 North-East Trunk Road and Motorway Network Improvements • RD5 A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Government's net zero targets • RD6 Changing Road User Behaviour <p>Climatic Factors The Road recommendations are anticipated to result in negative effects on Climatic Factors as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p> <p>Air Quality The Road recommendations are anticipated to result in minor negative effects on Air Quality as one of the groups proposed has the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p> <p>Material Assets The Road recommendations are anticipated to result in negative effects on Material Assets as one of the groups proposed involves the improvement of the North-East Trunk Road and Motorway Network which may require a large amount of material and therefore will not reduce the use of natural resources. The group also does not support / include any interventions focusing on sustainability / travelling using different modes / planning for future capacity.</p>

National Technology (TY) Mode

GROUPING REFERENCE	GROUPING DESCRIPTION
TY6	Incident Management Software (IMS) Upgrade: Incident Management System replacement to maintain the current level of service across the trunk road network.
TY7	Control Centre of the Future: This would involve investment enhancement of the capabilities of the Traffic Scotland National Control Centre, and how to plan for the future renewal and replacement of equipment, systems and services to maximise network operations.
TY8	Intelligent Transport Systems (ITS) Roadside Infrastructure: Investment in ITS which helps to ensure the availability, resilience, safety and quality of the transport infrastructure that is used to actively manage and control traffic during incidents and hazardous weather conditions.
TY12	Integrated Public Transport Ticketing: Integration of ticketing across public transport (bus, rail and ferries).

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
TY6	1	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0
TY6	2	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0
TY7	1	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0
TY7	2	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
TY8	1	?	+	?	+	0	~	+	+	?	0	0	0	0	0	0
TY8	2	?	+	?	+	0	~	+	+	?	0	0	0	0	0	0
TY12	1	+	0	+	+	0	~	0	++	0	0	0	0	0	0	0
TY12	2	0	+	0	+	?	~	+	+	?	?	?	?	?	?	?

GROUPING REFERENCE	SCENARIO (1 OR 2)	SEA OBJECTIVES ASSESSMENT SCORES														CUMULATIVE SCORE
		1. CLIMATE MITIGATION	2. CLIMATE ADAPTATION	3. AIR QUALITY	4. PHH QUALITY OF LIFE	5. PHH NOISE AND VIBRATION	6. PHH HIGH QUALITY PLACES	7. PHH SAFETY	8. MATERIAL ASSETS SUSTAINABILITY	9. MATERIAL ASSETS NATURAL RESOURCES	10. WATER ENVIRONMENT	11. BIODIVERSITY	12. SOIL	13. CULTURAL HERITAGE	14. LANDSCAPE AND VISUAL AMENITY	
Cumulative Technology Mode Summary	1	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0
Cumulative Technology Mode Summary	2	?	+	?	+	0	~	+	+	~	0	0	0	0	0	0

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
TY6	1	<p>The grouping is likely to support some of the SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) and Climatic Factors (SEA Objective 2) due to improved journey reliability and safety and resilience of the road network through management during incidents or severe weather events. Minor positive effects are also assessed in relation to the Material Assets SEA objective 8, due to the improvements in transport technology.</p> <p>Uncertain effects have been assessed in relation to SEA objectives Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) as it is uncertain whether the grouping would result in a reduction or increase in the emissions of the transport system. Although improvements may result in the smoother flow of traffic and reduction of congestion, this may encourage greater use of the transport network generally.</p> <p>It is considered that there would be neutral or negligible effects on the remaining SEA objectives as the grouping is not directly related to them. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to Population and Human Health (SEA Objective 5), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14).</p>
TY6	2	For the High Scenario, the magnitude of effects will be less than for the Low Scenario.

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
TY7	1	<p>The grouping is likely to support SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) and Climatic Factors (SEA Objective 2) due to improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and severe weather incidents on the trunk road network. Minor positive effects are also assessed in relation to Material Assets (SEA Objective 8), due to improvements in transport technology.</p> <p>Uncertain effects have been assessed in relation to SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) as it is uncertain whether the grouping would result in a reduction or increase in the emissions of the transport system generally and the extent of modal shift.</p> <p>It is considered that there would be neutral or negligible effects on the remaining SEA objectives as the grouping is not directly related to them. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to Population and Human Health (SEA Objective 5), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14).</p>
TY7	2	For the High Scenario, the magnitude of effects will be less than for the Low Scenario.

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
TY8	1	<p>The grouping is likely to support SEA objectives related to Population and Human Health (SEA Objectives 4 and 7) and Climatic Factors (SEA Objective 2) due to improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and severe weather incidents on the trunk road network. Minor positive effects are also assessed in relation to Material Assets (SEA Objective 8), due to improvements in transport technology.</p> <p>Uncertain effects have been assessed in relation to SEA objectives for Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) as it is uncertain whether the grouping would result in a reduction or increase in the emissions of the transport system generally and the extent of modal shift. Uncertain effects have also been assessed in relation to Material Assets (SEA Objective 9) as the design/extent of new roadside infrastructure is unknown at this stage.</p> <p>It is considered that there would be neutral or negligible effects on the remaining SEA objectives as the grouping is not directly related to them. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to Population and Human Health (SEA Objective 5), the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 10, 11, 12, 13 and 14).</p>
TY8	2	Findings the same as scenario 1 however impact would be reduced with a decrease in travel

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
TY12	1	<p>The grouping is likely to support SEA objectives related to Climatic Factors (SEA Objective 1) and Air Quality (SEA Objective 3) as Integrated Public Transport Ticketing is likely to encourage more people to use public transport methods which are more sustainable methods of travel. In addition, the grouping supports the Population and Human Health SEA Objective 4, as Integrated Ticketing would enable greater accessibility to essential services, employment and the natural environment.</p> <p>A significant positive effect is assessed for Material Assets SEA objective 8 as the grouping would promote and improve the sustainable use of the transport network through integrated ticketing.</p> <p>It is considered that there would be neutral or negligible effects on the remaining SEA objectives as the grouping is unrelated. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to Population and Human Health (SEA 5 and 7), Material Assets, the Water Environment, Biodiversity, Soil, Cultural Heritage and Landscape and Visual Amenity (SEA Objectives 9, 10, 11, 12, 13 and 14).</p>
TY12	2	<p>For the High Scenario, the magnitude of effects will be less than for the Low Scenario.</p>
Cumulative Technology Mode Summary	1	<p>Overall, the Technology recommendations are anticipated to result in uncertain effects on SEA Objective 1 (Climatic Factors) as it is uncertain whether the majority of the interventions proposed would result in a reduction or increase in the emissions of the transport system generally, and the extent of the modal shift that these interventions would encourage.</p> <p>Overall, the Technology recommendations are anticipated to result in minor positive effects on SEA Objective 2 (Climatic Factors) as the majority of the interventions proposed are expected to result in improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and severe weather incidents on the trunk road network, thereby helping adapt the transport network to the predicted effects of climate change.</p> <p>The Technology recommendations are anticipated to result in uncertain effects on SEA Objective 3 (Air Quality) as it is uncertain whether the proposed interventions would result in a reduction or increase in the emissions of the transport system or, consequently, any improvements in air quality</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
		<p>across Scotland.</p> <p>The Technology recommendations are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as each of the interventions proposed are likely to improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment by ensuring safe and sustainable access for all users to essential services and employment, providing increasing transport choice that meets the needs of the population, supporting changing demographics by providing appropriate transport facilities to meet their needs, allowing for greater journey time reliability, and improving access to healthcare facilities.</p> <p>The Technology recommendations are anticipated to result in neutral effects on SEA Objective 5 (Population and Human Health) as the interventions proposed are not expected to have any notable effect on noise and vibration levels associated with the transport network.</p> <p>The Technology recommendations are anticipated to result in negligible effects on SEA Objective 6 (Population and Human Health) as these recommendations are not considered to be directly linked to the promotion of / investment in / building or maintenance of infrastructure to support the development of high-quality places.</p> <p>The Technology recommendations are generally anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as the proposed interventions are expected to result in improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and severe weather incidents on the trunk road network, thereby resulting in improved safety on the transport network including potential reductions in the likelihood of transport-related road accidents and casualties.</p> <p>The Technology recommendations are generally anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) due to improvements in transport technology associated with the proposed interventions which are expected to promote and improve the sustainable use of the transport network.</p>

GROUPING REFERENCE	SCENARIO (1 OR 2)	NATIONAL ASSESSMENT SUMMARY FOR TY GROUPING
		<p>The Technology recommendations are generally anticipated to result in negligible effects on SEA Objective 9 (Material Assets) as the proposed interventions are generally not considered to be directly related to the reduction in use of natural resources.</p> <p>The Technology recommendations are anticipated to result in neutral effects on SEA Objectives 10 (Water Environment), 11 (Biodiversity), 12 (Soil), 13 (Cultural Heritage) and 14 (Landscape and Visual Amenity) as the proposed interventions are not considered to result any negative effects on the achievement of these SEA objectives.</p>
Cumulative Technology Mode Summary	2	For Scenario 2, the magnitude of effects will be less than for Scenario 1.

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR TY PACKAGE
Argyll and Bute	<p>The group references included in the Argyll & Bute Section region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR TY PACKAGE
Ayrshire and Arran	<ul style="list-style-type: none"> • The group references included in the Ayrshire & Arran Section region are: • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing • No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.
Edinburgh and SE Scotland	<p>The group references included in the Edinburgh & SE Section region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Forth Valley	<p>The group references included in the Forth Valley region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR TY PACKAGE
Glasgow City Region	<p>The group references included in the Glasgow City region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Highlands and Islands	<ul style="list-style-type: none"> • The group references included in the Highlands & Islands region are: • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing • No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.
North-East	<ul style="list-style-type: none"> • The group references included in the North-East region are: • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing • No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.

REGION	REGIONAL DIFFERENCES IN ASSESSMENT FOR TY PACKAGE
Borders	<p>The group references included in the Borders region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Shetland Isles	<ul style="list-style-type: none"> • The group references included in the Borders region are: • TY7 Control Centre of the Future • TY12 Integrated Public Transport Ticketing • No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.
South-West	<p>The group references included in the South-West region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>
Tay Cities	<p>The group references included in the Tay Cities region are:</p> <ul style="list-style-type: none"> • TY6 Incident Management Software (IMS) Upgrade • TY7 Control Centre of the Future • TY8 Intelligent Transport Systems (ITS) Roadside Infrastructure • TY12 Integrated Public Transport Ticketing <p>No key environmental features within the SEA topics in the region have been identified as being negatively impacted by the package.</p>

SEA Topics – National Summaries

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>1. Climatic Factors (GHG)</p>	<p>Overall, most of the recommendations (Freight, Metro, Passenger Transport, Rail) are anticipated to result in minor positive effects on SEA Objective 1 (Climatic Factors) as the interventions proposed seek to promote a modal shift to more sustainable transport options and thus will help meet Scotland's wider targets to reduce greenhouse gas emissions. Additionally, intervention RL5 (Rail) will also help reduce emissions from Scotland's transport sector through the decarbonisation of the rail network, thereby helping contribute to the achievement of Scotland's CO₂ emissions reduction target of net zero by 2045, and promoting and supporting the best use of clean fuels/technologies.</p> <p>The Island Connectivity and Multi Modal recommendations are anticipated to result in uncertain effects on SEA Objective 1 (Climatic Factors) as the various interventions are not likely to contribute to reducing emissions from Scotland's transport sector by reducing the need to travel and encouraging modal shift and help meet Scotland's wider targets to reduce greenhouse gas emissions. In addition, some of the new fixed links proposed (Island Connectivity) have the potential to result in an increase in motorised traffic to and from the mainland, potentially resulting in increases in emissions in turn. However, intervention IC4 (Island Connectivity) is likely to result in major positive effects on SEA Objective 1 as the decarbonisation of the CHFS and NIFS ferry networks will directly contribute to the achievement of Scotland's CO₂ emissions reduction target of net zero by 2045, promote and support the best use of clean fuels / technologies, and promote and facilitate modal shift to more sustainable transport options.</p> <p>The Road recommendations are anticipated to result in minor negative effects on SEA Objective 1 (Climatic Factors) as several of the interventions proposed have the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>2. Climatic Factors (Adaptation)</p>	<p>Overall, just under half of the recommendations (Island Connectivity, Metro, Multi modal, Rail, technology) are anticipated to result in minor positive effects on SEA Objectives 2 (Climatic Factors) as the interventions proposed encourage a modal shift to more sustainable transport options, thereby helping reduce emissions from Scotland's transport sector and meet Scotland's wider targets to reduce greenhouse gas emissions, and helping adapt the transport network to the predicted effects of climate change. The interventions involve prioritisation of adaptation of transport connections to critical infrastructure, islands and coastal communities that are more vulnerable to the projected impacts of climate change through the proposed improvements to railway resilience, new rail lines, new trail rail stations and new ferry connections. Interventions IC2 and IC4 (Island Connectivity) are anticipated to result in uncertain and negligible effects on SEA Objective 2 respectively as these interventions will not necessarily adapt the ferry network to the predicted effects of climate change. However, the new ferry routes proposed as part of IC2 could potentially improve access to / within isolated island communities at risk from climate change.</p> <p>Some of the recommendations (Active Travel, Behaviour change and Bus) are anticipated to result in negligible effects on SEA Objective 2 (Climatic Factors) as the majority of the interventions proposed will not directly help to adapt the transport network to the predicted effects of climate change.</p> <p>The Passenger Transport recommendations are anticipated to result in uncertain effects on SEA Objective 2 (Climatic Factors) as there is no clear relationship between the interventions proposed and the adaptation of the transport network to the predicted impacts of climate change.</p> <p>The Road and the Freight recommendations are generally anticipated to result in neutral effects on SEA Objective 2 as the majority of the intervention proposed are unlikely to have a notable effect on adapting the transport network to the predicted effects of climate change. However, intervention FT4 (Freight) is anticipated to have a minor positive effect on SEA Objective 2 as this intervention aims to provide improved resilience on the road network in Scotland for the freight industry e.g. strengthening bridges.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
3. Air quality	<p>Overall, most of the recommendations (Active Travel, Behaviour Change, Bus, Freight, Metro, Passenger Transport, Rail) are anticipated to result in minor positive effects on SEA Objective 3 (Air Quality) as the interventions proposed seek to promote a modal shift to more sustainable transport options and consequently will help reduce all forms of transport-related air pollution and improve air quality throughout Scotland by, for example, helping to reduce traffic congestion, limiting more polluting vehicles, limiting polluting traffic growth, decarbonisation of freight deliveries and improving the modal shift of freight from road to rail.</p> <p>Island Connectivity, Multi Modal and Technology recommendations are anticipated to result in uncertain effects on SEA Objective 3 (Air Quality) as it is uncertain whether the proposed interventions would result in a reduction or increase in the emissions of the transport system or, consequently, any improvements in air quality across Scotland. Furthermore, island Connectivity proposals have the potential to result in increases in motorised traffic to and from the mainland, thereby potentially resulting in increases in emissions and reductions in air quality. However, interventions IC1c, IC1d, IC1e, IC1g and IC1h also involve upgrades to / replacement of vessels which could potentially result in reductions in air pollution and contribute to improvements in air quality. Intervention IC4 is anticipated to result in major positive effects on SEA Objective 3 as the decarbonisation of the CHFS and NIFS ferry networks will help reduce emissions of key air pollutants (NO_x, particulates, SO₂) from ferry transport, help to limit polluting traffic growth, and potentially limit more polluting vehicles in sensitive areas.</p> <p>The Road recommendations are anticipated to result in minor negative effects on SEA Objective 3 (Air Quality) as several of the interventions proposed have the potential to increase capacity for the number of vehicles on the trunk road network thus increasing associated transport emissions and potentially reducing air quality.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>4. Population & Human Health (Quality of life)</p>	<p>A significant majority of recommendations (Active Travel, Behaviour Change, Bus, Island Connectivity, Metro, Multi Modal, Passenger Transport, Rail, Technology) are anticipated to result in minor positive effects on SEA Objective 4 (Population and Human Health) as the interventions proposed will improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment through improved access to more sustainable forms of transport, provision of active travel connections and related interventions between villages and nearby towns/regional centres, and improvements to existing roads for the purpose of active travel (e.g. improved crossing points, surfacing, lighting etc.). The decarbonisation of the bus network will also potentially encourage sustainable access to the natural and historic environment and ensure safe and sustainable access for all users to essential services and employment.</p> <p>The Freight recommendations are anticipated to result in neutral effects on SEA Objective 4 (Population and Human Health) as the relationship between the majority of the interventions and the achievement of SEA Objective 4 (i.e. improvements in quality of life and human health and increases in sustainable access to essential services, employment and the natural environment) is uncertain/unclear. However, it should be noted that several of the interventions proposed (including FT3, FT4 and FT6) are anticipated to result in minor positive effects on SEA Objective 4 largely owing to these interventions ensuring safe and sustainable access to essential services and employment and allowing for greater journey time reliability.</p> <p>The Road recommendations are generally anticipated to result in uncertain effects on SEA Objective 4 (Population and Human Health) as while some of the interventions may improve access to essential services, employment and the natural environment, this access will be achieved via the road network and therefore will not be sustainable. In addition, the various interventions proposed have the potential to both reduce and maintain/increase noise and vibration levels.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>5. Population & Human Health (Noise and Vibration)</p>	<p>Most of the recommendations (Bus, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are anticipated to result in uncertain effects on SEA Objective 5 (Population and Human Health) as it is unclear if the proposed interventions will reduce noise and vibration associated with the transport network, or promote/invest in/build and maintain infrastructure to support the development of high-quality places. Additionally, while some of the Freight interventions would result in a reduction in noise and vibration on key routes, there is potential for negative environmental effects associated with the construction and operation of other Freight interventions, although this will be dependent of the location and nature of the enhancements adopted. Some of the Rail interventions could result in reductions in noise and vibration (e.g. RL5 which involves a move away from diesel engines to alternatives such as hydrogen or battery), several of the other Rail interventions proposed could lead to potential increases in noise associated with the proposed expansions to the rail network, although this is dependent on the proximity of noise sensitive receptors.</p> <p>The Active Travel and Behavioural Change recommendations are generally anticipated to result in minor positive effects on SEA Objective 5 (Population and Human Health) as the majority of the interventions proposed will help reduce noise and vibration on the transport network by encouraging a modal shift to more sustainable modes of travel, i.e. active travel options and expanding 20mph zones and limits across Scotland.</p> <p>The Technology recommendations are anticipated to result in neutral effects on SEA Objective 5 (Population and Human Health) as the interventions proposed are not expected to have any notable effect on noise and vibration levels associated with the transport network.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 5 (Population and Human Health) as the majority of the interventions proposed will not reduce noise and vibration on the transport network as many of the proposals comprise expansions to the existing ferry network including more frequent ferry services and new ferry routes, resulting in potential increases in noise and vibration during both the construction and operation phases of these interventions.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>6. Population & Human Health (High Quality Places)</p>	<p>Four of the recommendations (Freight, Multi Modal, Passenger Transport, Rail) are anticipated to result in neutral effects on SEA Objective 6 (Population and Human Health) as, given the nature of the various interventions proposed, it is unlikely to have a notable effect on the promotion/investment in/building/maintenance of infrastructure to support the development of high quality places. Although there is potential for positive effects on SEA Objective 6 associated with one of the interventions (Passenger Transport) due to the proposed improvements to the quality of passenger facilities for all users, including those with reduced mobility.</p> <p>Three of the recommendations (Behaviour Change, Bus and Metro) are anticipated to result in uncertain effects on SEA Objective 6 (Population and Human Health) as while the expansion of 20mph zones and limits across Scotland will support the development of places that feel safe to all users, the encouragement of more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives will not directly help promote/invest in/build/maintain infrastructure to support the development of high-quality places.</p> <p>Three of the recommendations (Island Connectivity, Road and Technology) are anticipated to result in negligible effects on SEA Objective 6 (Population and Human Health) as these interventions will not significantly promote/invest in/build/maintain infrastructure to support the development of high-quality places (including the development of places that feel safe to all users, prioritisation of pedestrians in the public realm or the creation and maintenance of an attractive public realm), or improve safety on the transport network.</p> <p>The Active Travel recommendations are anticipated to result in minor positive effects on SEA Objective 6 (Population and Human Health) as the interventions proposed will help promote/invest in/build/maintain infrastructure to support the development of high-quality places by prioritising pedestrians in the public realm. Some of the interventions will also help support the development places that feel safe to all users through improvements to active travel routes including road crossings and lighting, and measures to reduce traffic volumes and/or speeds and campaigns to promote better driver behaviour.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>7. Population & Human Health (Safety)</p>	<p>Overall, most of the recommendations (Active Travel, behaviour Change, Freight, Multi Modal, Passenger Transport, Rail, Road, technology) are anticipated to result in minor positive effects on SEA Objective 7 (Population and Human Health) as these interventions will help improve safety on the transport network by potentially reducing the likelihood of transport-related road accidents and casualties by encouraging a modal shift to more sustainable modes of travel, i.e. active travel options; the expansion of 20mph zones and limits across Scotland; a modal shift of freight from road to rail, in addition to proposals for freight rest stops; various improvements/upgrades to existing mobility hubs and public transport facilities.</p> <p>The Bus and Metro recommendations are anticipated to result in uncertain effects on SEA Objective 7 as while the delivery of faster and more reliable journey times for bus passengers will support the development of places that feel safe to all users, it is unlikely that the decarbonisation of the network would contribute to the achievement of the promotion/investment in/building/maintenance of infrastructure to support the development of high-quality places. Is it unclear if the Metro mode interventions proposed will improve safety on the transport network by reducing the likelihood of transport-related road accidents and casualties. However, one of the interventions proposed is considered to have minor positive effects on SEA Objective 7 as this intervention involves proposals for bus rapid transit, rail conversion and tram network extension, thereby potentially leading to reduced road traffic and consequently, road accidents and casualties as well.</p> <p>The Island Connectivity recommendations are anticipated to result in negligible effects on SEA 7 as these interventions will not significantly promote/invest in/build/maintain infrastructure to support the development of high-quality places (including the development of places that feel safe to all users, prioritisation of pedestrians in the public realm or the creation and maintenance of an attractive public realm) , or improve safety on the transport network.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>8. Material Assets (Sustainability)</p>	<p>Most of the recommendations (Active Travel, Bus, Island Connectivity, Freight, Passenger Transport, Rail, Road, Technology) are anticipated to result in minor positive effects on SEA Objective 8 (Material Assets) as the interventions proposed each aim to promote/improve the sustainable use of the transport network by planning for future travel arrangements where journeys are made by a number of different recommendations (including Active Travel). The Island Connectivity recommendations propose improvements to ferry interchanges and timetabling, and helping plan for the future capacity of public transport, taking demographic and other societal changes, particularly within island/coastal communities, into account. Some of the interventions will also help plan for future travel arrangements where journeys are made by a number of different modes by providing new ferry/fixed links which will connect to new road connections (e.g. IC1d). Interventions IC1c, IC1d, IC1e, IC1g, IC1h and IC4 also support improvements to transport technology and promotes the sustainable use and management of existing infrastructure through the various proposals for upgrades to/replacement of vessels, and the decarbonisation of the ferry network. Several of the Road interventions proposed may require significant quantities of materials, and construction related trips would be required for bypasses and dualling schemes in particular, and overtaking opportunities and realignment/widening to a lesser extent depending on the complexity and scale of individual schemes. The significance of any effects will depend on the source and type of materials/natural resources used. However, it should also be noted that there is also potential opportunity for schemes to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term with associated positive impacts.</p> <p>The Behaviour Change and Metro recommendations are anticipated to result in uncertain effects on SEA Objective 8 (Material Assets) as the encouragement/enablement/incentivisation for more people to make use of active and sustainable transport choices more often through national, regional and/or local initiatives will promote and improve the sustainable use of the transport network. However, there is not a clear link between the expansion of 20mph zones and limits across Scotland and the promotion and improvement of the sustainable use of the transport network. Additionally, MT2 (Metro) is considered to result in major positive effects on SEA Objective 8 as this intervention involves proposals for bus rapid transit, rail conversion and tram network extension, thereby potentially helping plan for future travel arrangement where journeys are made by a number of different modes, and plan for the future capacity of public transport, taking demographic and other societal changes into account.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>9. Material Assets (Natural Resources)</p>	<p>A significant majority of the recommendations (Active Travel, Behaviour Change, Bus, Freight, Metro, Multi, Passenger Transport, Rail) are anticipated to result in uncertain effects on SEA Objective 9 (Material Assets). Depending on the source and type of materials/natural resources used to construct some of the new infrastructure associated with several of the proposed interventions, there is potential for negative impacts on material assets, particularly in relation to the use of natural resources. There is not a clear link between the expansion of 20mph zones and limits across Scotland and the reduction in the use of natural resources. Additionally, there is potential for negative environmental effects during both the construction and operation of the interventions proposed. It is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>The Road recommendations are anticipated to result in minor positive effects on SEA Objective 9 (Material Assets) as several of the interventions proposed may require significant quantities of materials, and construction related trips would be required for bypasses and dualling schemes in particular, and overtaking opportunities and realignment/widening to a lesser extent depending on the complexity and scale of individual schemes. The significance of any effects will depend on the source and type of materials/natural resources used.</p> <p>The Technology recommendations are generally anticipated to result in negligible effects on SEA Objective 9 (Material Assets) as the proposed interventions are generally not considered to be directly related to the reduction in use of natural resources.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 9 (Material Assets) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore will not reduce the use of natural resources. Intervention IC4 is anticipated to result in uncertain effects on SEA Objective 9 as this intervention may result in reductions in the use of natural resources and contributions to the circular economy; however, this is dependent on the methods/technologies adopted in relation to the decarbonisation of the ferry network.</p> <p>The Multi Modal recommendations are anticipated to result in neutral effects on SEA Objective 8 (Material Assets) as the interventions proposed are not considered to significantly promote/improve the sustainable use of the transport network.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>10. Water Environment</p>	<p>A significant majority of the recommendations (Behaviour Change, bus, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are anticipated to result in uncertain effects on SEA Objective 10 (Water Environment) as depending on the location/design of the measures, there is potential for negative environmental impacts during construction and operation of the improvements. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate. Furthermore, there are possible positive effects (Bus mode) on the water environment, biodiversity and soil as a result of a reduction in diffuse pollution on key receptors associated with the decarbonisation of the bus network; however, the significance of effect is uncertain at this stage.</p> <p>Overall, Active Travel and Technology recommendations are anticipated to result in neutral effects on SEA Objectives 10 (Water Environment) as minimal hard infrastructure is required as part of the majority of the interventions proposed (Active Travel) and therefore, there will be minor effects on the water environment.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 10 (Water Environment) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on the water environment, e.g. physical impacts on waterbodies/watercourses/coastlines associated with development, constraining water bodies from the achievement of Good Ecological Status/Good Ecological Potential under the Water Framework Directive, or increasing the risk of diffuse pollution from current or increasing traffic volumes. Intervention IC4 is anticipated to result in minor positive effects on SEA Objective 10 as the decarbonisation of the ferry network has the potential to protect/maintain/improve the quality of the water environment.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>11. Biodiversity</p>	<p>A significant majority of the modes (Behaviour Change, Bus, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are anticipated to result in uncertain effects on SEA Objective 11 (Biodiversity) as depending on the location/design of the of the measures implementations and upgrades, there is potential for negative environmental impacts during construction and operation of the improvements. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate. There is also no clear relationship between some of the interventions and SEA Objective 11.</p> <p>The Active Travel recommendations are generally anticipated to result in neutral effects on SEA Objective 11 (Biodiversity) as minimal hard infrastructure is required as part of the majority of the interventions proposed and therefore, there will be minor effects on the biodiversity. The Technology recommendations are also anticipated to result in neutral effects on SEA Objective 11 (Biodiversity) as the proposed interventions are not considered to result any negative effects on the achievement of these SEA objectives.</p> <p>The Island Connectivity recommendations are generally anticipated to result in minor negative effects on SEA Objective 11 (Biodiversity) as the majority of the interventions proposed involve expansions to the existing ferry network including more frequent ferry services and new ferry routes and therefore have the potential to result in direct impacts on biodiversity, including potential damage to/loss of designated and undesignated wildlife or geological sites. Intervention IC4 is anticipated to result in minor positive effects on SEA Objective 11 as the decarbonisation of the ferry network (e.g. the use of alternative fuel sources, the transition to zero carbon emissions) could potentially protect and/or enhance the integrity of existing habitat, and protect and/or enhance the integrity of any site of biodiversity or geological value that has been designated at international, national or local levels.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
12. Soil	<p>A majority of the modes (Behaviour Change, Bus, Island Connectivity, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are generally anticipated to result in uncertain effects on SEA Objective 12 (Soil) as depending on the location/design of the of the measures implementations and upgrades, there is potential for negative environmental impacts during construction and operation of the improvements. It is therefore recommended that further environmental assessment is undertaken as the grouping develops, in order to identify potentially significant location-specific environmental impacts and mitigation where appropriate. There is also no clear relationship between some of the interventions and SEA Objective 12. The Island Connectivity interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential to result in the disturbance of soils, contamination, and indirect impacts on the natural processes of hydrological and ecological regimes. Intervention IC4 is anticipated to result in negligible effects on SEA Objective 12 as there is no clear relationship between this intervention and soils.</p> <p>The Active Travel recommendations are generally anticipated to result in neutral effects on SEA Objective 12 (Soil) as minimal hard infrastructure is required as part of the majority of the interventions proposed and therefore, there will be minor effects on soil. The Technology recommendations are also anticipated to result in neutral effects on SEA Objectives 12 (Soil) as the proposed interventions are not considered to result any negative effects on the achievement of these SEA objectives.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>13. Cultural Heritage</p>	<p>Most of the modes (Active Travel, Behaviour Change, Bus, Island Connectivity, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are anticipated to result in uncertain effects on SEA Objectives 13 (Cultural Heritage). There is no clear relationship between the decarbonisation of the bus network and the achievements of SEA Objective 13. The majority of Island Connectivity interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential for negative effects on designated and undesignated archaeological sites and other culturally and historically important features. Intervention IC1c is anticipated to result in minor negative effects on SEA Objective 13 due to the new fixed link and harbour infrastructure proposed which could result in negative effects on designated and undesignated archaeological sites and other culturally and historically important features/affect key views to and from heritage assets. Intervention IC4 is anticipated to result in negligible effects on SEA Objective 13 as there is no clear relationship between this intervention and cultural heritage. There is potential for negative environmental effects during both the construction and operation of several of the Road interventions proposed. However, the scale of the impacts is uncertain at this stage, particularly for junction improvements, realignment/widening and overtaking opportunities. It is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>The Technology recommendations are anticipated to result in neutral effects on SEA Objective 13 (Cultural Heritage) as the proposed interventions are not considered to result any negative effects on the achievement of these SEA objectives.</p>

SEA TOPIC	NATIONAL SUMMARY FOR ALL PACKAGES
<p>14. Landscape and Visual Amenity</p>	<p>Most of the modes (Active Travel, Behaviour Change, Bus, Island Connectivity, Freight, Metro, Multi Modal, Passenger Transport, Rail, Road) are anticipated to result in uncertain effects on SEA Objective 14 (Landscape and Visual Amenity). There is no clear relationship between the decarbonisation of the bus network and the achievement of SEA Objective 14. Most Island Connectivity interventions proposed involve expansions to the existing ferry network, including the development of new ferry routes, and therefore have the potential for negative effects on national/regional/local landscape designations; however, further environmental assessment would be required to identify location-specific environmental impacts and mitigation where appropriate. There is potential for negative environmental effects during both the construction and operation of several of the Road interventions proposed. However, the scale of the impacts is uncertain at this stage, particularly for junction improvements, realignment/widening and overtaking opportunities. It is therefore recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>The Technology recommendations are anticipated to result in neutral effects on SEA Objective 14 as the proposed interventions are not considered to result any negative effects on the achievement of this SEA objective.</p>

Compatibility Assessment of the STPR2 Recommendations and SEA Objectives

STPR2 Recommendations	Recommendation number	SEA Objectives													Summary	
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
Connected neighbourhoods	1	+	~	+	+	+	?	+	+	~	~	~	~	~	~	<p>This option seeks to promote and facilitate modal shift to sustainable and active travel with a focus on improved safety, user enjoyment and creating accessible spaces for all users. Up to 1.9M people could experience a positive influence on their travel choices.</p> <p>The anticipated modal shift would result in a reduction in emissions of key air pollutants. Waltham Forest's LTN, which delivered measures similar in nature and scale to those being recommended as connected neighbourhoods, resulted in a 7% reduction in</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>NOx, PM10 and PM2.5, sufficient to increase life expectancy by around 1.5 months per resident of the area.</p> <p>This recommendation is likely to result in positive effects on SEA objectives for reducing greenhouse gas emissions (SEA Objective 1) and improving air quality (Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions, reducing transport related noise and improving the quality of places. To increase improvements in air</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>quality interventions could be focused in areas in or adjacent to Air Quality Management Areas (AQMAs). This recommendation would also have a positive effect on achieving a sustainable transport network (Objective 8), quality of life (Objective 4) and safety (Objective 7) as it seeks to expand the existing active travel network, providing more active travel options, safer routes and helping to reduce noise and vibration (Objective 5) in urban and suburban areas for a significant number of the population. 1.3M-1.9M people would live within the improved areas. The influence the</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>recommendation has on achieving high quality places (Objective 6) is yet to be determined.</p> <p>There is an uncertain relationship between the proposed recommendation and climate adaptation, natural resources, water, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 2 and 9 to 14), due to the potential construction impact of new routes. Further assessment should be undertaken to identify any significant environmental effects once the location of interventions is decided.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives														Summary
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Active freeways and cycle parking hubs	2	+	0	+	+	0	0	+	+	0	0	0	0	?	?	This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as it seeks to encourage a modal shift to active travel methods and reduce traffic and congestion through reallocation of road space on key routes. This would reduce levels of transport-related air pollution and carbon emissions, reduce transport-related noise and improve the quality of urban spaces. The recommendation would also have a positive effect on the sustainable use of the transport network (Objective

STPR2 Recommen- dations	Recommendation number	SEA Objectives													Summary	
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>8), quality of life (Objective 4) and safety (Objectives 4 and 7) as it promotes a more sustainable use of the existing transport network, encouraging sustainable access and increased travel choice with a focus on improved safety and creating accessible routes/spaces for all users.</p> <p>Further environmental assessment will be required as individual interventions (freeways) are developed to determine local effects on landscape/townscape, visual amenity (Objective 13) and cultural heritage (Objective 14). This assessment should also include any necessary</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives													Summary	
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>mitigation for expected construction stage effects, for example relating to air quality, embodied carbon and greenhouse gas emissions, noise and vibration, amenity, accessibility and nuisance. It is considered that the recommendation would have neutral effects on the remaining SEA objectives due to the limited land-take required.</p> <p>Overall, this recommendation is expected to have a minor positive effect on this criterion under both the Low and High scenarios.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives														Summary
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Village-town active travel connections	3	+	~	+	+	+	+	+	+	?	?	?	?	?	?	<p>This recommendation is likely to result in positive effects on SEA objectives related to reducing greenhouse gas emissions and improving air quality (SEA Objectives 1 and 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions. The recommendation would also have a positive effect on the sustainable use of the transport network (Objective 8).</p> <p>This recommendation is likely to result in positive effects for four SEA Objectives that fall</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this recommendation to improve the active travel network, providing more active travel options, safer routes, improving the quality of places and helping to reduce noise and vibration in both urban and rural locations. There is potential for minor negative environmental effects as a result of the proposed recommendation on natural</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																resources, the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity during construction and operation (Objectives 9 to 14), due to the construction footprint of new routes. It is therefore recommended that further environmental assessment is undertaken when the locations of new interventions are identified, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Overall, this recommendation is expected to have a minor positive effect on this criterion

STPR2 Recommendations	Recommendation number	SEA Objectives														Summary
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																under both the Low and High scenarios.
Connecting towns by active travel	4	+	~	+	+	+	+	+	+	~	?	?	?	?	?	This recommendation is likely to result in positive effects on SEA objectives related to greenhouse gas reduction (Objective 1) and air quality (Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, would reduce transport related air pollution and greenhouse gas emissions, and improving the quality of places. The recommendation would also have a positive effect on the sustainable use of the transport network (Objective 8) and four SEA Objectives that

STPR2 Recommendations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this recommendation to expand the existing active travel network, providing more active travel options, safer routes and helps to reduce noise and vibration in both more urban and rural locations. There is an uncertain relationship between the proposed recommendation and the water environment, biodiversity, soil, cultural</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives													Summary	
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>heritage and landscape and visual amenity (Objectives 10 to 14), for example due to the environmental effects that could arise from constructing new active travel routes. Further assessment should be undertaken to identify these potential effects once the location of interventions is being considered. Negligible effects are predicted for the remaining SEA objectives as there is unlikely to be a significant influence on these receptors. Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives														Summary
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Long-distance active travel network	5	+	~	+	+	+	+	+	+	?	?	?	?	?	?	<p>This recommendation is likely to result in positive effects on SEA objectives related to reducing greenhouse gas emissions (SEA Objective 1) and improving air quality (SEA Objective 3), as it seeks to encourage a modal shift to more sustainable modes of travel, and, as a result, reduce levels of transport related air pollution and carbon emissions. Given the nature of the recommendation, it has no clear link to the achievement of climate change adaptation (Objective 2).</p> <p>The recommendation would also have a positive effect on four SEA Objectives that fall under the population and</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4, 5, 6 and 7). The positive scores are derived from the aims of this recommendation to expand the existing and popular NCN active travel network, providing more active travel options, safer routes, improving the quality of places and also has the potential for positive effects on reducing traffic noise and vibration during operation. It would have a positive effect on sustainable accessibility (Objective 8) as it promotes a more sustainable</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>use, and management of, the existing transport network. There is an uncertain relationship between the recommendation and the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity during construction and operation of the new routes (Objectives 10, 11, 12, 13 and 14 respectively), at this time; however these are not anticipated to be significant effects in the context of the existing road network. The effects on natural resource (raw materials) requirements (Objective 9) are also uncertain at this stage. It is</p>

STPR2 Recommendations	Recommendation number	SEA Objectives													Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity	
																	therefore recommended that further environmental assessment is undertaken as the recommendation develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Behavioural change initiatives	6	+	~	+	+	+	+	+	+	+	~	~	~	~	~		This recommendation is likely to result in positive effects on SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as it seeks to encourage a modal shift to more

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>sustainable and active travel methods, and, as a result, reducing transport-related air pollution and greenhouse gas emissions.</p> <p>The recommendation would have a positive effect on the sustainable use of the transport network and natural resource usage (Objectives 8 and 9). It would also benefit four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this</p>

STPR2 Recommendations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>recommendation to promote more sustainable use of the existing transport network, encourage sustainable access and increase travel choice through financial incentives and enablement of change for those otherwise unable to access travel options.</p> <p>Negligible effects are predicted for the remaining SEA objectives as there is unlikely to be a significant influence on these receptors. This recommendation is expected to have a minor positive effect on addressing this criterion in both Low and High scenarios.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
Changing road user behaviour	7	~	~	+	+	+	+	+	~	~	~	~	~	~	~	<p>There are no significant effects predicted in relation to greenhouse gas reduction and climate change adaptation (Objectives 1 and 2) as the options are not anticipated to lead to a significant reduction in greenhouse gas emissions or adapt the transport network to the effects of climate change.</p> <p>This recommendation is likely to result in positive effects for four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>positive scores are derived from the aims of this recommendation to improve safety of the road network and street environments, which in turn will encourage greater use of sustainable active travel options and prioritise pedestrians and cyclists in the public realm. In addition, road traffic travelling at slower speeds may also result in positive effects by reducing noise and vibration (Objective 5) and improving air quality (Objective 3), due to a reduction in fuel consumption. No significant effects are expected for the sustainable use of the transport network and natural resource usage</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>(Objectives 8 and 9) as the options will not significantly promote and improve the sustainable use of the transport network (by low carbon transport modes) or reduce the use of natural resources. Finally, negligible effects were predicted in relation to Objectives 10 to 14 (water environment, biodiversity, soil, cultural heritage and landscape and visual amenity) as the options for this recommendation would not cause any significant effects upon these environmental topics.</p> <p>This recommendation is expected to have a minor positive effect on this criterion</p>

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																	in both Low and High scenarios.
Increasing active travel to school	8	+	~	+	+	+	+	+	~	~	~	~	~	~			This recommendation is likely to result in positive effects on the SEA objectives to reduce greenhouse gas emissions (Objective 1) and improve air quality (Objective 3), as it seeks to encourage a modal shift to more sustainable and active travel methods and reduce traffic and congestion through reallocation of road space and, as a result, decreasing levels of transport-related air pollution outside of schools, and carbon emissions. The recommendation would also have a positive effect on

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																<p>sustainable transport (Objective 8) and four Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this recommendation to promote a more sustainable use of the existing transport network, encourage sustainable access and increase travel choice, with a focus on improved safety and creating accessible spaces for all users. There would be improvements to the public realm (Objective 6), for</p>

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																<p>example through the reallocation of road space, improved surfacing, improved crossing points and the introduction of 'school streets.' There would also be a likely reduction in noise and vibration around schools due to the reductions in private vehicle traffic.</p> <p>It is considered that the recommendation would have negligible effects on the remaining SEA objectives for natural resource usage, water environment, biodiversity, soils, cultural heritage, and landscape and visual amenity (Objectives 9 to 14).</p> <p>This recommendation is expected to have a minor</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																positive effect on this criterion in both Low and High scenarios.
Improving access to bikes	9	+	~	+	+	+	+	+	+	0	0	0	0	0		This recommendation would likely result in positive effects on greenhouse gas reduction (Objective 1) and improving air quality (Objective 3) SEA objectives due to promoting a modal shift to more sustainable active travel options for functional and recreational journeys and, as a result, a reduction in emissions and improvement in air quality. Positive effects would be anticipated on four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to

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																<p>quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from an expected increase in users choosing more sustainable travel to access essential services.</p> <p>Due to the modal shift to cycling, there will also be a slight reduction in wear and tear and need for maintenance of the road network, which will in turn reduce raw material requirements and hence help to reduce natural resources (Objective 9).</p> <p>Studies have suggested that walking or cycling could realistically substitute for 41%</p>

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																of short car trips, saving nearly 5% of carbon emissions from car travel. However, only 35% of Scottish households currently have access to one or more bikes, significantly limiting the potential for change without interventions to reduce barriers to cycle ownership. No significant effects are anticipated for the remaining SEA objectives, including water, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14) as minimal hard infrastructure is required. However, any new infrastructure, such as bike storage facilities, will need to complement and integrate with

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																<p>the existing townscape setting, including any cultural heritage assets. Further environmental assessment or consultation with Historic Environment Scotland and NatureScot may therefore be required.</p> <p>A negligible effect is predicted for Objective 2 as there is unlikely to be a significant influence on this receptor.</p> <p>Overall, this recommendation is expected to have a minor positive effect against this criterion in both Low and High scenarios.</p>
Expansion of 20mph limits and zones	10	+	0	+	+	+	+	+	0	0	~	~	~	~	~	<p>This recommendation is likely to result in positive effects for four SEA Objectives that fall under the population and</p>

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																<p>human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the aims of this recommendation to improve safety of the road network and street environments, which in turn will encourage greater use of sustainable active travel methods and will prioritise pedestrians in the public realm.</p> <p>In addition, road traffic travelling at slower speeds may also result in positive effects in relation to a reduction in noise and</p>

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																<p>vibration; though evidence is unclear as to whether 20 mph limits have benefits or disbenefits for air quality (Objective 3) or reducing greenhouse gas emissions (Objective 1).</p> <p>There is an uncertain relationship between the recommendation and the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). However, these are not anticipated to be significant effects in the context of the existing road network. It is recommended that further environmental assessment is undertaken as the</p>

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																recommendation develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. It is considered that the recommendation would have neutral effects on the remaining SEA objectives (Objectives 2, 8 and 9). This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Clyde Metro	11	+	+	+	+	?	?	+	+	?	?	?	?	?	?	Clyde Metro is likely to result in positive effects on the SEA objectives related to greenhouse gas reduction and climate adaptation (SEA

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																Objectives 1 and 2) and air quality (Objective 3) due to enhancing the public transport network and promoting a modal shift to more sustainable transport options. It is envisaged that mass transit modes will be electric/ hydrogen powered from the outset, helping to improve air quality and reduce greenhouse gas emissions. Positive effects are anticipated on quality of life and sustainable accessibility (Objective 4) due to an expected increase in sustainable access to services and leisure opportunities as well as improving safety (Objective 7). The significance

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																<p>of these effects is dependent on the alternatives being safe, affordable, and available for all users in order to fully realise the potential for mode shift through the region from private car to public transport (Objective 8).</p> <p>There is potential for negative environmental effects during construction and operation of the improvements, particularly on the water environment (Objective 10), biodiversity (Objective 11), cultural heritage (Objective 13) and landscape and visual amenity (Objective 14), for example impacts from the construction footprint of any new transport infrastructure.</p>

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																<p>In terms of construction, there is an opportunity to employ methods for decarbonisation of construction through innovation in design, procurement and construction methods identified as part of the design and development process whilst adhering to relevant standards. Similar work undertaken to date in exploring options for decarbonising the construction of other schemes could be used as a basis for developing these methods.</p> <p>In addition, significant quantities of materials and construction-related trips will be required. Depending on the source and type of</p>

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																<p>materials/natural resources used, there is the potential for negative impacts on natural resource requirements (Objective 9).</p> <p>Modal shift to more sustainable modes of transport will have a positive effect on greenhouse gas emissions and air quality as well as potentially improve human health. Construction of any new infrastructure is likely to have a negative effect on other aspects of the environment. Further environmental assessment will be required to identify potentially significant location-specific environmental impacts</p>

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																and mitigation where appropriate. Therefore, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Edinburgh & South-East Scotland Mass Transit	12	++	?	++	+	?	?	+	+	?	?	?	?	?	?	The centre of Edinburgh, including the Old and New Towns of Edinburgh, is designated as a World Heritage Site. There are also Scheduled Monuments (including Holyrood Park and Craigmillar Castle and gardens), 50 Conservation Areas, designated for special architectural or historic interest and large numbers of listed buildings. Various other

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																<p>designations are adjacent to Edinburgh. These include multiple Special Areas of Conservation, Sites of Special Scientific Interest, Special Protection Areas, Geological Conservation Review sites, Ramsar wetlands, Regional Parks, Battlefield Inventory sites and multiple other cultural heritage designations. Sites or areas that have not been designated may also represent constraints or opportunities.</p> <p>ESES MT would likely result in positive effects on SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3) due to</p>

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																<p>promoting a modal shift to more sustainable transport options. It is envisaged that mass transit modes would be electric/ hydrogen powered from the outset, helping to improve air quality and reduce greenhouse gas emissions. The effects on climate change adaptation (Objective 2) are unclear, but there would be opportunities to adapt the transport network.</p> <p>Positive effects are also anticipated for the SEA objective relating to quality of life (Objective 4) due to an expected increase in access by public transport to services and leisure opportunities as well as improving safety</p>

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																<p>(Objective 7) through both reducing the volume of vehicles on roads, thereby decreasing the likelihood of collisions occurring, as well as including modern security systems (such of CCTV onboard public transport). The significance of these effects are dependent on the system being accessible, connected, affordable and safe for all users in order to fully realise the potential for mode shift through the region from private car to public transport (Objective 8).</p> <p>There is the potential for negative environmental effects during construction and operation of ESES MT on the</p>

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																<p>water environment, biodiversity (including the designated sites mentioned above), cultural heritage (including the designated sites mentioned above) and landscape and visual amenity (Objectives 10 to 14). The nature and scale of these impacts would depend on the design and operational requirements of individual elements comprising the mass transit system.</p> <p>There is also potential for minor negative environmental effects associated with the reallocation of road space, but these are not expected to be significant. This applies to effects on noise and vibration</p>

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																<p>(Objective 5) and the development of high quality places (Objective 6).</p> <p>In terms of construction, there is an opportunity to employ methods for decarbonisation of construction through innovation in design, procurement and construction methods identified as part of the design and development process whilst adhering to relevant standards. Similar work undertaken to date in exploring options for decarbonising the construction of other schemes could be used as a basis for developing these methods.</p> <p>In addition, significant quantities of materials and</p>

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																<p>construction-related trips would be required. Depending on the source and type of materials/natural resources used, there is the potential for negative impacts on natural resource usage (Objective 9). Construction of any new infrastructure is likely to have a negative effect on some aspects of the environment. For this reason, further environmental assessment would be required and this would inform appropriate avoidance and mitigation measures for any potential negative effects. The exact magnitude of these positive and negative effects are</p>

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																unclear at this strategic planning stage. Overall, this recommendation is expected to have a minor positive effect on the environment in both the Low and High scenarios.
Aberdeen Rapid Transit	13	++	?	++	+	?	?	?	~	?	~	~	~	~	~	ART will have positive effects on the SEA objectives related to reducing greenhouse gas emissions (SEA Objective 1) and improving air quality (Objective 3) due to enhancing the bus network and promoting a modal shift to a more sustainable transport option. Positive effects anticipated on Population and Human Health (Objective 4) include an expected increase

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																<p>in sustainable access to essential services, improved interchanges, and planning for future capacity of public transport. The extent of positive effects are dependent on the alternatives being safe, affordable and available for all users to ensure modal shift.</p> <p>There is potential for minor negative environmental effects associated with the reallocation of road space, but these are not expected to be significant. This applies to effects on noise and vibration (Objective 5), the development of high quality places (Objective 6), the safety of the transport network (Objective 7), climate adaptation</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>(Objective 2) and natural resource usage (Objective 9). It is therefore recommended that further environmental assessment is undertaken as the option develops to identify potentially significant location-specific environmental impacts and mitigation where appropriate.</p> <p>Effects on the remaining SEA objectives are expected to be negligible.</p> <p>This recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.</p>

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Provision of strategic bus priority measures	14	+	+	+	+	?	0	+	+	?	?	?	?	?	?	<p>This recommendation is likely to result in positive effects for SEA Objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), particularly in relation to the achievement of a reduction in transport related emissions, as it seeks to encourage a modal shift to more sustainable public transport forms. There is evidence that implementation of extensive bus lanes can reduce car use by up to 6%. Positive environmental effects are anticipated, particularly if the interventions support reinvestment in a low carbon fleet. It would also have a</p>

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																<p>positive effect on quality of life, sustainable accessibility and safety (Objectives 4 and 7) by providing a sustainable alternative for users to travel to employment, education, healthcare and leisure activities, which has potential for improved safety on the transport network. It could also result in a beneficial effect on noise and vibration; however, this would depend on the location of the measures / upgrades and is therefore uncertain at this stage.</p> <p>The recommendation would also have a positive effect on achieving a sustainable transport network (Objective 8) as it promotes a more</p>

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																<p>sustainable use and management of the existing transport network.</p> <p>There is potential for possible positive effects on biodiversity (Objective 11) as a result of a reduction in diffuse pollution on key receptors; however, the significance of effects are uncertain at this stage as the overall effect will depend on whether physical construction works are required.</p> <p>Depending on the location of the bus priority measures, there is potential for negative environmental effects during construction and operation of the improvements, for example on noise and vibration (Objective 5), natural</p>

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																<p>resource usage, Water Environment, Soil, Cultural Heritage and Landscape and Visual Amenity (Objectives 9 to 14). It is therefore recommended that further environmental assessment is undertaken as the recommendation is implemented, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. It is anticipated that mitigation will be able to avoid or reduce any potential negative environmental effects.</p> <p>The recommendation is related to, but unlikely to have any effect on, the achievement</p>

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																of Objective 6 (relating to improvements in the public realm and pedestrian prioritisation) and, given the nature of the recommendation, it has no (or negligible) clear relationship to the achievement of Objective 2 (climate change adaptation). For the cumulative assessment, across all SEA objectives, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High
Highland Main Line rail corridor	15	+	~	+	+	?	0	+	+	?	?	?	?	?	?	In relation to Inverness railway station, there are various designated sites, with the Inner Moray Firth being the

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enhancements																largest Special Protection Area (SPA), Special Area of Conservation (SAC), Sites of Special Scientific Interest (SSSI) and Ramsar wetland site adjacent to Inverness. The railway station is also located within the Inverness Conservation Area, surrounded by a number of Listed Buildings and Scheduled Monuments. There is a large Battlefields Inventory designation south of the Highland Main Line at Smithton. Perth railway station is located within the Perth Central Conservation Area, with Listed Buildings and Scheduled Monuments situated nearby. There are

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																<p>records of designated sites, including an inland river SAC and a large Ramsar Site, SSSI, SPA, and SAC designations in the coastal and marine environment. Sites or areas that have not been designated may also represent constraints or opportunities.</p> <p>Biodiversity designated sites, including multiple SACs, SPAs, SSSIs, Marine Protected Areas and Ramsar Sites have been identified along the Highland Main Line rail corridor, which also runs through the Cairngorms National Park. The Highland Main Line route between Inverness and Perth passes through or adjacent to the</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage
															<p>following significant designated heritage assets:</p> <ul style="list-style-type: none"> • Two large Gardens and Designed Landscape (GDL) designations adjacent to the Highland Main Line near Loch Alvie; • Two GDL between Calvine and Blair Atholl; • Battle of Killiecrankie designated Battlefields Inventory site; • Pitlochry Conservation Area; • Two GDL, a Scheduled Monument and a Battlefields Inventory site at Dunkeld; • One GDL at Birnam; and

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																<ul style="list-style-type: none"> A large Scheduled Monument at Scone Park, and Bertha Roman Fort Scheduled Monument, both north of Perth. <p>This recommendation is likely to result in positive effects on the SEA objectives for reducing greenhouse gases (SEA Objective 1), improving air quality (Objective 3) and reducing noise and vibration (Objective 5), at least in some locations. It is also likely to increase sustainable accessibility (Objective 4) and improve safety (Objective 7), particularly in relation to reducing transport-related emissions and congestion as it seeks to encourage a modal</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>shift to more sustainable public transport (rail) for passenger journeys, and from road to rail for freight. It would have a positive effect on encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network. This recommendation would also have a positive effect on Objective 8 as it promotes a more sustainable use and management of the existing transport network.</p> <p>There are possible positive effects on the water environment, biodiversity (including the designated sites mentioned above) and soil</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>(Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors, however the significance of effects are uncertain at this stage.</p> <p>There is also potential for negative environmental effects during construction and operation of the enhancements, particularly on natural resource usage, the water environment, biodiversity (including the designations listed above), soil, cultural heritage (including the designations listed above) and landscape and visual amenity (Objectives 9 to 14). There is also potential for negative effects</p>

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																<p>on noise and vibration (Objective 5) in at least some locations. It is therefore recommended that further environmental assessment is undertaken as the recommendation develops, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Whilst the recommendation is related to the public realm (Objective 6), it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral and, given the nature of the recommendation, it has no (or negligible) clear relationship to the</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																achievement of Objective 2 (climate change adaptation). This recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios
Perth-Dundee-Aberdeen rail corridor enhancements	16	+	~	+	+	?	0	+	+	?	?	?	?	?	?	There are international biodiversity designations, such as the River South Esk Special Area of Conservation in the vicinity of the rail corridor. There are also multiple cultural heritage designations, including many Gardens and Designed Landscapes, Conservation Areas in Perth, Dundee, Broughty Ferry, Arbroath, Montrose, Stonehaven,

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																<p>Machalls, Cove and Aberdeen and Scheduled Monuments at Perth, St Madoes and Inverkellor.</p> <p>This recommendation is likely to result in positive effects on the SEA objectives for greenhouse gas reduction (SEA Objective 1) and improving air quality (Objective 3) and four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the recommendation encouraging a modal shift to</p>

STPR2 Recommen- dations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>more sustainable public transport (rail) for passenger journeys, and from road to rail for freight. Overall, this recommendation would have a positive effect on population and human health as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network. This recommendation would also have a positive effect on Objective 8 as it promotes a more sustainable use and management of the existing transport network. Whilst the recommendation is related to developing high quality places (Objective 6), it</p>

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																<p>is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral. The recommendation also has no (or negligible) clear relationship to the achievement of climate change adaptation (Objective 2).</p> <p>There are possible positive effects on the water environment, biodiversity and soil (SEA Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors. However, the significance of these types of environmental effect are unclear at this strategic stage.</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																There is also potential for negative environmental effects during construction and operation of the enhancements, particularly on natural resource usage, water, biodiversity (including the designated sites listed above), soil, cultural heritage (including the designated sites listed above) and landscape and visual amenity (Objectives 9 to 14). There is also potential for negative effects on noise and vibration Objective 5, at least in some locations. It is therefore recommended that further environmental assessment is undertaken in order to identify potentially significant location-

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>specific environmental effects and mitigation where appropriate.</p> <p>Due to the expected modal shift from road to rail for both passengers and freight and the resulting reductions in greenhouse gas emissions and air pollutants, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>
Edinburgh/ Glasgow- Perth/ Dundee rail corridor enhancements	17	+	~	+	+	?	0	+	+	?	?	?	?	?	?	<p>This recommendation is likely to result in positive effects on the SEA objectives for greenhouse gas reduction (SEA Objective 1) and improving air quality (Objective 3) and four SEA Objectives</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). The positive scores are derived from the recommendation encouraging a modal shift to more sustainable public transport (rail) for passenger journeys, and from road to rail for freight. As well as positive effects, there is also potential for negative effects on noise and vibration (Objective 5), at least in some locations. Overall, this recommendation would have a positive effect on population and human health

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>as a result of encouraging sustainable access, increased travel choice, improved connectivity and potential for improved safety on the transport network. This recommendation would also have a positive effect on Objective 8 as it promotes a more sustainable use and management of the existing transport network.</p> <p>There are possible positive effects on the water environment, biodiversity and soil (Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors. For example, there are international biodiversity</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>designations, such as coastal Special Areas of Conservation and Special Protection Areas, in the vicinity of the rail corridor near Edinburgh. However, the significance of these types of environmental effect are unclear at this strategic stage.</p> <p>There is potential for negative environmental effects during construction and operation of the enhancements, particularly on natural resource usage, water, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14). For example, in terms of potential effects on cultural heritage and the historic landscape, in the</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>vicinity of the rail corridor near Edinburgh there are designated Battlefield Inventory heritage sites, Gardens and Designed Landscapes, Conservation Areas and the Old and New Towns of Edinburgh World Heritage Site designation.</p> <p>Whilst the recommendation is related to developing high quality places (Objective 6), it is unlikely to have a notable effect on the achievement of this objective and is therefore considered neutral. The recommendation also has no (or negligible) clear relationship to the achievement of climate</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>change adaptation (Objective 2).</p> <p>Due to the potentially significant environmental effects described above, it is recommended that further environmental assessment is undertaken in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>Due to the expected modal shift from road to rail for both passengers and freight and the resulting reductions in greenhouse gas emissions and air pollutants, this recommendation is expected to have a minor positive effect</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																on this criterion in both the Low and High scenarios.
Supporting integrated journeys at ferry terminals	18	+	~	+	+	?	~	?	+	~	?	?	~	~	?	This recommendation is likely to result in positive effects on the SEA objectives related to greenhouse gas reduction (SEA Objective 1) and air quality (Objective 3), particularly in relation to the achievement of a reduction in transport-related emissions; as the recommendation seeks to improve the use of sustainable modes of transport, by improving public transport connections/supporting integrated journeys at ferry terminals. It would also have a

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																<p>positive effect on promoting a more sustainable use, and management of, the existing transport network, which would progress Objective 8.</p> <p>It is likely to have a positive effect on quality of life, noise and vibration and safety (Objectives 4, 5 and 7) as the enhancements seek to improve accessibility, reduce severance, increase transport choice and improve safety on the transport network.</p> <p>Encouraging a mode shift away from private car to more sustainable modes may also reduce noise and vibration for those living or working near ferry terminals during operation. The significance of</p>

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																<p>effects are dependent on the alternatives being safe, affordable and available for all users.</p> <p>There are also possible positive effects on the water environment and biodiversity (Objectives 10 and 11) as a result of a reduction in diffuse pollution on key receptors; however, the significance of the effect is uncertain at this stage.</p> <p>There is potential for minor negative effects on noise and vibration (Objective 5) and landscape and visual amenity (Objective 14) during the construction works to facilitate the physical infrastructure improvements; however these</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	
															<p>are unlikely to be significant in the context of the current port operations.</p> <p>Given the nature of this recommendation, it has no (or negligible) clear link to the achievement of many of the SEA Objectives, including climate adaptation (Objective 2), developing high quality places (Objective 6), material assets (Objective 9), soil (Objective 12) and cultural heritage (Objective 13).</p> <p>This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Infrastructure to provide access for all at railway stations	19	+	+	+	+	0	+	+	+	?	?	?	?	?	?	Improvements to station accessibility are likely to encourage modal shift from car to rail to some extent but the precise contribution of this intervention to modal shift is unknown. The improvements will thereby reduce greenhouse gas emissions (SEA Objective 1) and help improve air quality (Objective 3). The recommendation is likely to complement other SEA objectives relating to quality of life, noise and vibration and safety (Objectives 4, 6 and 7) as it seeks to encourage modal shift to more sustainable travel, improve mobility of passengers and access for all

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																<p>to essential services, with a focus on improved safety and reducing barriers for passengers with reduced mobility and creating an attractive public realm.</p> <p>It would also have a positive effect on promoting a more sustainable use, and management of, the existing transport network, which would progress Objective 8, as the recommendation plans for the future capacity of public transport and seeks to improve interchanges.</p> <p>Specific impacts would require to be assessed at an individual station level, with the provision of accessible infrastructure (lifts or ramps) required to be</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>assessed in the context of a station environs, mindful that many of Scotland's stations may be of historical significance. At stations which are listed and offer high cultural heritage value, station design improvements will need to be sympathetic to the setting of cultural heritage resources and consultation with Historic Environment Scotland may be required. Designs will also need to consider how to benefit walking, wheeling and cycling at and around stations. Depending on the location and nature of facilities and station enhancements there is potential for negative</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>environmental effects during construction and operation of the improvements, particularly on natural resource requirements, the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14). However, it should be possible to avoid or mitigate most if not all of these negative effects.</p> <p>The recommendation is related to, but unlikely to have any effect on the achievement of Objective 5, which relates to noise and vibration, and is therefore considered neutral.</p> <p>The recommendation also has no (or negligible) clear relationship to the</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																achievement of climate change adaptation (Objective 2). Overall, across all of the SEA objectives, this recommendation is expected to have a neutral effect on this criterion in both Low and High scenarios.
Investment in DRT and MaaS	20	+	~	+	+	0	~	+	+	~	~	~	~	~	~	This recommendation is likely to result in positive effects for SEA Objectives related to greenhouse gas reduction (Objective 1) and air quality (Objective 3), particularly in relation to the achievement of a reduction in transport related emissions, as it seeks to encourage a modal shift to more sustainable public

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>transport forms. It would also have a positive effect on quality of life (Objective 4), safety (Objective 7) and improve the sustainability of the transport network (Objective 8), by providing a sustainable alternative for users to travel to employment, education, healthcare and leisure activities.</p> <p>The recommendation is related to, but unlikely to have any effect on the achievement of SEA Objective 5 (noise and vibration) and is therefore considered neutral. Given the nature of the recommendation, it has no (or negligible) clear relationship to the achievement of many of the</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																SEA Objectives, including Objective 2 (climate adaptation), Objective 6 (high quality places, and natural resource usage, the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14). Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Improved public transport passenger interchange facilities	21	+	0	+	+	0	+	+	+	0	?	?	?	?	?	This recommendation would likely result in positive impacts on the SEA objectives relating to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity	
																	3). The enhancements proposed in this recommendation seek to encourage modal shift to more sustainable travel means. The recommendation seeks to improve the mobility of passengers and access for all to essential services, with a focus on improved safety (for example improved lighting and CCTV), reducing barriers for passengers with reduced mobility and creating an attractive public realm. It therefore scores positively in the SEA objectives relating to quality of life (Objective 4), improving the public realm (Objective 6) and improving safety (Objective 7). It would

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>have a positive effect on existing transport infrastructure (Objective 8) as it seeks to improve existing public transport interchanges. Depending on the location and nature of facilities and station enhancements, there is potential for negative environmental impacts during construction and operation of the improvements, particularly on the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>identified in order to identify potentially significant location and design-specific environmental effects and mitigation where appropriate.</p> <p>The recommendation is related to, but unlikely to have any effect on the achievement of SEA Objective 2 (climate adaptation), Objective 5 (noise and vibration) or Objective 9 (material assets) and is therefore considered neutral.</p> <p>Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives														Summary
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Framework for delivery of mobility hubs	22	+	0	+	+	+	+	+	+	?	?	?	?	?	?	<p>This recommendation would likely result in positive effects on the SEA objectives for reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), due to promoting modal shift to more sustainable transport options. Positive effects are anticipated on quality of life and road safety (Objectives 4 and 7) due to an expected increase in sustainable access to essential services and, where interchange reduces car use, this is likely to result in a small net decrease in accidents. The significance of effects is dependent on the alternatives being safe, affordable, and</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage
															<p>available for all users. Positive effects are also expected for noise and vibration and developing high quality places (Objectives 5 and 6) due to expected reductions in noise from private vehicles and improvements to the public realm.</p> <p>There is the potential for negative environmental effects during construction and operation, on natural resource usage, water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14), depending on the design and location of the interventions.</p>

STPR2 Recommendations	Recommendation number	SEA Objectives												Summary		
		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>As part of delivery framework for mobility hubs, guidance would be expected on the potential need for further environmental assessment to support the planning and implementation of different types of mobility hubs depending on their setting.</p> <p>The recommendation is related to, but unlikely to have any effect on the achievement of SEA Objective 2 (climate adaptation) and is therefore considered neutral.</p> <p>Overall, this recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.</p>

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Smart, integrated public transport ticketing	23	+	0	+	+	0	~	0	++	0	0	0	0	0	0	0	<p>This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as Integrated Public Transport Ticketing is likely to encourage more people to use public transport than private vehicles, thereby reducing greenhouse gas and air pollutant emissions. In addition, the recommendation supports quality of life and sustainable accessibility (Objective 4), as smart and integrated ticketing would enable greater accessibility to essential services,</p>

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																<p>employment and the natural environment.</p> <p>A significant positive effect is assessed for Objective 8 as the recommendation would promote and improve the use of sustainable transport options through smart and integrated ticketing.</p> <p>It is considered that there would be no significant effects on the remaining SEA objectives as the recommendation is unrelated. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to climate change adaptation (Objective 2), noise and vibration and safety (Objectives 5 and 7),</p>

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																<p>natural resource usage, the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14).</p> <p>Given the nature of the recommendation, it has no (or negligible) clear relationship to Objective 6 (high quality places).</p> <p>This recommendation is therefore expected to have a moderate positive effect on this criterion in both the Low and High scenarios.</p>
Ferry vessel renewal and replacement, and	24	++	~	++	+	+	~	~	+	?	++	+	~	~	~	<p>This recommendation is likely to result in positive effects on the SEA objectives related to greenhouse gas reduction,</p>

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progressive decarbonisation																improving air quality and the water environment (Objectives 1, 3 and 10 respectively), particularly in relation to the achievement of a reduction in transport-related emissions; as the recommendation seeks to reduce emissions from ferries through decarbonisation / use of alternative fuels (electric, hydrogen). It would also have a positive effect on the existing transport network (Objective 8) as it promotes a more sustainable use, and management of, the existing transport network. It would have a positive effect on quality of life and reducing noise and vibration (Objectives 4 and 5) as a result of

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																<p>encouraging sustainable access and a move away from diesel engines to alternatives such as electric / hydrogen which could result in a beneficial effect on air quality and noise and vibration for those living or working near ferry terminals during operation.</p> <p>There are also possible positive effects on biodiversity (Objective 11) as a result of a reduction in diffuse pollution on key receptors; however, the significance of the effects are uncertain at this stage.</p> <p>Given the nature of this recommendation, it has no (or negligible) clear link to the achievement of many of the</p>

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																Objectives, including climate adaptation (Objective 2), developing high quality places and improving safety (Objectives 6 and 7) or soil, cultural heritage, and landscape and visual amenity (Objectives 12, 13 and 14). This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Decarbonisation of the rail network	25	++	0	++	0	+	0	0	+	?	?	?	?	?	?	This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), particularly in relation to the

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																achievement of a reduction in transport-related emissions; as it seeks to reduce emissions from rail through decarbonisation / use of alternative fuels (electric, hydrogen). The recommendation would also have a positive effect on maintaining the existing transport network (Objective 8) as it is promoting a more sustainable use and management of the existing transport network. It would also have a positive effect on noise and vibration (Objective 5) as a result of a move away from diesel engines to alternatives such as battery or hydrogen which would also

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																<p>result in a beneficial effect on noise and vibration during operation.</p> <p>There are possible positive effects on water, biodiversity and soil (Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors, however the significance of the effects are uncertain at this stage.</p> <p>Depending on the location and nature of infrastructure required, there is potential for negative environmental effects during construction and operation of the improvements, particularly on natural resource usage, the water environment,</p>

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																<p>biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14). For example, where overhead line equipment is installed for rail electrification. It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Whilst the recommendation is related to the remaining SEA Objectives, it is unlikely to have a notable effect on the achievement of these</p>

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																objective and is therefore considered neutral. Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Decarbonisation of the bus network	26	++	~	++	+	+	~	~	+	~	+	+	+	~	~	This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), particularly in relation to the achievement of a reduction in transport related emissions, as it seeks to reduce emissions from buses through decarbonisation / use of alternative fuels (electric,

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																hydrogen). The recommendation would also have a positive effect on the sustainable use of the transport network (Objective 8) as it promotes a more sustainable use and management of the existing transport network. It would also have a positive effect on quality of life as a result of encouraging sustainable access (Objective 4) and a move away from diesel engines to alternatives such as electric and hydrogen, which could help reduce noise and vibration (Objective 5). There are possible positive effects on water (Objective 10), biodiversity (Objective 11)

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																and soil (Objective 12) as a result of a reduction in diffuse pollution on key receptors; however, the significance of these effects is uncertain at this strategic stage. It is considered that there would be negligible effects on the remaining SEA objectives. Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Behavioural change and modal shift for freight	27	+	~	+	0	+	0	+	+	+	?	?	?	0	0	This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective

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																<p>3). This is because the recommendation seeks to improve the use of sustainable modes of transport through modal shift of freight from road; reducing the number of freight vehicles (associated congestion) and emissions from freight deliveries, particularly where alternative fuels are used. There would also be a positive effect on noise and vibration and safety (Objectives 5 and 7), due the expected reduction in freight vehicles on the road network.</p> <p>The recommendation would also have a positive effect on sustainable use of the transport network (Objectives 8 and 9) as it promotes a more</p>

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																<p>sustainable use and management of the existing transport network and should require fewer natural resources as more sustainable freight transport is introduced.</p> <p>There is potential for positive and negative effects on the water environment, biodiversity and soil (Objectives 10, 11 and 12 respectively) as a result of changes in diffuse pollution on key receptors; however, this would be dependent on the location and therefore these effects are uncertain at this stage.</p> <p>Given the nature of this recommendation to use softer measures to incentivise</p>

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																operators, there are limited physical interventions anticipated and therefore no (or negligible) clear link to the achievement of Objective 2 (climate change adaption). The recommendation is related to, but unlikely to have a notable effect on the achievement of the remaining SEA Objectives and is therefore considered neutral. Overall, this recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.
Zero emission vehicles	28	++	~	++	~	?	~	~	+	?	?	?	?	?	?	This recommendation is likely to result in major positive results for reducing

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and infrastructure transition																greenhouse gas emissions (SEA Objective 1) and improving air quality (Objective 3) as the net result of almost all options is to encourage a transition to non-tailpipe emission technologies. This would lead to a reduction in both greenhouse gas emissions and other pollutants, although the reduction in certain pollutants, including PM ₁₀ and PM _{2.5} , would be less due to the presence of tyre/suspension particulates. The overall reduction of pollutants would also lead to benefits for human health. Some evidence has suggested that wide uptake of EVs can lead to more

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																<p>accidents due to their lack of engine noise, but the overall evidence is currently limited.</p> <p>There is potential for positive effects on noise and vibration (Objective 5) resulting from increased use of zero emissions vehicles. However, there is also potential for negative effects as some noise would still be created by contact between the tyre and surface, and this would be greater at higher speeds. The recommendation would also improve the sustainability of the transport network (Objective 8) as it would encourage the installation and use of a charging network.</p> <p>The wider effects on usage of</p>

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																<p>natural resources (Objective 9), for example the mining of rare earth metals for EV batteries, are currently unclear. No significant effects are expected for water, biodiversity, soil, cultural heritage or landscape and visual amenity (Objectives 10 to 14), although there is the possibility of localised effects on the environment for some options. For this reason, any new infrastructure would need to complement and integrate with the existing townscape setting, including any cultural heritage assets. Further environmental assessment or consultation with Historic Environment Scotland and</p>

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																<p>NatureScot may therefore be required.</p> <p>There is no (or negligible) clear link to the achievement of the remaining SEA objectives (Objective 2, 4, 6 and 7).</p> <p>Overall, across all SEA objectives, this recommendation is expected to have a moderate positive effect against this criterion in both the Low and High travel behaviour variant scenarios.</p>
Access to Argyll (A83)	29	Not applicable												<p>The Access to Argyll and Bute (A83) was subject to a separate SEA which has now been concluded.</p>		

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Trunk road and motorway safety improvements to progress towards 'Vision Zero'	30	-	0	-	?	?	~	+	~	-	?	?	?	?	?	<p>The interventions within this recommendation would result in potential positive effects on safety (SEA Objective 7) due to its focus on improving the safety of the trunk road and motorway network.</p> <p>Junction improvement interventions have the potential to increase road traffic volumes in some locations, as they may lead to operational benefits. Whilst this could cause a minor increase in transport-based greenhouse gas emissions, the introduction of other measures to promote public transport, delivered in conjunction with any roads-based intervention, would help</p>

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																<p>to mitigate this. Any opportunity to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring interventions for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>Any increased traffic could also potentially adversely affect air quality and noise, however, overall the interventions included within this recommendation are</p>

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															<p>expected to have a neutral effect against Population and Human Health (Objectives 3 and 5).</p> <p>Depending on the source and type of materials/natural resources used in construction, there is the potential for negative effects on natural resources (Objective 9). There is a potential opportunity for interventions to improve surface conditions, and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer term.</p> <p>The interventions within this recommendation would support connectivity to</p>

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																employment and other services, however, this would be primarily for road-based transport. As the trunk road and motorway network is important to the operation of local bus services and inter-urban services, the interventions could enhance accessibility (Objective 4) however, at a national level, it is anticipated that any benefits are likely to be negligible. Provision for non-motorised users would also be a consideration as part of the design of individual interventions to address any specific safety and/or severance challenges. Both negative and positive effects

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															<p>have been predicted in relation to quality of life and sustainable accessibility (Objective 4).</p> <p>There is the potential for negative environmental effects during the construction and operation of the types of interventions in this recommendation on SEA objectives related to the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). Some of these effects relate to the construction footprint locations and may be difficult to avoid if there are sensitive environmental receptors in the vicinity. However, the scale of</p>

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																<p>the effects is uncertain at this stage and the location, design and timing of construction for the interventions would have a strong influence on the magnitude of the environmental effects.</p> <p>Many of the interventions associated with this recommendation are likely to be small-scale and have only localised and non-significant environmental effects.</p> <p>However, it is recommended that further environmental assessment is undertaken on a case-by- case basis as individual interventions are progressed through the design and development process in order to assess the location</p>

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																<p>and scale of specific environmental effects as well as to identify appropriate mitigation where required. Design and construction environmental management plans would also be recommended to consider how to protect and enhance landscape, drainage, amenity, biodiversity and cultural heritage. It is also recommended that further cumulative effects assessment and environmental mitigation and enhancement measures proposed can be embedded in any interventions that are implemented.</p> <p>Overall, this recommendation is expected to have a minor</p>

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																negative effect against this criterion in both the Low and High scenarios.
Trunk road and motorway network climate change adaptation and resilience	31	?	+	?	+	?	0	+	0	?	?	?	?	?	?	Adapting or improving the resilience of the trunk road and motorway network to the impacts associated with climate change (flooding, landslides and erosion) should lead to an improvement in the reliability of the network. This recommendation would therefore be likely to support some of the SEA objectives related to quality of life, sustainable accessibility and safety (Objectives 4 and 7), particularly on routes susceptible to impacts. It is also likely to support climate

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		Yellow	Green	Yellow	Light Green	Yellow	Light Green	Light Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	<p>change adaptation (Objective 2) due to increased adaptation and resilience of the trunk road and motorway network to current and future climate change.</p> <p>While this recommendation is not expected to have a notable effect on mode shift, a focus on adapting the existing network is not anticipated to increase traffic volumes or associated emissions. It is therefore not anticipated that this recommendation would have a negative impact on greenhouse gas emissions (Objective 1) or air quality (Objective 3). Similarly, as traffic levels are unlikely to change, significant noise</p>

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																<p>effects are unlikely, although this may be dependent on the proximity of noise sensitive receptors (Objective 5).</p> <p>While there is the potential for a negative effect resulting from the use of natural resources associated with asset improvements (Objective 9), this should be balanced against potentially reducing the requirement for materials for recurring repairs with focus given to the source and type of materials/natural resources used in construction.</p> <p>Any opportunity to employ methods for decarbonisation of construction through innovation in design, procurement and construction,</p>

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																<p>should be identified as part of the design and development process, whilst adhering to relevant standards. Similar work undertaken to date in exploring options for decarbonising construction on other road schemes could be used as a basis for developing these methods.</p> <p>There is potential for negative environmental effects during the construction and operation of road schemes related to adaptation and resilience, on the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14).</p>

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																<p>Given the nature of the recommendation, it is not considered there would be a significant effect on developing a high-quality public realm (Objective 6) or the sustainable use of the transport network (Objective 8). Therefore, a neutral effect is anticipated on these objectives.</p> <p>The environmental effects (positive or negative) would be determined by the location, complexity, scale and design of any climate change adaptation and resilience improvements on specific routes. These effects are largely related to the construction footprint of any</p>

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																<p>interventions. It is recommended that further environmental assessment is undertaken as options develop to identify potentially significant location specific environmental impacts and mitigation where appropriate. This may identify mitigation opportunities, such as the re-use of construction materials which would align with circular economy principles and may also present opportunities for improving biodiversity in the long-term with adoption of the principle of securing positive effects for biodiversity.</p> <p>Overall, the cumulative environmental effects are scored minor positive for this</p>

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																recommendation, as there are likely to be positive effects on climate change and communities. This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios
Trunk road and motorway network renewal for reliability, resilience and safety	32	?	+	?	++	~	~	++	0	?	?	?	?	?	?	This recommendation is likely to result in significant positive effects on the safety of the trunk road and motorway network and access to essential services (SEA Objectives 4 and 7). It is also likely to improve climate change adaptation (SEA Objective 2), by increasing the resilience and adaptation of

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																<p>the road network to the effects of climate change.</p> <p>While this recommendation is not expected to have a notable effect on modal shift, a focus on maintaining the existing road network as opposed to building new infrastructure is not anticipated to significantly increase traffic volumes or associated emissions. Furthermore, a poorly maintained network which deteriorates beyond the point of repair can require more substantial work as well as involve more unplanned emergency repairs with associated emissions. It is therefore not anticipated that this would have a negative</p>

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																<p>effect on greenhouse gas emissions or air quality (SEA Objectives 1 and 3 respectively).</p> <p>This recommendation supports a coordinated and packaged approach to tackle all issues at a location, to reduce the number of roadworks and associated congestion as well as the need for diversions in some instances. It would also reduce the number of trips required to undertake works. This approach can therefore be expected to have less of an impact on the greenhouse gas emissions (SEA Objective 1) associated with maintenance of the trunk road and</p>

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																<p>motorway network. Improved road conditions can also reduce fuel consumption due to greater running efficiency.</p> <p>While there is the potential for negative effects on natural resource requirements associated with asset improvements (SEA Objective 9), depending on the source and type of materials/natural resources used, this should be balanced against the interventions potentially reducing the requirement for materials for recurring repairs, should they not be made at the optimum time.</p> <p>There is potential for negative environmental effects during construction on the water</p>

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																<p>environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). Effects on landscape and visual amenity could also potentially apply to the operational phase.</p> <p>There is no (or negligible) clear relationship to the achievement of the remaining SEA objectives (Objectives 5 and 6).</p> <p>It is recommended that further environmental assessment is undertaken as options develop to identify potentially significant location-specific environmental effects and mitigation where appropriate, for example, if a new link road is considered as part of the</p>

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																Fort William Integrated Transport Plan. This future environmental assessment should also identify areas for re-use of materials, adhering with circular economy principles. In addition, any opportunity to employ methods for decarbonisation of construction, through innovation in design, procurement and construction methods, should be identified as part of the design and development process. Similar work undertaken to date in exploring options for decarbonising construction could be used as a basis for developing these methods.

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																Overall, this recommendation is expected to have a neutral effect in terms of the SEA assessment, under both the Low and High scenarios. For the Low Scenario, the magnitude of effects will be less than for the High Scenario due to the reduction in travel.
Future ITS	33	+	+	+	+	0	~	+	+	~	0	0	0	0	0	This recommendation is likely to support SEA objectives related to quality of life and safety (Objectives 4 and 7) and climate adaptation (Objective 2) due to improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and

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																<p>severe weather incidents on the trunk road and motorway network. Minor positive effects are also assessed in relation to the sustainable use of the transport network (Objective 8), due to improvements in transport technology.</p> <p>This recommendation would likely result in positive effects on the SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as the recommendation is expected to improve traffic flows, which in turn can help reduce fuel consumption.</p> <p>It is considered that there would be a negligible effect on the remaining SEA objectives</p>

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																<p>(Objectives 6 and 9) as the recommendation is not directly related to them. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to noise and vibration (Objective 5), the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (SEA Objectives 10 to 14) and therefore these are considered neutral.</p> <p>Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
Traffic Scotland System renewal	34	?	+	?	+	0	~	+	+	~	0	0	0	0	0	<p>The recommendation is likely to support some of the SEA objectives related to climate adaptation (Objective 2), quality of life (Objective 4) and safety (Objective 7) due to improved journey reliability and safety and resilience of the road network through management during incidents or severe weather events. Minor positive effects are also assessed in relation to the sustainable use of the transport network (Objective 8), due to improvements in transport technology and the resulting improvements to the overall sustainability of the network.</p>

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																<p>Uncertain effects have been assessed in relation to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as it is uncertain whether the recommendation would result in a reduction or increase in the emissions of the transport system. Although improvements may result in the smoother flow of traffic and reduction of congestion, this may encourage greater use of the transport network generally.</p> <p>It is considered that there would be neutral or negligible effects on the remaining SEA objectives as the recommendation is not directly</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																related to them. However, it is not assessed to result in any negative effects on the achievement of SEA objectives related to noise and vibration (Objective 5), the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). Overall, this recommendation is anticipated to have a neutral effect on this criterion in both the Low and High transport behaviour scenarios.
ITS renewal and replacement	35	?	+	?	+	0	~	+	+	?	0	0	0	0	0	The recommendation is likely to support SEA objectives related to climate adaptation (Objective 2), quality of life

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																<p>(Objective 4) and safety (Objective 7) due to improved journey reliability and safety and resilience of the road network through the planning, monitoring, control, co-ordination and response to major travel incidents and severe weather incidents on the trunk road network. Minor positive effects are also assessed in relation to the sustainable use of the transport network (Objective 8), due to improvements in transport technology.</p> <p>Effects in relation to SEA objectives for reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3) are</p>

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																<p>unclear at this stage and depend on whether the recommendation would result in a reduction or increase in the emissions of the transport system generally and the extent of modal shift. Effects in relation to the use of natural resources (Objective 9) need further assessment as the design/extent of new roadside infrastructure is unknown at this stage.</p> <p>It is considered that there would be no significant effects on the remaining SEA objectives as the recommendation is not directly related to them. However, it is not assessed to result in any negative effects on the</p>

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																<p>achievement of SEA objectives related to noise and vibration (Objective 5), the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). However, if new infrastructure is proposed for areas where it doesn't currently exist (for example, new gantries and cameras), then further environmental assessment is likely to be required to ensure there are no, or minimal, negative effects on landscape/ townscape and visual amenity. Overall, this recommendation is anticipated to have a minor positive effect on this criterion</p>

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																in both the Low and High scenarios.
Strategy for improving rest and welfare facilities for hauliers	36	0	~	~	+	~	0	+	0	~	~	~	~	~	~	This recommendation is likely to result in positive effects on SEA objectives related to quality of life and safety (SEA Objectives 4 and 7), particularly in relation to improving safety on the transport network and access to essential services. The recommendation is related to, but unlikely to have any effect on, reducing greenhouse gas emissions (Objective 1), developing high quality places (Objective 6) and the sustainable use of the transport network (Objective 8)

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																<p>and is therefore considered neutral.</p> <p>Given the nature of the recommendation, auditing to inform decision making for improvements to rest and welfare facilities for freight, the recommendation has no (or negligible) clear link to the achievement of many of the SEA Objectives. This includes climate adaptation (Objective 2), air quality (Objective 3), noise and vibration (Objective 5), and SEA Objectives related to natural resource usage, the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 9 to 14).</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																Following future decision making, it is recommended that rest stop proposals should be further assessed, in order to identify potentially significant location-specific environmental effects and mitigation where appropriate. Overall, this recommendation is expected to have a neutral effect on this criterion in both the Low and High scenarios.
Improving active travel on trunk roads through communities	37	+	0	+	+	+	+	+	0	0	0	0	0	?	?	This recommendation would likely result in positive effects on reducing greenhouse gas emissions and improving air quality (SEA Objectives 1 and 3 respectively) due to promoting a modal shift to more sustainable active travel

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															<p>options and, as a result, reducing greenhouse gas and air pollutant emissions. Positive effects are anticipated on four SEA Objectives that fall under the population and human health SEA topic. These objectives are related to quality of life and sustainable accessibility, noise and vibration, the public realm and safety (Objectives 4 to 7). This is due to an expected increase in users choosing more sustainable and safe routes to local amenities and a prioritisation of pedestrians in the public realm. Safer crossings are also likely to result in a small net decrease in road traffic collisions.</p>

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																<p>Further environmental assessment will be required as individual interventions are developed to determine local effects on cultural heritage and landscape and visual amenity (Objectives 13 and 14 respectively). Neutral effects are anticipated for the remaining SEA objectives, including biodiversity, soil and water, due to the focus of hubs within urban locations.</p> <p>This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>

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Speed Management Plan	38	+	0	+	+	+	~	++	0	0	0	0	0	0	0	<p>The recommendation is anticipated to lower the average speeds of vehicles, which is likely to result in moderate positive effects on the SEA Objective related to safety (Objective 7), due to improvements in safety on the road network.</p> <p>Minor positive effects have been assessed in relation to reducing greenhouse gas emissions (Objective 1), improving air quality (Objective 3) and quality of life (Objective 4), as reduced speeds should help to reduce greenhouse gas and other vehicle emissions, whilst also potentially encouraging a</p>

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																<p>mode shift to active travel within urban areas.</p> <p>Similarly, a reduction in speed limit is anticipated to reduce noise and vibration (SEA Objective 5), which has been assessed as a minor positive effect.</p> <p>The recommendation has no (or negligible) clear relationship to the achievement of SEA Objective 6, which relates to the development of high-quality places. The recommendation is not anticipated to adapt the transport network to the effects of climate change or reduce the use of natural resources and therefore is unlikely to have a notable</p>

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																effect on the achievement of SEA Objectives 2 (climate adaptation), 8 and 9 (sustainability of the transport network and natural resource usage). In addition, it is considered unlikely to have a notable effect on the achievement of the remaining SEA objectives. Although further research is required through the development of the speed management plan, this recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.
Sustainable access to	39	+	~	+	+	+	+	+	+	?	0	0	0	?	?	This recommendation is likely to result in positive effects on

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Grangemouth Investment Zone																the SEA objectives related to greenhouse gas reduction and improving air quality (SEA Objectives 1 and 3), as it seeks to encourage a modal shift to more sustainable and active travel methods and reduce traffic and congestion through improved active travel and bus connections. This may help improve air quality within at least some parts of the Grangemouth Air Quality Management Area. However, air quality would need to continue to be closely monitored to ensure improvements in some areas are not counteracted by any worsening of air quality in other locations. In addition to

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																<p>helping reduce levels of transport related air pollution and carbon emissions, this recommendation is likely to help reduce transport related noise and vibration and improve the quantity and/ or quality of active travel routes and hence quality of life (Objectives 4, 5 and 6).</p> <p>The recommendation would also help improve the sustainability of the transport network (Objective 8) and safety (Objective 7) as it mostly promotes a more sustainable use of the existing transport routes to Grangemouth, reducing private vehicle usage and encouraging sustainable</p>

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																<p>access and increased travel choice.</p> <p>There are uncertain environmental effects during construction and operation of the recommendation, particularly on natural resource requirements, cultural heritage and landscape and visual amenity (Objectives 9, 13 and 14) depending on the design and location of the interventions.</p> <p>The recommendation has no significant relationship to the achievement of Objective 2 (climate change adaptation).</p> <p>Whilst the recommendation is related to the remaining SEA objectives, it is unlikely to have</p>

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																<p>a notable effect on the achievement of these objectives.</p> <p>Further environmental assessment would be required as individual interventions (such as M9 junction improvements and/or any new infrastructure) are developed to determine local effects on landscape/townscape, visual amenity (Objective 13) and cultural heritage (Objective 14). This assessment should also include any necessary mitigation for expected construction stage effects, for example relating to air quality, embodied carbon and greenhouse gas emissions,</p>

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																noise and vibration, amenity, accessibility and nuisance. Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
Access to Stranraer and the ports at Cairnryan	40	-	?	-	-	?	~	+	-	?	?	?	?	?	?	In relation to access to Stranraer and the ports at Cairnryan, there are designated environmental sites such as Sites of Special Scientific Interest and Special Protection Areas (SPAs), which are relevant to SEA Objective 11 (biodiversity). These include an inland river Special Area of Conservation (SAC) and large SPA and SAC designations in the

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																<p>coastal and marine environment in the vicinity of Cairnryan. There are various designated heritage sites in the vicinity of Cairnryan, including a large Garden and Designed Landscape, which are relevant to Objective 13 (cultural heritage). Sites or areas that have not been designated may also represent constraints or opportunities.</p> <p>Options in this recommendation, including junction improvements, realignment/widening and overtaking opportunities, would result in potential positive effects on safety (Objective 7) due to the expected improvement in the</p>

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																<p>safety of the trunk road network in South West Scotland.</p> <p>This recommendation is not anticipated to have a notable impact on traffic volumes or mode share and subsequently transport related emissions during the operational phase of implemented options. There is anticipated to be a wider trend towards cleaner vehicles as internal combustion engines are replaced by electric vehicles. However, the construction of these options will have a negative effect on greenhouse gas emissions (Objective 1) and potential short-term negative effects on air quality (Objective 3). Work</p>

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																<p>undertaken to date in decarbonising construction on other road schemes could be used as a basis for developing similar methods for these options.</p> <p>Any increase in the number of vehicles using the trunk road network would cause increases in noise and vibration, although there is the potential to mitigate these impacts. As such, there are unlikely to be significant effects on noise and vibration (Objective 5) as no notable increase in traffic volumes would be anticipated.</p> <p>Construction-stage mitigation for noise and vibration will be required.</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>A minor negative effect is assessed in relation to quality of life and accessibility via sustainable transport (Objective 4), as although the options within this recommendation would support connectivity to employment, education and other services, this would primarily apply to road-based transport. This would also have a negative effect on Objective 8, which relates to sustainable transport methods and the sustainable use of existing infrastructure. The A75 and A77 are, however, important to the operation of local bus services as well as inter-urban services in South</p>

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															<p>West Scotland, and provision for non-motorised users would be a consideration as part of the design of individual options to address any specific safety and/or severance challenges. The South West Scotland trunk road network is also crucial in providing connections to Northern Ireland via the ports at Cairnryan.</p> <p>Depending on the complexity and scale of individual schemes, moderate to major quantities of materials and construction-related trips would be required for overtaking opportunities and realignment/widening. Depending on the source and</p>

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																<p>type of materials/natural resources used, there is the potential for negative effects on natural resource requirements (Objective 9). There is, however, the potential opportunity for schemes to improve surface conditions and, alongside advancement in the types of materials used, reduce overall maintenance needs in the longer-term.</p> <p>There is the potential for negative environmental effects during the construction and operation of the types of options within this recommendation on SEA objectives related to the water environment, biodiversity</p>

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																<p>(including the designated sites mentioned above), soil, cultural heritage (including the designated sites mentioned above), and landscape and visual amenity (Objectives 10 to 14). However, the scale of the effects is uncertain at this stage and the location of the options will have a strong influence on this.</p> <p>Further environmental assessment, including cumulative effects assessment, will be required as individual options are progressed through the design and development process in order to assess the location and scale of specific environmental effects as well</p>

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																<p>as to identify appropriate mitigation where required. Design and construction environmental management plans would also be recommended to consider how to protect and enhance landscape, drainage, amenity, biodiversity and cultural heritage. The additional environmental assessment would inform the development of environmental mitigation and enhancement measures, which should in turn influence the alignment and design of any final options.</p> <p>The potential relocation of the rail station in Stranraer would do little to reduce the distance between the station and the</p>

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																<p>ports at Cairnryan – thus limiting the potential for passenger and freight modal shift – and therefore would not be expected to contribute to reducing emissions. As such, this specific option is not considered to have a significant effect on climate adaptation (Objective 2). However, further environmental assessment may be required, depending on which site(s) might be considered for a relocated station.</p> <p>The recommendation has no (or negligible) clear relationship to the achievement of SEA Objective 6 (high quality places).</p>

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																Overall, the environmental effects are assessed to be minor negative for this recommendation in both the Low and High scenarios as there is the potential for some options to detract from SEA objectives, with the effects determined by the location, complexity, scale and design of individual schemes.
Potential Sound of Harris / Sound of Barra Fixed Link and Fixed Link between Mull and	41	-	+	-	+	~	~	~	+	-	-	-	-	-	-	A fixed link within the Outer Hebrides archipelago, and/or a fixed link between Mull and the Scottish mainland is likely to result in positive effects on the SEA objective related to quality of life (Objective 4) due to improved accessibility and reduced severance. The fixed links are also likely to result in

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Scottish mainland															<p>positive effects on achieving a sustainable transport network (Objective 8) through supporting plans for future capacity of public transport, taking demographic and other societal changes into account.</p> <p>The recommendation is also likely to result in minor positive effects on climate adaptation (Objective 2) as the fixed links would help adapt the transport network to the direct / indirect risks associated with climate change and maintain / improve access to and within isolated island communities at risk from climate change effects.</p> <p>The implementation of a Sound of Harris fixed link and a Sound of Barra fixed link</p>

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																<p>and/or a fixed link between Mull and the Scottish mainland has the potential for negative effects on SEA objectives related to greenhouse gas emissions (Objective 1) and air quality (Objective 3) due to the potential for an increase in motorised traffic within the Outer Hebrides archipelago, and to and from the mainland respectively. There are also likely to be significant carbon impacts associated with the construction process, construction traffic and construction materials.</p> <p>Negative effects are also anticipated on natural resource usage, the water environment, biodiversity, soil,</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage
															<p>cultural heritage and landscape and visual amenity (Objectives 9 to 14) during construction and operation of the fixed links due to the introduction of new infrastructure into the marine and coastal environment, the scale of the infrastructure proposed and the proximity to multiple environmental designations. In relation to a fixed link between Mull and the Scottish mainland these designated areas include multiple Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) and Marine Protected Areas (MPA);</p>

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															<p>together with Local Nature Conservation Sites (LNCS), Local Landscape Designations (LLD), Landscape Character Areas (LCA) and a National Scenic Area (NSA).</p> <p>In relation to the Sound of Harris fixed link the constraints include the Inner Hebrides and Minches SAC, West Coast of the Outer Hebrides SPA, North Uist Machair and Islands Ramsar and SPA, North Harris Mountains SPA, South Lewis, Harris and North Uist NSA and Ruisgarry historic Conservation Area; and in relation to the Sound of Barra fixed link they include the West Coast of the Outer Hebrides SPA, Sound of Barra</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage
															<p>SAC, Inner Hebrides and the Minches SAC, Machair LCA and Prominent Hills and Mountains LCA.</p> <p>As is standard with marine infrastructure developments, further environmental assessment would be required to identify location-specific environmental effects and mitigation where appropriate.</p> <p>The recommendation has no (or negligible) clear relationship to the achievement of SEA Objectives 5 (noise and vibration), 6 (high quality places) or 7 (safety).</p> <p>This recommendation is expected to have a moderate</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																negative effect on this criterion in both the Low and High scenarios.
Investment in port infrastructure to support vessel renewal & replacement & progressive decarbonisation	42	+	~	+	+	?	~	~	+	?	+	?	~	~	?	This recommendation is likely to result in positive effects on the SEA objectives related to greenhouse gas reduction, improving air quality and the water environment (Objectives 1, 3 and 10 respectively), particularly in relation to the achievement of a reduction in transport-related emissions; as the recommendation seeks to reduce emissions from ferries through decarbonisation / use of alternative fuels (electric, hydrogen). It would also have a positive effect on the sustainable use of the transport network (Objective 8)

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															<p>as it promotes a more sustainable use, and management of, the existing transport network. It would have a positive effect on quality of life and noise and vibration (Objectives 4 and 5) as a result of encouraging sustainable access and a move away from diesel engines to alternatives such as electric / hydrogen which could result in a beneficial effect on air quality and noise and vibration for those living or working near ferry terminals during operation.</p> <p>There are also possible positive effects on biodiversity (Objective 11) as a result of a reduction in diffuse pollution</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage		14. Landscape and Visual Amenity
																<p>on key receptors; however, the significance of the effects are uncertain at this stage.</p> <p>There is potential for minor negative effects on noise and vibration (Objective 5) and landscape and visual amenity (Objective 14) during the construction works to facilitate the port infrastructure improvement; however these are unlikely to be significant in the context of the current port operations. Depending on the source and type of materials/natural resources used, there is also potential for negative impacts on natural resource requirements (Objective 9).</p>

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil	13. Cultural Heritage	14. Landscape and Visual Amenity	
																<p>Given the nature of this recommendation, it has no (or negligible) clear link to the achievement of many of the SEA Objectives, including climate adaptation (Objective 2), developing high quality places (Objective 6), safety (Objective 7), soil (Objective 12) and cultural heritage (Objective 13).</p> <p>This recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.</p>
Major station masterplans	43	+	~	+	+	~	?	?	?	?	?	?	?	?	?	<p>This recommendation is focused on four major stations in Scotland's cities. Edinburgh Waverley railway station is</p>

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																<p>within the Old and New Towns of Edinburgh, which is designated as a World Heritage Site. There are also 50 Conservation Areas, designated for special architectural or historic interest, and a large number of listed buildings and scheduled monuments. Other designations adjacent to the area include multiple Gardens and Designed Landscapes, Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Marine Protected Areas, and Ramsar Sites. Glasgow Central railway station is located within the</p>

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															Central Area Conservation Area, with several Listed Buildings and Scheduled Monuments situated nearby. In relation to Inverness railway stations, there are various designated sites, with the Inner Moray Firth SPA, SAC, SSSI and Ramsar Site being the largest adjacent to Inverness and playing an important role in the coastal and marine environment. The railway station is also located within the Inverness Conservation Area, surrounded by a number of Listed Buildings and Scheduled Monuments. Perth railway station is located within the Perth Central

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															<p>Conservation Area, with Listed Buildings and Scheduled Monuments situated nearby. There are records of designated sites, including an inland river SAC and large Ramsar Site, SSSI, SPA, and SAC designations in the coastal and marine environment. Sites or areas that have not been designated may also represent constraints or opportunities.</p> <p>This recommendation is likely to result in minor positive effects on SEA objectives related to reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), as it seeks to encourage modal</p>

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																<p>shift to rail, and, as a result, reduce levels of transport related air pollution and carbon emissions. This recommendation would potentially allow clearance for future electrification, potentially reducing greenhouse gas emissions of rail generally. It would also help achieve Objective 4 as it would improve sustainable accessibility. The masterplan designs would need to consider how to benefit walking, wheeling and cycling at and around stations. Station redevelopment works would also be designed to support improvements to visual amenity (Objective 14)</p>

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																<p>and cultural heritage (including the designated sites mentioned above) (Objective 15), through enhancing the visibility of the Grade A listed ticket hall at Edinburgh Waverley and historic buildings at Perth Station, some of which are currently obscured. However, the station design would need to be sympathetic to cultural heritage resources, including their setting. Consultation with Historic Environment Scotland in relation to this would be required.</p> <p>For most other SEA Objectives, the effects are considered uncertain as the effects would be determined</p>

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																by the design (and physical footprint) of the masterplans. The recommendation has no (or negligible) clear relationship to the achievement of Objective 2 (climate change adaptation) and effects on noise and vibration (Objective 5) are also expected to be negligible overall. Overall, this recommendation is expected to have a minor positive effect on this criterion in both Low and High scenarios.
Rail freight terminals and facilities	44	+	~	+	~	~	~	+	+	?	?	?	?	?	?	The future development of rail freight terminals by private sector partners has the potential to result in positive

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																effects on SEA objectives related reducing greenhouse gas emissions (Objective 1) and improving air quality (Objective 3), particularly in relation to the achievement of a reduction in transport related air pollution and carbon emissions, as it seeks to improve the use of sustainable modes of transport through modal shift of freight from road to rail; reducing the number of freight vehicles and the associated congestion. It is also likely to have a positive effect on safety (SEA Objective 7) due to improved safety on the transport network.

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		1. Climate Mitigation	2. Climate Adaptation	3. Air Quality	4. PHH Quality of Life	5. PHH Noise and Vibration	6. PHH High Quality Places	7. PHH Safety	8. Material Assets Sustainability	9. Material Assets Natural Resources	10. Water Environment	11. Biodiversity	12. Soil		13. Cultural Heritage	14. Landscape and Visual Amenity
																<p>The recommendation would also potentially result in a positive effect on the sustainability of the transport network (Objective 8) as it would promote a more sustainable use and management of the existing transport network.</p> <p>There are possible positive effects on the SEA objectives relating to the water environment, biodiversity and soil (Objectives 10, 11 and 12 respectively) as a result of a reduction in diffuse pollution on key receptors; however, the significance of these effects are uncertain at this stage.</p> <p>Depending on the source and type of materials/natural</p>

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																<p>resources used to construct any new infrastructure, there is potential for negative effects on natural resource requirements (SEA Objective 9). As such, it is recommended that further environmental assessment be undertaken as the recommendation develops to identify areas for re-use of construction materials, adhering with circular economy principles.</p> <p>Depending on the location and nature of the terminals and facilities, there is potential for negative environmental effects during construction and operation of the improvements, particularly on</p>

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																<p>water, biodiversity, soil, cultural heritage and landscape and visual amenity (Objectives 10 to 14). It is therefore recommended that further environmental assessment is undertaken when the locations of new infrastructure are identified in order to identify potentially significant location-specific environmental effects and mitigation where appropriate.</p> <p>The recommendation has no (or negligible) clear relationship to the achievement of Objective 2 (climate change adaptation), Objective 4 (quality of life), Objective 5 (noise and</p>

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																vibration) or Objective 6 (high quality places). Overall, this recommendation is expected to have a minor positive effect on this criterion in both the Low and High scenarios.
High speed and cross - border rail enhancements	45	+	-	+	?	?	?	?	+	-	-	-	-	-	-	New HSR's encourage modal shift towards rail, which is substantially better for reducing operational greenhouse gas and air pollutant emissions in comparison to private car usage or domestic flights (SEA Objectives 1 and 3). National rail journeys produce 41g of CO ₂ /km, compared to 154g of CO ₂ /km for the sole driver of a small petrol car, or 255g of

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																<p>CO₂/km for domestic flights (UK BEIS). A UIC study on HSR in France and China concluded that the carbon footprint of HSR can be up to 14 times less carbon intensive than car travel and up to 15 times less than aviation travel, even when measured over the full life cycles of planning, construction and operation of the different transport modes.</p> <p>A connected HSR network can provide a viable alternative to domestic flights. UIC research indicates that where rail travel time is less than three hours 30 minutes then rail is the dominant mode compared to air.</p>

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																Construction of new HSR infrastructure would have a significant effect on the local environment. There is likely to be significant land take and impacts for climate change adaptation (Objective 2) and the objectives related to the water environment, biodiversity, soil, cultural heritage and landscape and visual amenity (SEA Objectives 10 to 14) that would need to be mitigated. The local environmental and cultural heritage sensitivities of any rail infrastructure upgrades need to be considered at the earliest stage. For example, the East Coast Mainline runs directly

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																through protected Battlefields Inventory sites and the Glasgow and South-Western Line is adjacent to multiple protected sites of biodiversity or geological importance. There are also multiple heritage designations within and around stations on these routes, for example the Old and New Towns World Heritage Site designation in Edinburgh. There are also potential positive and negative effects on the objectives that relate to quality of life, noise and vibration, developing high quality places and the safety of the transport network (Objectives 4 to 7). Whether the effects are positive or

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																negative will depend on the location of the construction footprint and route, location of sensitive receptors and the design. There are also likely to be positive and negative effects on the sustainability of the transport network (Objective 8) but the criteria for assessing this objective show that these effects are likely to be largely positive, for example through increasing the capacity of the public transport network. By contrast, the effects on Objective 9 are likely to be negative due to the natural resource requirements associated with large scale construction. The embodied carbon associated with new

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																<p>HSR infrastructure would also need to be calculated to accurately determine the effects on Objective 1 in relation to greenhouse gas emissions. Further environmental assessment would therefore be required as further detailed work is undertaken on developing this recommendation.</p> <p>Overall, this recommendation is expected to have at least a minor negative effect against this criterion in both Low and High scenarios. This is primarily due to the construction footprint and significant environmental effects that may be difficult to avoid or mitigate for.</p>

