STRATEGIC TRANSPORT PROJECTS REVIEW

PROTECTING OUR CLIMATE AND IMPROVING LIVES

STPR

Appendix H: Detailed Packaging - Appraisal Summary Tables

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Contents

Draft Shetland Region Appraisal Summary Table

An Appraisal Summary Table (AST) has been developed for each of the eleven STPR2 Regions alongside the National AST. The ASTs are set out to provide:

- Regional Context, Problems and Opportunities – drawing on data presented in the Initial Appraisal: Case for Change reports this summarises geographic, social, economic, environmental and transport matters in the region as well as the identified problems and opportunities. In line with STAG, appraisals are expected to explore location-specific problems and opportunities. Local problems and opportunities have been considered to gain a full understanding of the regional and national issues, however some of these may not be within the scope of this strategic study.
- Regional Recommendations – this presents the package of recommendations that were included in the detailed appraisal for the region.
- Fit with Policy – provides a summary of how well the appraised packages fit with key national policies including the second National Transport Strategy, Climate Change Plan Update, the Revised Draft Fourth National Planning Framework (Revised Draft NPF4) and relevant regional policies.
- Transport Planning Objectives (TPO) Assessment – An assessment against each of the five TPOs is provided with quantified metrics, where appropriate, under the Low growth sensitivity with a 20% reduction policy ambition on car kilometres scenario (hereafter referred to as Low scenario) and High growth sensitivity with no policy ambition on car kilometres scenario (hereafter referred to as High scenario) (further information about these scenarios is provided in Appendix F of the Technical Report). A seven point scoring scale is adopted for each TPO which is:
  - + + + = major positive (3 plus signs)
  - + + = moderate positive
  - + = minor positive
  - 0 = neutral
  - - = minor negative
  - - - = moderate negative
  - - - - = major negative (3 minus signs)
- STAG Criteria assessment – as above for the TPO assessment, key points regarding the performance of the package against each of the STAG criteria is presented with quantified metrics provided where appropriate.
- Deliverability – commentary is provided on the assessment of the package in terms of its feasibility, affordability and public acceptability. Note that due to the nature of a number of the STPR2 interventions, and the stage in the business case process STPR2 is at, it has not been possible to derive cost estimates on a regional basis. However, broad capital spending ranges have been estimated over the period 2022 to 2042 at a national level.
- Statutory Impact Assessment Criteria – a summary of the performance of the packages against the Strategic Environment Assessment (SEA), the Equalities Impact Assessment (EqIA), Island Communities Impact Assessment (ICIA), Fairer Scotland Duty Act (FSDA) and, Child Rights and Wellbeing Impact Assessment (CRWIA) is provided. The seven point scoring scale is adopted in these assessments where appropriate.

Summary of Assumptions

Quantification of the costs and benefits in the packages has been provided through a modelling exercise. Further information is provided in Appendix F of the Technical Report on the modelling scenarios that have informed the assessment of the STPR2 interventions. A summary of the key assumptions is provided here:

- Population projections are based on the NRS Population Projections (2018-based).
- Economic projections are a combination of projections by Oxford Economics, 2019, the Scottish Fiscal Commission forecasts and more recently the OBR post-COVID estimates.
- Land-use plans are based on data collected for Transport Scotland's Assembly of Planning Policy Inputs in 2018 from Scotland's 34 Planning Authorities.
- Permitting of vacant office and retail floorspace to be converted or redeveloped as housing post 2030.
- Working age is taken to be 16-64 (as a constant) to avoid difficulties with changing state pension age (and to reflect non-mandatory retirement)
- The economic results are presented, as is standard within appraisal as discounted values in 2010 prices.

Modelling Tools

For the purposes of modelling accessibility by public transport, NaPTAT (National Public Transport Accessibility Tool) has been used. This allows an assessment of journey time to be compared between the with and without STPR2 package.

Due to the strategic and national nature of STPR2, the national Transport Model for Scotland (TMfS) has been used. TMfS is a national scale model with a focus on inter-urban trips. As such, whilst TMfS provides a suitable level of robustness at this stage of the appraisal for most of the larger infrastructure based interventions, there are limitations associated with the modelling of smaller/discrete interventions and also some of the larger infrastructure interventions that involve changes to the existing road network and are more urban in nature. Separate forecasts of the potential impacts of active travel recommendations on walking and cycling mode share have therefore been made. As the recommended interventions are developed through the business case process, more detailed modelling will be undertaken using regional and / or local models as appropriate.

When considering the outputs presented in this AST, please note the following metrics with respect to the model outputs:

- **CO_2 emissions:** Likely to underestimate the benefits associated with public transport interventions due to the more limited representation of transport systems in urban areas and a degree of insensitivity to mode shift in TMfS.
- **Mode Share:** Likely shift to public transport modes underestimated in urban areas due to the more limited representation of urban transport systems and a degree of insensitivity to mode shift in TMfS.
- **Change in vehicle kilometres travelled:** Likely to underestimate the benefits of reducing vehicle kilometres travelled particularly for short distance journeys due to the more limited representation of urban transport systems and the relative coarseness of

the model zone system.

- **Lost Time due to congestion:** Likely to underestimate the benefits associated with interventions that would reduce roadspace due to the under-representation of the local/secondary road network in TMfS.

- **Change in accidents:** Likely to underestimate the benefits associated with mode shift to public transport interventions due to the more limited representation of urban transport systems and a degree of insensitivity to mode shift in TMfS.

- **Present Value of Benefits:** Likely to underestimate the benefits to public transport users due to the more limited representation of urban transport systems. Likely to overestimate the dis-benefits to car-based trips due to the under-representation of the junctions and local/secondary road network in TMfS.
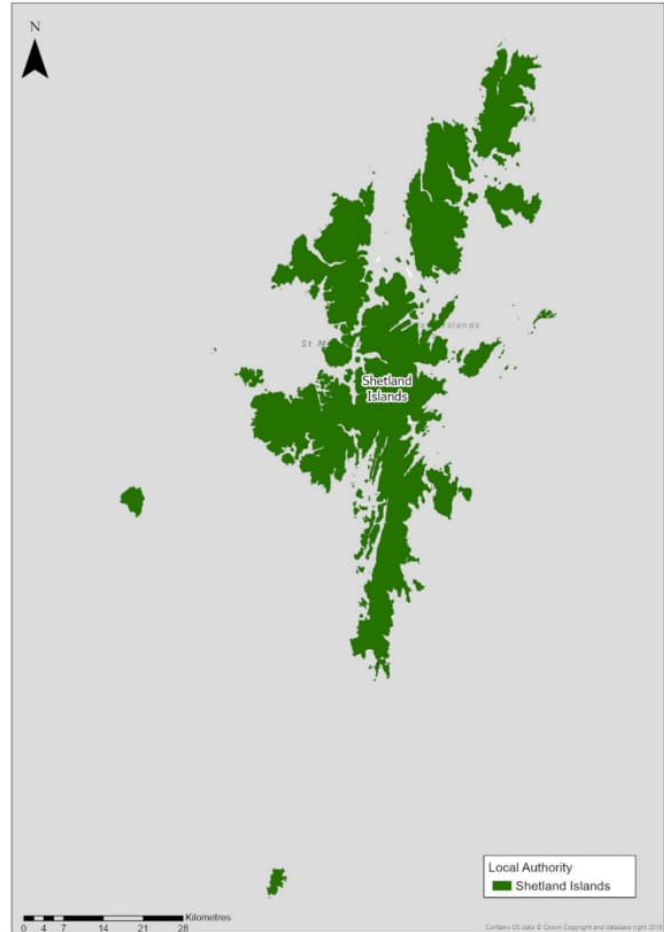
1. Regional Context

1.1. Geographical Context

The Shetland Islands Region (herein referred to as 'the Region') consists of the Shetland Islands Council area. The Scottish Government Urban Rural Six-Fold Classification identifies the entirety of the Region as remote rural, with the exception of Lerwick which is classified as a remote small town.

The Region has a wide-ranging transport network including active travel, bus and road networks as well as internal and external ferry links, with external routes between Lerwick, Kirkwall and Aberdeen. For the purposes of STPR2, Lerwick is considered as a major port and the Region's strategic transport network is limited to the subsided external ferry services between Lerwick, Kirkwall and Aberdeen, which are operated by Serco NorthLink.

The geographic remoteness of the Region creates a unique situation whereby businesses, residents and visitors travel large distances between the Region and the Scottish mainland, relying heavily on the aviation and ferry networks, for the movement of both goods and people. Due to its remoteness, the Region is ranked within the most deprived decile for the geographic access domain, which captures the issues of financial cost, time, and inconvenience of having to travel to access basic services within the Region.

1.2. Social Context

According to the National Records of Scotland's Mid-year Population Estimates Scotland, between 2011 and 2019, the Region's population reduced by 1.1% to 22,920, which was 0.4% of the total population of Scotland. Given the small population size and the large geographic area of the Region, the population density is considerably lower (16 persons per square kilometres) than the national average (70 persons per square kilometres). The most populated settlement in the Region is Lerwick, with one-third of the Region's population. Based on population change by age between 2011 and 2019, as captured in the 2019 Mid- year population estimates for Scotland, the working age population of the Region decreased by 6% whilst remaining stable in Scotland as a whole, and the percentage of those aged 65 and over within the Region increased by 24%. As such, although the Region's population size is relatively stable, the demographic is shifting

towards an ageing population. Based on their population and accessibility, Shetland Islands Council, Na h-Eileanan Siar, and Orkney Islands Council were selected as the most representative local authorities for the Islands benchmark figure. This benchmark was used to compare the performance of solimate changecio-economic indicators for the Region against comparable areas. Overall, the proportion of households with access to one car or van and households with access to 3 or more cars is considerably higher than the national average. Commuter bus journeys in the Region (3%) are comparable to the Islands benchmark but considerably lower than the national average (10%). Most commuter journeys (17.4%) were less than 2 kilometres, which is higher than the national average for this distance (13.1%). Commuter journey distances in the Region are generally comparable to the Islands benchmark.

Within the Region, only 3.6% of people did not obtain any qualifications in 2019, which was 6.2 percentage points lower than the national benchmark stated in NOMIS Local Authority Profile. Relative to all other regions in STPR2, between 2014 and 2019 the Region experienced the largest decline (-12.8 %) in people obtaining the highest level of qualifications (NVQ4+). As measured by the Scottish Index of Multiple Deprivation (SIMD 2020), there are no data zones in the Region within the 20% most deprived data zones in Scotland. However, pockets of deprivation exist within data zones surrounding Lerwick North which recorded high levels of crime and health deprivation, and on the islands of Yell and Unst which recorded high levels of income deprivation.

1.3. Economic Context

The Region has 0.4% of Scotland's total population and accounted for 0.5% of Scotland's Gross Value Added (GVA) in 2018 in evidence from ONS Regional GDP. Economic activity refers to an estimation of whether usual residents aged 16 to 64 were in work or actively looking for work. In recent years (between 2014 and 2019), the Region experienced large decreases in economic activity (-6.3%) and employment (-3.6%), where the national average experienced an increase (+2.2%) in employment and a stable economic activity rate over the same period. However, in 2019 economic activity in the Region was higher than the national average. The level of benefits claimants in the Region is low; between 2014 and 2019, the Region's claimant levels accounted for only 0.2% of Scotland's total claimants (compared to 0.4% of the population).

The Region's economy currently has widespread activity across sectors with particularly high levels of employment in the agriculture, forestry, and fishing sector and the human health and social work sector. Between 2013 and 2017, a number of industries grew in significance: mining, manufacturing, and utilities (+19%), agriculture, forestry, and fishing (+20%), transportation and storage (+25%), and administration and defence (+60%). In 2018, the significance of the agriculture, forestry, and fishing sector in the Region was 15.7 percentage points greater than the national average. The tourism sector also experienced notable growth in the Region, with a contribution to the local economy 56% greater in 2019 compared to 2017.

1.4. Environmental Context

Historic Environment Scotland shows that within the Region, there are many areas classified as environmentally sensitive, with varying levels of statutory protection. Environmental designations include those for biodiversity, landscape and heritage

designations which fall either wholly or partly within the Region. In addition, the Region contains a significant number of historic assets, including two Heritage Marine Protected Areas and 515 Category A-C listed buildings. Cultural heritage assets are scattered throughout the Region, with the main concentration located in Lerwick.

Areas at risk of coastal flooding in the Region are predominantly along the northern coastline; the likelihood of flooding in these areas is high (1 in 10 years). There are several areas at risk of river flooding throughout the Region, however these tend to be localised in nature. Areas at risk of coastal and river flooding are rural in nature, with no major settlements or infrastructure at risk. Peat of varying types dominates the Region's soil type, however class 1 peatland is particularly prevalent across the Region; this class represents nationally important carbon-rich soils, deep peat and priority peatland habitat. There are no Air Quality Management Areas within the Region. Data from UK Government's local authority and regional carbon dioxide emissions national statistics show that in 2018, the Region recorded higher carbon dioxide (CO_2) emissions per capita relative to the Scottish national average, however the percentage of total emissions from transport was notably less (- 18 percentage points) than the Scottish national average.

2. Problems and Opportunities

The following transport-related problems and opportunities have been identified for the Shetland region.

2.1. Problems

- **Ferry and air capacity constraints:** due to the geographic remoteness of the Region, the ferry and air connections are lifeline services. The internal and external ferry networks experience high passenger demand at various times of the year, with freight services operating at high capacity during livestock season. Weight restrictions placed on internal passenger aircrafts and size restrictions placed on the external aircrafts limit the capacity of passenger and freight on these services.

- **Accessibility to public transport:** the majority of the Region has poor weekday bus access, particularly in rural areas of mainland Shetland and on the islands within the Region. The Region's feeder bus services are not Disability Discrimination Act (DDA) compliant and there are few accessible taxis available, restricting access to public transport for those with a mobility impairment. Additionally, a number of Shetland Islands Council ferry vessels and terminals have been deemed "not suitable for wheelchair users or persons with serious mobility problems".

- **Resilience, reliability, and integration:** reliability and resilience issues exist on the internal and external ferry network, with services impacted by adverse weather and external freight services more susceptible to disruption than passenger services. Poor resilience of the internal network is compounded by the ageing ferry fleet. Across the Region, ferry and air services do not integrate with bus services, leading to long waiting times, increasing the reliance on the private car.

- **Affordability:** the Region generally falls within the medium and high-risk bands for transport poverty, with the risk of transport poverty increasing the further away residents live from Lerwick. The Citizens Advice Bureau estimates that 40% of households in the Region are in fuel poverty to some degree, with 13% of households being in 'extreme' fuel poverty, which is exacerbated by the higher-than-average cost of fuel and the high reliance on the private car within the Region. The cost of inter-island commuting is high, particularly for those unable to afford the up-front cost of the internal multi-journey fares, and the cost of external ferry and air services is high, particularly for those not eligible for the Air Discount Scheme (ADS).

- **Connectivity:** physical connectivity within the Region is constrained due to the reduced internal ferry services operating during the winter period. Digital connectivity is low across the Region, with the third lowest average download speed and third lowest level of broadband coverage relative to all other STPR2 regions. Constrained physical connectivity combined with the lack of digital connectivity is considered to exacerbate social isolation, disrupt education, and increase demand on the internal transport work.

- **Emissions:** the Region has one of the highest CO_2 emissions per capita in Scotland and the proportion of CO_2 emissions from the transport sector has grown in recent years, growing from 13% in 2005 to 21% in 2018. The Region's high CO_2 emissions are considered to be inextricably linked with the Region's geographic remoteness,

which can result in long journeys undertaken by carbon-intensive modes from key industries in the Region, such as aquaculture, fishing, and tourism.

▪ **Depopulation:** the Region is experiencing an ongoing challenge to retain and attract working age people. Despite the Region's stable population size, in the past two decades the Region has simultaneously experienced an increase in the proportion of the population aged between 65 and 74 and a decrease in its working age population, resulting in the Region's demography shifting towards an ageing population.

2.2. Opportunities

▪ **Tourism:** the Region's tourism industry has expanded in terms of volume of visitors and geographic reach, improving the resilience of Region's economy.

▪ **Renewable Energy:** harnessing the Region's geographic and technical potential to produce renewable energy and developing a more sustainable transport fleet presents a significant opportunity to reduce the carbon footprint of the area. The Islands Growth Deal, Shetland Clean Energy Project and Islands Hub for Net Zero (a proposed National Development in the Revised Draft NPF4) reflect this ambition.

▪ **Active Travel:** there are opportunities to develop the active travel network in order to increase the number of trips undertaken by walking or cycling. Increasing accessibility to nature via active travel offers socio-economic and environmental opportunities for the Region.

▪ **Economic Development:** there are significant opportunities arising from the Island's Growth Deal for the Region, including the Islands Hub for Net Zero. The fishery and aquaculture industries are areas for economic development within the Region, with forecasts expecting these industries to grow between 5% and 48% from 2018 to 2021.

▪ **Connectivity:** digital connectivity, if improved, provides significant opportunities for island communities reducing the need to travel unsustainably, including reducing the need to travel for employment and education opportunities through increased remote working and learning.

Note that the local problems and opportunities have been considered to gain a full understanding of the regional issues, but options to address these may not be within the scope of this strategic study.

3. Regional Recommendations

The following is a list of interventions that form a package of recommendations that are relevant to this Region.

Regional Recommendations
▪ Connected neighbourhoods (Recommendation 1) ▪ Village-town active travel connections (Recommendation 3) ▪ Connecting towns by active travel (Recommendation 4) ▪ Long-distance active travel network (Recommendation 5) ▪ Behavioural change initiatives (Recommendation 6) ▪ Changing road user behaviour (Recommendation 7) ▪ Increasing active travel to school (Recommendation 8) ▪ Improving access to bikes (Recommendation 9) ▪ Expansion of 20mph limits and zones (Recommendation 10) ▪ Provision of strategic bus priority measures (Recommendation 14) ▪ Supporting integrated journeys at ferry terminals (Recommendation 18) ▪ Infrastructure to provide access for all at railway stations (Recommendation 19) ▪ Investment in Demand Responsive Transport and Mobility as a Service (Recommendation 20) ▪ Improved public transport passenger interchange facilities (Recommendation 21) ▪ Framework for the delivery of mobility hubs (Recommendation 22) ▪ Smart, integrated public transport ticketing (Recommendation 23) ▪ Ferry vessel renewal and replacement and progressive decarbonisation (Recommendation 24) ▪ Decarbonisation of the rail network (Recommendation 25) ▪ Decarbonisation of the bus network (Recommendation 26) ▪ Behavioural change and modal shift for freight (Recommendation 27) ▪ Zero emission vehicles and infrastructure transition (Recommendation 28) ▪ Trunk road and motorway safety improvements to progress towards 'Vision Zero' (Recommendation 30) ▪ Trunk road and motorway network climate change adaptation and resilience (Recommendation 31) ▪ Trunk road and motorway network renewal for reliability, resilience and safety (Recommendation 32) ▪ Future Intelligent Transport Systems (Recommendation 33) ▪ Traffic Scotland System Renewal (Recommendation 34) ▪ Intelligent Transport System renewal and replacement (Recommendation 35) ▪ Strategy for improving rest and welfare facilities for hauliers (Recommendation 36) ▪ Improving active travel on trunk roads through communities (Recommendation 37) ▪ Speed Management Plan (Recommendation 38) ▪ Investment in port infrastructure to support vessel renewal and replacement, and progressive decarbonisation (Recommendation 42)

4. Fit with Established Policy

The interventions included within this package support a wide range of national, regional and local policy documents in which transport improvements play a key role in both the enabling and delivery of outcomes.

Key policies supported include the Programme for Government, Infrastructure Investment Plan, NTS2, Climate Change Plan Update 2018 - 2032 and the Shetland Transport Strategy, as well as non-transport-specific plans, such as the Highlands and Islands Enterprise Operating Plan and Islands Growth Deal.

Interventions included in this package will also support more resilient connections to the Revised Draft Fourth National Planning Framework (Revised Draft NPF4) national development at the Islands Hub for Net Zero.

The policy framework for the Region has a strong emphasis on creating a prosperous economy; on harnessing equitable access to educational and employment opportunities for all; on conserving the Region's natural resources; and on creating healthier communities and a fairer society. The framework is underpinned by the ambition to provide affordable, sustainable, inclusive, innovative, and reliable transport options to provide an attractive place for visitors, to provide opportunities for businesses to invest and grow, and to empower the Region's communities to thrive, the package therefore closely aligning with established policy directives.

Package Performance Against NTS2 Priorities and Outcomes:

Reduce inequalities
Will provide fair access to services we need: Moderate Positive
Will be easy to use for all: Moderate Positive
Will be affordable for all: Minor Positive
Takes climate action
Will help deliver our net-zero target: Moderate Positive
Will adapt to the effects of climate change: Minor Positive
Will promote greener, cleaner choices: Moderate Positive
Helps deliver inclusive economic growth
Will get people and goods where they need to get to: Moderate Positive
Will be reliable, efficient and high quality: Moderate Positive
Will use beneficial innovation: Moderate Positive
Improves our Health and Wellbeing
Will be safe and secure for all: Moderate Positive
Will enable us to make healthy travel choices: Moderate Positive
Will help make our communities great places to live: Moderate Positive

5. STPR2 Transport Planning Objectives (TPOs) Assessment

TPO1 A sustainable strategic transport system that contributes significantly to the Scottish Government's net-zero emissions target

TPO Performance Summary

Carbon dioxide equivalent (CO_2eq) is treated as a nationally important pollutant. As such, although it can be appraised at the national level (commentary below), it has not been appraised for individual regions.

The national and all regional packages overall will contribute significantly to the net-zero emissions target by:

- Enabling more passenger journeys to be made by active modes and public transport.
- Decarbonising most if not all public transport operations.
- Facilitating uptake of electric vehicles.
- Enabling road freight to switch to rail or other low carbon modes.

Further commentary is provided below.

National CO_2eq emissions are forecasted to decrease year-on year. This is due to decreasing vehicle exhaust (non-traded) emissions as the number of internal combustion engine vehicles reduces. This is reflected in the volume of traded grid emissions from charging increased numbers of battery-electric vehicles, and specifically in the Low scenario. It is noted that traded emissions of CO_2eq are associated with electrical generation to supply plug-in vehicles, both BEV (battery electric vehicles) and PHEV (plug-in hybrid vehicles).

The electricity grid is expected to be using predominantly renewable sources in the future and so increasing adoption of electric vehicles and a shift from direct, non-traded, emission to traded grid-based technology (i.e. battery) will support reducing CO_2eq emissions.

Across both Low and High scenarios the interventions would reduce emissions of CO_2eq.

Significantly higher overall emissions are predicted in the High scenario, either with, or without, the national and all regional packages. There is a relatively smaller overall reduction of emissions due to the interventions in the Low scenario due to the lower overall emissions. The economic impacts associated with air quality were assessed using the Department for Environment Food & Rural Affairs (DEFRA) Damage Costs Appraisal Toolkit. The larger economic benefit from the High scenario is due to the greater overall emissions with, or without, the package, although the proportional change is lower.

Overall Scoring:

Low and High Scenarios: Moderate Positive

Metric 1: Change in CO$_2$eq (non-traded and traded emissions from regional road transport inc. grid emissions from charging light-duty vehicles)- Figures below are a National calculation

Low Scenario Commentary:

- 0.5% decreae (27,700 tonnes CO$_2$eq) in 2030.
- 2.8% decrease (21,600 tonnes CO$_2$eq) in 2045.
- 1.3 million tonnes reduction, of which 1.1 million were traded, for the 60-year appraisal period from 2030 to 2089.
- The net economic benefits for the 60-year appraisal period in 2010 prices and values would be in the range £10 million to £25 million for the Low scenario.

High Scenario Commentary:

- 0.4% decrease (31,300 tonnes CO$_2$eq) in 2030.
- 1.3% decrease (65,300 tonnes CO$_2$eq) in 2045.
- 3.7 million tonnes reduction, of which 452,000 were traded, for the 60-year appraisal period from 2030 to 2089.
- The net economic benefits for the 60-year appraisal period in 2010 prices and values would be in the range £100 million to £250 million for the High scenario.

Metric 2: Change in mode share by active travel for all journeys

Low and High Scenario Commentary:

- Potential increase in walking from 17% mode share to 19% mode share (2 percentage points).
- Potential increase in cycling from 0.7% mode share up to 3% (2.3 percentage points).

The package will increase the proportions of journeys undertaken by active modes. If all the active travel and behaviour change interventions were fully implemented in every relevant location in the Region, rates of walking and cycling are anticipated to increase as shown above.

Note that the cycling and walking growth forecasts have been developed independently of each other. Growth in use of one active mode is likely to abstract at least some trips from the other, but this effect is not accounted for within these forecasts.

Metric 3: Change in motorised vehicle kilometres travelled

Low and High Scenario Commentary:

- This is expected to have a Minor Positive contribution.

TPO2 An inclusive strategic transport system that improves the affordability and accessibility of public transport

TPO Performance Summary

Interventions included in this package would be anticipated to improve the inclusiveness of the transport system by:

- Improving conditions for people walking, wheeling, and cycling, the most inclusive transport modes, with particular benefits for people most often excluded (including children, older and disabled people, and people on low incomes).
- Improving public transport network coverage through Demand Responsive Transport (DRT) / Community Transport could reduce the reliance on private vehicles.
- Improving ferry connectivity between the Region and mainland Scotland.

Overall Scoring:

Low and High Scenarios: Neutral

Metric 1: Change in transport poverty risk

Low and High Scenarios Commentary:

Although the STPR2 interventions don't impact on the direct costs of travel (e.g. fares, fuel price), the package of interventions would result in a small reduction in transport poverty, due to the overall improvements to access to transport services and connectivity between modes.

Metric 2: Change in Accessibility - population catchments increases to key services by journey time by public transport

Low and High Scenarios Commentary:

The package will make no improvements to the accessibility of key and essential services by public transport in the Region.

TPO3 A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing

TPO Performance Summary

The package will improve communities as places, supporting health and wellbeing by enabling more journeys to be made by active and sustainable modes, and by improving road safety, predominantly through changing road user behaviour. This will:

- Improve people's physical health and mental wellbeing, with particular benefits for people most often excluded (including children, older and disabled people, and people on low incomes).
- Reduce the adverse impacts of car use on communities and health (including reduced air pollution, noise, accident risk and perceived road danger).

The analysis shows that through improved uptake of walking and cycling there would be a forecast reduction in the number of premature deaths due to the health benefits arising from active travel.

Overall Scoring:

Low and High Scenarios: Minor Positive

Metric 1 Change in mode share by active travel for all journeys

Low and High Scenarios Commentary:

- Potential increase in walking from 17% mode share to 19% mode share (2 percentage points).
- Potential increase in cycling from 0.7% mode share to 3% (2.3 percentage points).

These forecasts are subject to all active travel interventions being delivered in all relevant areas of the Region.

Metric 2 Potential for Change in 'Place'

Low and High Scenarios Commentary:

The package has the potential to improve the quality of the Region's places by improving local accessibility and reducing the adverse impacts of road traffic.

Particular benefits may arise in the more populated areas such as Lerwick, where conditions are more favourable for active travel.

Metric 3 Change in Health Benefits

Low and High Scenarios Commentary:

The health benefits of increased rates of active travel as a result of the package have been quantified using the World Health Organisation's (WHO) Health Economic Assessment Tool (HEAT). HEAT estimates the health and economic impacts of increased walking and cycling, providing assessments of the health and economic impacts of walking and cycling on premature mortality and on exposure to air pollution. Outputs from the tool shows that approximately 0.2 premature deaths would be prevented per annum.

TPO4 An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland

TPO Performance Summary

The package will contribute to sustainable inclusive growth in Scotland by:

- Improving integration of transport modes (especially between active modes and public transport) and between transport and major developments.
- Reducing disruption to ferry services by reducing the likelihood and/or impact of weather-related events will help increase efficiency of freight and passenger movements.

Overall Scoring:

Low and High Scenario: Minor Positive

Metric 1: Increased labour catchment by sustainable travel (PT/Active Travel)

Low and High Scenarios Commentary:

For the Region's population, no change was observed in journey times or accessibility for those travelling to the nearest employment site by public transport.

Metric 2: Change in lost time due to congestion (for business/ commercial transport)

Low and High Scenarios Commentary:

It is anticipated that the future levels of congestions on the road network within the Region will be low, therefore there will be a negligible impact on vehicle hour.

TPO5 A reliable and resilient strategic transport system that is safe and secure for users

TPO Performance Summary

The package is unlikely to have a significant impact on this objective, however there could be minor positive impact on reliability, safety, and personal security on the transport system by:

▪ Enabling and encouraging active travel modes, reducing the risk of motorised accidents occurring as a result of reducing motorised travel, whilst improving resilience by reducing the number of road closures associated with accidents.
▪ Improving active travel provision and providing more dedicated and segregated routes for walking, cycling and wheeling.
▪ Change attitudes of road users, through behavioural change campaigns. This is anticipated to increase awareness of interactions with those walking, wheeling, and cycling as well as changing attitudes towards speed, making the network a safer place for all.
▪ Mode shift to sustainable modes will, by improving natural surveillance, reduce perceived risks to road safety and to personal security, so enabling more people (particularly children, women, and older people) to travel independently, however this is only likely to improve safety and security in the more populated areas, such as Lerwick.
▪ Through targeted safety interventions each individual active travel journey is anticipated to be significantly safer, however with an anticipated increase in the number of active travel journeys undertaken, the number of accidents involving these modes is anticipated to increase.

Overall Scoring:

Low and High Scenarios: Moderate Positive

Metric 1 Change in accidents

Low and High Scenarios Commentary:

Whilst there is anticipated to be a negligible impact on the number of accidents involving vehicles following the introduction of the interventions within this package, it is anticipated that it would increase walking and cycling journeys. The number of accidents involving

these modes is therefore anticipated to increase, although each individual journey is anticipated to be significantly safer.

Metric 2 Percentage accident change for Targeted Infrastructure Improvements over 60 years, using default accident rate (PIA only)

Low and High Scenarios Commentary:

Not Applicable.

Metric 3 Change in lost time due to congestion

Low and High Scenarios Commentary:

Negligible impact on vehicle hours.

Metric 4 Journey Time Reliability /Availability of alternatives (modes/routes)

Low and High Scenarios Commentary:

This package is anticipated to have a negligible impact on overall motorised vehicle kilometres under both High and Low scenarios and is therefore unlikely to have an impact on the risk of accidents occurring or the number of road closures associated with accidents.

6. STAG Assessment

6.1. Environment

Environment
Air Quality
Performance Summary:
It is anticipated that the package would reduce harmful emissions within the region by: - Enabling more passenger journeys to be made by active modes and public transport.   - Decarbonising bus operations and the NIFS Ferry Network.
Low Scenario Scoring: Minor Positive
High Scenario Scoring: Minor Positive
Noise and Vibration
Performance Summary:
The anticipated modal shift is also expected to reduce levels of noise and vibration associated with the transport network. There is potential for a localised negative effect on noise and vibration due to the construction and operation of specific interventions, however the magnitude of effect will depend on the design and location of the intervention.
Low Scenario Scoring: Minor Positive
High Scenario Scoring: Minor Positive
Biodiversity and Habitats: Geology and Soils; Land Use (including Agriculture and Forestry); Water, Drainage and Flooding; Historic Environment; and Landscape
Low and High Scenarios Commentary:
Please refer to SEA performance summary text in the 'Statutory Impact Assessment Criteria' section below. Please note the scoring has been based on the SEA methodology for scoring, which has been agreed with the SEA Consultation Authorities.

6.2. Climate Change

Climate Change
Performance Summary (applicable to all Climate Change Sub-Criteria)
Carbon dioxide equivalent (CO_2eq) is treated as a nationally important pollutant. As such, although it can be appraised at the national level (commentary below), it has not been appraised for individual regions.
National CO_2eq emissions are forecasted to decrease year-on-year, with decreasing direct (non-traded) exhaust emissions and increasing traded grid emissions associated with increased adoption and charging of battery-electric vehicles, specifically in the Low scenario. It is noted that traded emissions of CO_2eq are associated with electrical generation to supply plug-in vehicles, both BEV (battery electric vehicles) and PHEV (plug-in hybrid vehicles).

Appendix H: Appraisal Summary Table – Shetland

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Across Low and High scenarios the package will reduce emissions of CO_2eq compared to the corresponding baseline, although the change is greater in the High scenario due to overall higher emissions.

The package is unlikely to have a significant impact on mitigating against the effects of climate change on the strategic transport network as there are no groupings that are specifically focused on adaptation that impact this Region.

The above summary is applicable across all the sub-criteria, as outlined below. The specific performance against each sub-criteria is scored against both the Low and High scenarios.

Greenhouse Gas Emissions

Low Scenario Scoring: Major Positive

High Scenario Scoring: Major Positive

Vulnerability to Effects of Climate Change

Low Scenario Scoring: Neutral

High Scenario Scoring: Neutral

Potential to Adapt to Effects of Climate Change

Low Scenario Scoring: Neutral

High Scenario Scoring: Neutral

6.3. Health, Safety & Wellbeing

Health, Safety & Wellbeing

Performance Summary (applicable to all Health, Safety & Wellbeing Sub-Criteria)

The package will reduce the number and possibly severity of accidents by encouraging modal shift away from private car, resulting in reduced accident risk due to reduced conflicts. Whilst there is anticipated to be a negligible impact on the number of accidents involving motorised vehicles following the introduction of the interventions within this package, it is anticipated that the package would increase walking and cycling journeys. The number of accidents involving these modes is therefore anticipated to increase, although each individual journey is anticipated be significantly safer.

Mode shift to sustainable modes will, by improving natural surveillance, make paths, stops, stations and services less isolated and this, accompanied by improved quality of facilities will improve perceived security.

The package will improve communities as places, supporting health and wellbeing, by encouraging modal shift away from private car and towards active travel. This will improve placemaking through reduced noise and better air quality due to reduced traffic, and reduced accident risk. It will also benefit many people's physical health and mental wellbeing.

Accidents

Low and High Scenarios Commentary:

Whilst the number of accidents involving vehicles is anticipated to reduce following the introduction of the interventions within this package, it is anticipated that it would increase walking and cycling journeys. The number of accidents involving these modes is therefore anticipated to increase, although each individual journey is anticipated to be significantly safer.

Percentage accident change for Targeted Infrastructure Improvements over 60 years using default accident rate (PIA only)

Low and High Scenarios Commentary:

Not Applicable.

Security

Low and High Scenarios Commentary:

The package will, by increasing the number of people travelling actively, tend to improve natural surveillance and will, through improvements to lighting and urban realm, tend to reduce the number of locations at which security is a concern. Connected neighbourhoods will provide safer active travel connections between settlements on the islands, incorporating security as part of the design.

Health Outcomes

Low and High Scenarios Commentary:

The package will, by increasing rates of active travel and hence physical activity, improve both health and wellbeing outcomes. The estimated value of health benefits to the Region's population, appraised over a 60-year period, is in the range £10 million to £25 million.

The package will also tend, by encouraging journeys to switch to less polluting modes, to improve local air quality, and hence health outcomes.

Access to Health and Wellbeing Infrastructure

Low and High Scenarios Commentary:

The package will make no improvements to the accessibility of healthcare facilities by public transport in the Region.

Visual Amenity

Low and High Scenarios Commentary:

The package should have a positive impact on visual amenity through improvements to walking and cycling infrastructure and an improved sense of 'place'.

6.4. Economy

Economy
Performance Summary
Within the Region itself, the package is expected to have a minor positive impact on public transport revenues due to an anticipated mode shift. More widely, minor economic benefits arise as a result of interventions that have an impact on onward journeys to and from the Shetland Islands. The modest economic benefits that accrue are as a result of the contribution of sustainable transport interventions that partially affect journeys being made to and from the Region, to enable and encourage mode shift to public transport. Note that due to the nature of a number of the STPR2 interventions it has not been possible to derive indicative cost estimates on a regional basis.
User Benefits (2010 prices and values for a 60 year appraisal period)
Low Scenario Commentary:
▪ Present Value of Benefits (PVB) of approximately £1 million to £10 million.
High Scenario Commentary:
▪ Present Value of Benefits (PVB) of approximately £1 million to £10 million.

6.5. Equality & Accessibility

Equality & Accessibility
Performance Summary (applicable to all Equality & Accessibility Sub-Criteria)
No change was observed for the Region as a whole for either population accessibility or journey time by public transport to employment as the tool only considers data zones in the 20% most deprived areas in Scotland for this metric. Note: Shetland does not have any data zones which fall into the category of the 20% most deprived areas in Scotland. The package will improve accessibility to public transport by improving the coverage of the walking and cycling networks. This will provide particular benefits for people often excluded from transport, including older and young people, women, disabled people, and people living in more deprived communities. The package will also improve affordability by reducing forced car ownership, and situations where taxi is the only viable mode for people without access to a car or suitable public transport services.
Public Transport Network Coverage
Low and High Scenarios Commentary:
The public transport network coverage is unlikely to change significantly due to the introduction of interventions within this package.

Active Travel Network Coverage

Low and High Scenarios Commentary:

Improvements to the Region's active travel network, both within and between settlements, mean that many more people will have convenient, high-quality, and safe infrastructure for walking, wheeling and cycling journeys.

Comparative Access by People Group

Low and High Scenarios Commentary:

Improvements to active travel networks, which will improve access to the public transport network, will provide positive impacts to groups who are less likely to have access to a car and are more likely rely on public transport, walking and cycling for their journeys. This includes women, children and young people, older people, some ethnic minority groups and disabled people.

Comparative Access by Geographic Location

Low and High Scenarios Commentary:

The package will make no improvements to the accessibility of key and essential services by public transport in the Region.

Affordability

Low and High Scenarios Commentary:

Although the STPR2 interventions don't impact on the direct costs of travel (e.g. fares, fuel price), the package of interventions would see small reduction in transport poverty, due to the overall improvements to access and connectivity between modes.

7. Deliverability

7.1. Feasibility

Feasibility
Summary Assessment:
The package has been developed with feasibility considerations in mind. The package mostly makes use of existing and proven technology and would generally be expected to largely operate inside existing design standards. However, further work is required to understand the feasibility of decarbonising the ferry network and how this would be achieved over a number of years, so this intervention may be less feasible than others included within this package.

7.2. Affordability

Affordability
Summary Assessment:
The package would require capital and operational funding. It is unlikely that any of the packages would generate significant revenue, however there may be a slight increase in public transport patronage through the introduction of this package, generating revenue that could be used to offset some of these costs.

7.3. Public Acceptability

Public Acceptability
Summary Assessment:
Public acceptability of the package is likely to be positive. The package is expected to improve accessibility, connectivity, and choice and to make transport cleaner, more efficient and more attractive. There may be acceptability concerns where construction works are expected to cause disruption or require land-take, however this is anticipated to be minimal in the Region.

8. Statutory Impact Assessment Criteria

8.1. Strategic Environmental Assessment (SEA)

SEA
Performance Summary: The package supports modal shift to more sustainable modes of transport. Improved access to major ports and airports, the creation of mobility hubs/interchanges and the improvements to passengers' services and facilities seek to encourage modal shift to more sustainable modes of transport, and, as a result, reduce levels of transport related air pollution and greenhouse gas emissions. Decarbonisation of the ferry service, bus network and freight deliveries will also support a reduction in greenhouse gas emissions and improvement in air quality. Positive effects are anticipated on the population and human health due to an expected increase in sustainable access to essential services, increased travel choice and improved connectivity and planning for the future capacity of public transport. There is potential for a negative effect on natural resources as some freight interventions proposed involve enhancements to freight, terminals and facilities and therefore will require the use of natural resources. Where new infrastructure is required this could result in negative effects on biodiversity, soil, landscape, water, cultural heritage, however the magnitude of effect is uncertain at this stage and will be determined by the design (and physical footprint) of the interventions. Many of the interventions in this region, particularly the active travel ones, will have positive outcomes for health - for example through expected improvements in air quality and increased uptake of physical exercise through walking, wheeling, and cycling. As the design and development of interventions in this region progresses, further environmental assessments will determine the magnitude of the different positive and negative environmental effects and mitigation measures will be developed where appropriate.

8.2. Equalities Impact Assessment (EqIA)

EqIA
Performance Summary: The package would improve active travel accessibility to key destinations and services including employment, education, healthcare, and shopping for people living in the area. This will have a positive impact on certain protected characteristic groups who are less likely to have access to a car and more likely to depend on active travel to make their journeys. This includes women, children and young people, older people, disabled people, and people from certain ethnic minority groups.

By encouraging modal shift to more sustainable modes, this package would also contribute to improving local air quality. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children, older people, disabled people, and pregnant women.

The package will reduce the risk of motorised accidents through encouraging modal shift away from private car, resulting in reduced vehicle conflicts. Some protected characteristic groups are more likely to be involved in road accidents, for example, children as pedestrian casualties and young males involved as car drivers and as such would have positive impacts on these groups. It should however be noted that with an anticipated increase in the number of walking and cycling journeys undertaken, the number of accidents involving these modes is anticipated to increase.

Mode shift to sustainable modes will reduce the perception of isolation on paths, bus stops, stations and services , and this, accompanied by improved quality of facilities will improve perceived security. This is likely to provide some benefit to those for whom security is of particular concern including women, the LGBTQ+ community and those from religious backgrounds most subject to hate crime.

The package would therefore be anticipated to have a minor positive impact on this criterion.

8.3. Island Communities Impact Assessment (ICIA)

ICIA
Performance Summary:
In addition to the overall benefits of the package, the investment into ferry vessel renewal and replacement and decarbonisation of the NIFS network would drive island connectivity improvements across the NIFS Ferry Network leading to a beneficial impact on island communities served by these routes. This could lead to an improvement in air quality for island communities within close proximity to ports and harbours. Further benefits may be realised through the procurement of new ferry vessels and infrastructure which would be designed to modern accessibility standards.
The capital funding investment into Demand Responsive Transport would be likely to have a positive impact on island communities by providing more flexible public transport services meeting the needs of dispersed and remote island communities.
This package could provide a minor positive impact for the communities of the Region.

8.4. Child Rights and Wellbeing Impact Assessment (CRWIA)

CRWIA
Performance Summary:
By encouraging modal shift to more sustainable modes, this package would contribute to improving local air quality. Improved health outcomes as a result of better air quality are of particular benefit to those who are more vulnerable to air pollution, including children.

The package would also improve active travel accessibility to higher education institutions and employment opportunities for young people living in the Region.

The package would therefore be anticipated to have a minor positive impact on this criterion.

8.5. Fairer Scotland Duty Assessment (FSDA)

FSDA

Performance Summary:

As measured by the Scottish Index of Multiple Deprivation (SIMD 2020), there are no data zones in the Region within the 20% most deprived data zones in Scotland. However, pockets of deprivation exist within data zones surrounding Lerwick North which recorded high levels of crime and health deprivation, and on the islands of Yell and Unst which recorded high levels of income deprivation. The package has the potential to marginally improve public transport connectivity and therefore reduce some inequalities caused by socio-economic disadvantage for those living in deprivation or communities where transport options are limited.

The package would therefore be expected to have a minor positive impact on this criterion.