Strategic Transport Projects Review (STPR2) Consultancy Support Services Contract

STPR

Initial Appraisal: Case for Change
The Shetland Islands Region

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Jacobs   **AECOM**

STRATEGIC TRANSPORT PROGJECTS REVIEW #2

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Acronyms

ABBREVIATION	
ADS	Air Discount Scheme
DDA	Disability Discrimination Act
GVA	Gross Value Added
MPA	Marine Protected Areas
NIFS	Northern Isles Ferry Service
NTS	National Transport Strategy
PSO	Public Service Obligations
RTWG	Regional Transport Working Group
SEA	Strategic Environmental Assessment
SIMD	Scottish Index of Multiple Deprivation
SPS	Shetland Place Standard
STAG	Scottish Transport Appraisal Guidance
STPR2	Second Strategic Transport Projects Review
TPO	Transport Planning Objectives
UK	United Kingdom
WEMWBS	Warwick Edinburgh Mental Health and Wellbeing Scale

1. Introduction

1.1. Background and Report Purpose

Transport Scotland is currently undertaking the second Strategic Transport Projects Review (STPR2) to inform the Scottish Government's transport investment programme in Scotland over the next 20 years (2022 – 2042). STPR2 takes a national overview of the transport network with a focus on regions and will help deliver the vision, priorities and outcomes that are set out in the new National Transport Strategy (NTS2)[1].

STPR2 is being carried out in accordance with the Scottish Transport Appraisal Guidance (STAG)[2] which is an objective-led, evidence-based transport appraisal process. The four key phases of STAG are illustrated in Figure 1.

Figure 1: The Four Stages of the Scottish Transport Appraisal Guidance (STAG)

This report sets out the Initial Appraisal: Case for Change for the Shetland Islands region as shown in Figure 2 and forms one of eleven STPR2 regions. The Case for Change constitutes the first phase of STAG and sets out the evidence base for problems and opportunities linked to the strategic transport network across the Shetland Islands region drawing on relevant data analysis, policy review and stakeholder engagement. This report is supported by a national level Case for Change report which sets out the overarching vision for transport investment in Scotland and the challenges that must be addressed to support delivery of the priorities set out in NTS2.

STPR2 specifically focusses on Scotland's key strategic transport assets, which are wide ranging and varied. In the context of STPR2, the strategic transport network is defined as being:

- All transport networks and services owned, operated and funded directly by Transport Scotland;
- Transport Access to Major Ports and Airports; and
- The inter-urban bus and active travel network and principal routes within the City Region areas.

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[1] New National Transport Strategy (NTS2) (Transport Scotland, Feb 2020) www.transport.gov.scot/media/47052/national-transport-strategy.pdf
[2] Scottish Transport Appraisal Guidance (STAG) (Transport Scotland) www.transport.gov.scot/media/41507/j9760.pdf
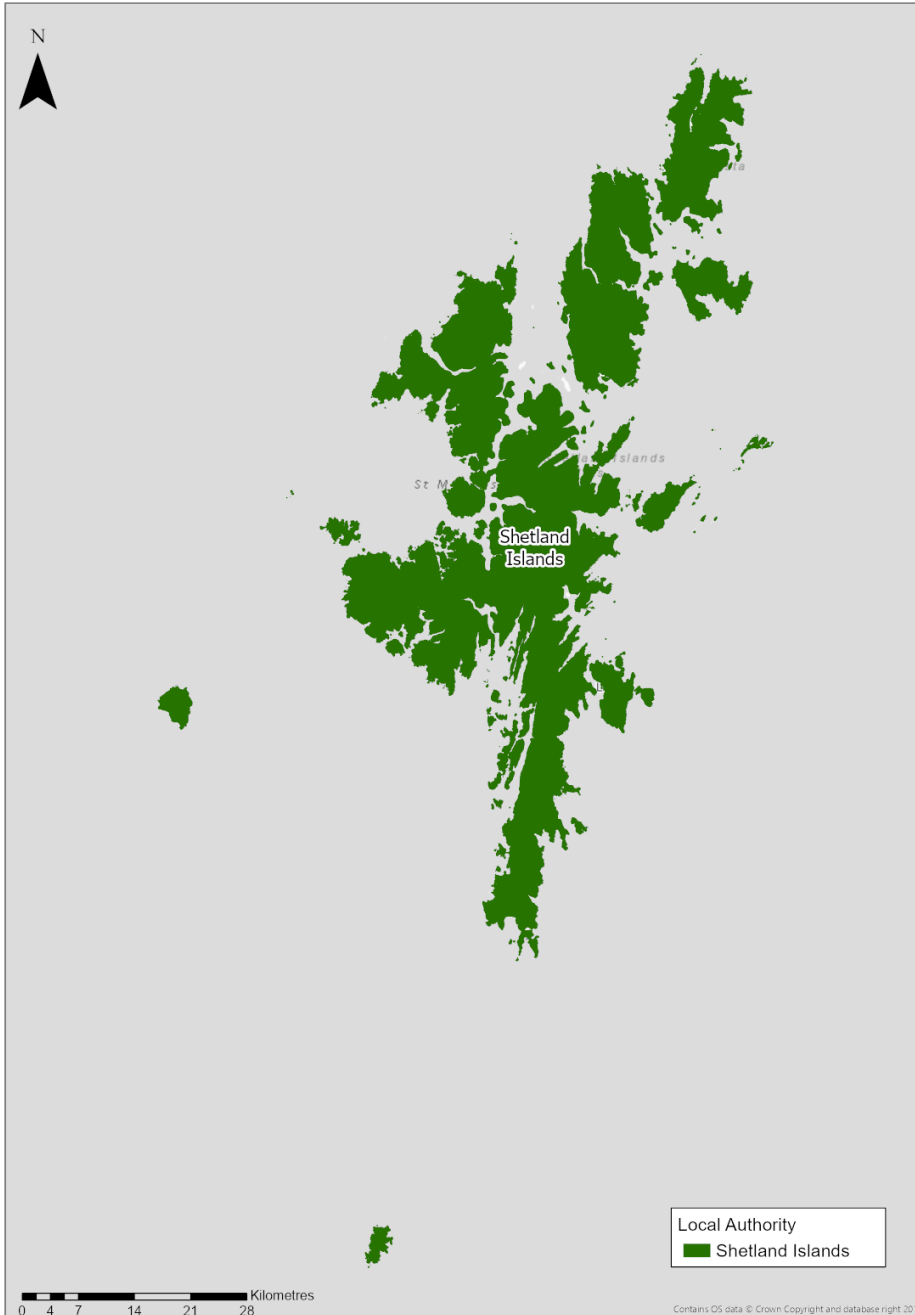
Figure 2: Shetland Islands Region Study Area

The Shetland Islands region comprises of one local authority. The geographic remoteness of the Shetland Islands creates a unique location whereby residents and tourists alike rely on a variety of transport modes to travel and transport goods and produce within the region and between the region and mainland Scotland. The inter-island and external air and ferry connections are lifeline services, providing access to the key services of employment, healthcare and education[3]. These connections also provide fresh produce to the islands and a route to market for the key exports, such as from the fishery and aquaculture sectors, which are essential to both the local and national economy.

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[3] Transport Scotland (n.d.) Lifeline Air Services: https://www.transport.gov.scot/public-transport/air-travel/lifeline-air-services/ [accessed 18/02/2020]

To reflect the regional approach of STPR2 a Regional Transport Working Group (RTWG) has been established with representatives from Transport Scotland, Shetland Islands Council, Shetland's Transport Partnership ZetTrans, relevant partners and the STPR2 consultant team.

This Case for Change report also presents a draft set of Transport Planning Objectives, aligned with the national STPR2 objectives. The Transport Planning Objectives express the outcomes sought for the region and describe how problems may be alleviated. Additionally, the Transport Planning Objectives provide the basis for the appraisal of alternative options and, during Post Appraisal, will be central to Monitoring and Evaluation.

A long list of multi-modal options to address the identified problems and opportunities in the study area is currently being developed and will be sifted in line with the proposed approach presented in this report.

Subsequent phases of the STAG process, the Preliminary and Detailed Appraisal phases, involve more detailed appraisal work, considering the feasibility and performance of options to tackle the identified transport-related problems and opportunities and will be developed as the STPR2 process moves forward.

The following Chapter sets out the Socio-Economic, Environmental and Transport Context for the Shetland Islands region.

2. Context

2.1. Policy Context

At the national, regional and local levels, relevant transport, planning and economic strategies and policies have been reviewed to provide background context against which this Case for Change has been developed. Figure 3 provides an overview of the strategies and policies reviewed, with a summary of key documents presented below:

- **Programme for Government;** sets out the Scottish Government's ambitions and aims to make Scotland a more successful country with opportunities and increased wellbeing for all. It includes a commitment to "make the Highlands and Islands the world's first net-zero aviation region by 2040."
- **The National Transport Strategy (NTS2);** The NTS2 provides the national transport policy framework, setting out a clear vision of a sustainable, inclusive, safe and accessible transport system that helps deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors. It sets out key priorities to support that vision: reduces inequalities; takes climate action; helps deliver inclusive economic growth; and improves our health and wellbeing.
- **Climate Emergency;** declared by the Scottish and UK Governments in 2019. As part of this, the Climate Change Bill commits the Scottish Government to a target of net zero emissions of all greenhouse gases by 2045.
- **Growth Deal:** The Scottish Government is committed to ensuring 100% coverage of Scotland with Growth Deals. Scotland's three islands councils - Shetland Islands Council, Orkney Islands Council and Comhairle nan Eilean Siar – are currently working with partners on their Islands Growth Deal. STPR2 will give due consideration to proposals that emerge from the Deal. The Islands Growth Deal forms the basis of the next phase of the islands' collaboration, aiming to "unlock investment and drive inclusive growth across Orkney, Shetland and the Western Isles"[4].
- **ZetTrans' Shetland Transport Strategy;** sets out the regional strategic direction and outcomes to be achieved over its lifespan to 2028. Namely to "develop travel and transport solutions for Shetland that underpin our Economy, support our Communities and conserve our Environment".
- **Other Regional and Local Policy Documents;** such as Shetland Local Development Plan, Shetland Economic Development Strategy and Shetland Local Outcome Improvement Plan set out related objectives and priorities, but which transport plays a key role in both the enabling and delivery of their outcomes.

In addition to the four Priorities presented above, the NTS2 supports the adoption of a Sustainable Transport Hierarchy. This promotes walking, wheeling, cycling, public transport and shared transport options in preference to single occupancy private car use, as well as a Sustainable Investment Hierarchy, which prioritises investment aimed at reducing the need to travel unsustainably and maintaining and safely operating existing assets ahead of new infrastructure investment.

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[4] Scottish Government (n.d.) Regional Growth Deals: https://www.gov.scot/policies/cities-regions/regional-growth-deals/ [accessed 18/02/2020]
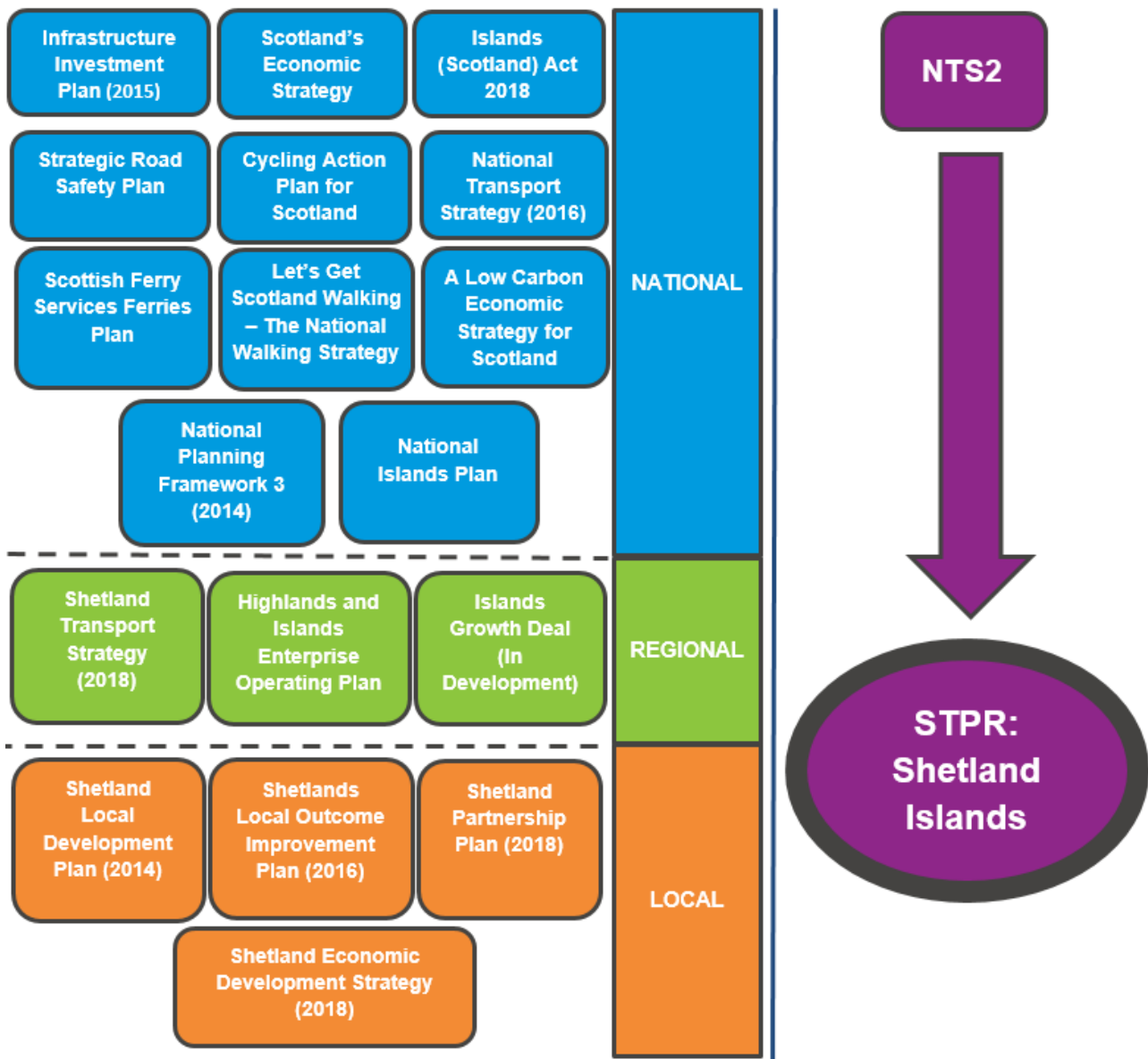
Figure 3: Shetland Islands Region Policy Review

The full list of reviewed documents is presented in **Appendix B**

In addition, supporting the development of STPR2, Strategic Environmental Assessment (SEA) and Equality Impact Assessment (EqIA) processes are being developed along with assessments for the Fairer Duty Scotland, Child Rights and Wellbeing Impact, and Island Communities Impact. Early work on these assessments has informed this Case for Change by helping ensure that a comprehensive range of issues and evidence is considered.

2.2. Geographic Context

The entirety of the Shetland Islands Region is classified as remote rural[5], with the exception of Lerwick which is classified as a remote small town[6], as shown in Figure 4.
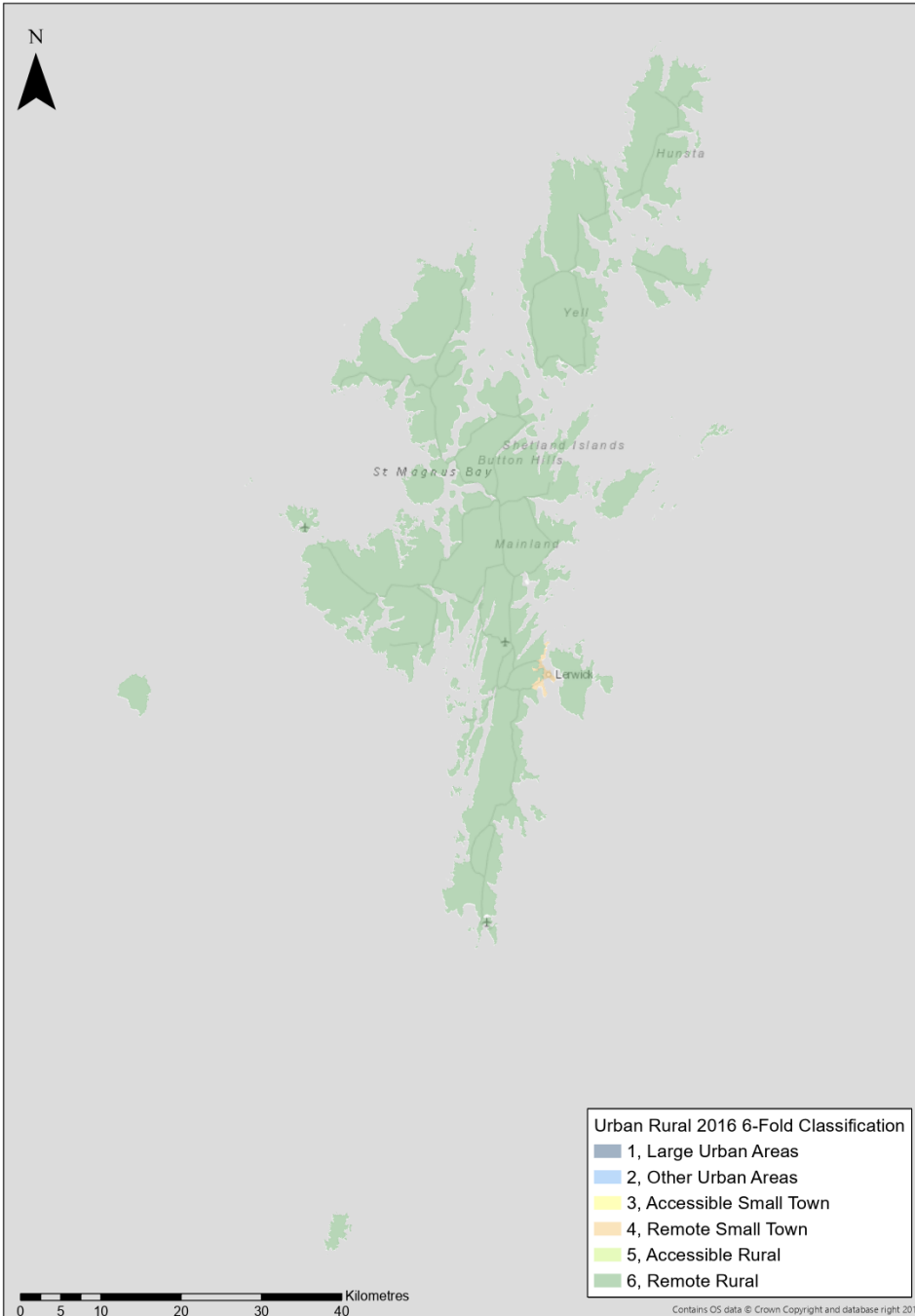
Figure 4: Urban Rural 6-fold Classification, 2016 (Shetland Islands)

(click to image to enlarge figure)

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[5] Remote rural pertains to areas with a population of less than 3,000 people, and with a drive time of over 30 minutes to a settlement of 10,000 or more.
[6] Remote small towns pertains to settlements of 3,000 to 9,999 people, and with a drive time of over 30 minutes' to a settlement of 10,000 or more.

2.2.1. Population

In 2018, the Shetland Islands Region comprised of a population of 22,990 people, with a low population density (0.16 persons per hectare) when compared to the national average (0.70 persons per hectare)[7].

Figure 5: Population by Settlement, Population and Population Density (National Records Scotland, 2018)

As demonstrated in Figure 5, the most populated locality is Lerwick, with a population of 6,880 in 2016; this was more than five times greater than the population of Scalloway and more than nine times greater than the population of Brae. Between 2012 and 2016, Lerwick was the only settlement to reduce (2.3%) in population; the highest population growth was experienced in Scalloway, at 12.7%. Between 2014 and 2018, the overall population in the Shetland Islands Region reduced by 1%[8].

Relative to Scotland as a whole, in 2018 the working age population was 2.3% lower in the Shetland Islands and the population aged 65 and above was 1% higher in the Shetland Islands. Notably, between 2011 and 2018, the working age population in the Shetland Islands Region fell by 2.5%[9] whilst the population aged 65 and over rose by 3.5%[8]. This indicates that the population was aging and there may be a need to attract more working age people to the region.

A comparison of the region's population by age in 2011 and 2018 are presented in Figure 6. The figure demonstrates that the working age population is decreasing in the Shetland Islands, whilst it remains stable in Scotland as a whole. There has also been a significant decrease in the number of people aged 15 and under within the region, and a significant

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[7] National Records Scotland (2018) Mid-2016 Population Estimates for Settlements and Localities:https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/settlements-and-localities/mid-2016-population-estimates-for-settlements-and-localities-in-scotland

[8] National Records Scotland (2018) Mid-year population estimates: 2014-2018: https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/population-estimates-time-series-data

[9] Census 2011 (2011) Table KS102SC - Age structure: https://www.scotlandscensus.gov.uk/documents/censusresults/release2a/councilarea/KS102SC_CA.pdf

increase in those ages 65 and over. This shows the ageing population in the region and indicates that the working age population is set to decrease further in future.
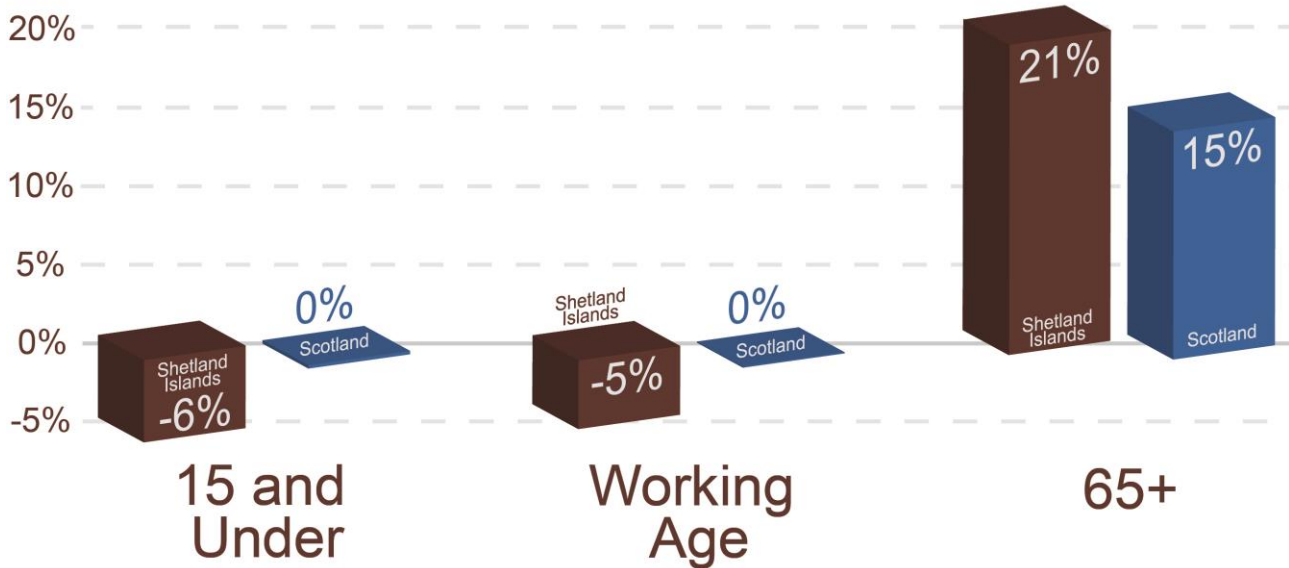
Figure 6: Population Age Structure Comparison – 2011 to 2018

Scottish Government figures highlights that the Shetland Islands Region has one of the highest rates of employment in Scotland at 82.4% compared with 72.5% nationally[10]. However, relative to other local authorities in Scotland, it was estimated that the Shetland Islands Council area has the joint highest level of underemployment (13.6%)[11]. Underemployment refers to the underuse of a worker because a job does not use the worker's skills, is part-time, or leaves the worker idle.

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[10] Shetland Islands Council (n.d.) Islands Proofing – Shetland Statistics: https://www.shetland.gov.uk/OIOF/IslandsProofing.asp [accessed 18/02/2020]
[11] Scottish Government (2013) Underemployment in Scotland: https://www2.gov.scot/Resource/0041/00413402.pdf [accessed 18/02/2020]

2.2.2. Travel to Work – Mode Share

A relatively high number (71%) of commuters travelled to work by car, compared with the regional benchmark[12] (64%) and national average (62%)[13]. As shown in Figure 7, travelling to work via active travel in the Shetland Islands Region was consistent with both the regional benchmark figure and the national average. A noticeably low level (3%) of commuters travelled via bus in the Shetland Islands Region when compared with the national average (10%).
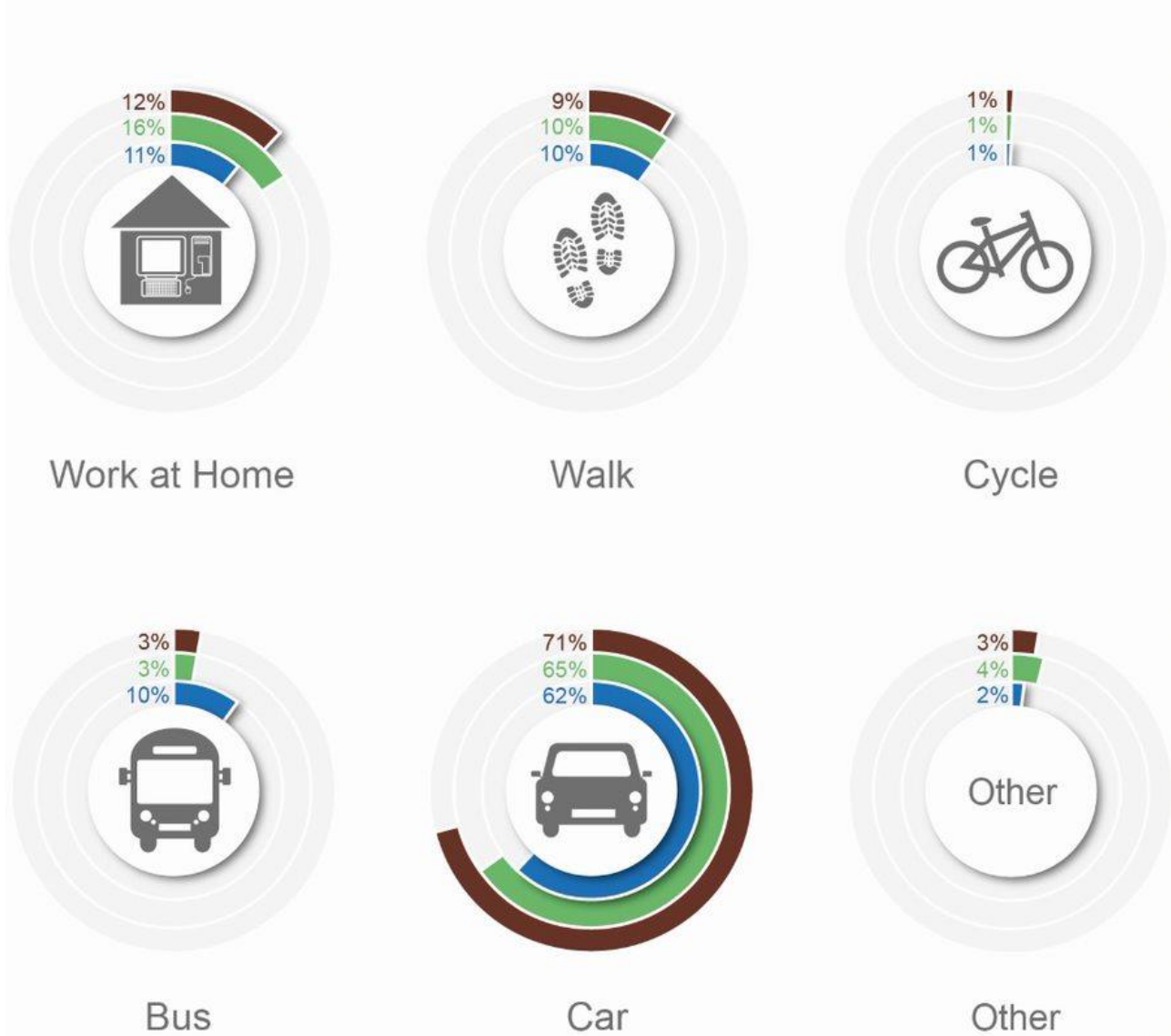
Figure 7: Travel to Work by Mode

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[12] The regional benchmark is an average created using data from the Shetland Islands, Orkney Islands and Western Isles Council areas.

[13] The national average is the average across Scotland.

Figure 8 shows that in the Shetland Islands Region, the percentage of households that did not own a car (19%) was relatively similar to the regional benchmark (20%) but considerably lower than the national average (31%). Relative to other regions within STPR2, households that own three or more cars or vans were most common in the Shetland Islands Region: almost 40% of households in the region had access to multiple cars or vans[14].

Car or Van Availability per Household 2011

Households without access to Car or Van

19%
20%
31%

■ Shetland Islands
■ Regional Benchmark
■ Scotland

42%
44%
42%

29%
26%
22%

10%
9%
6%
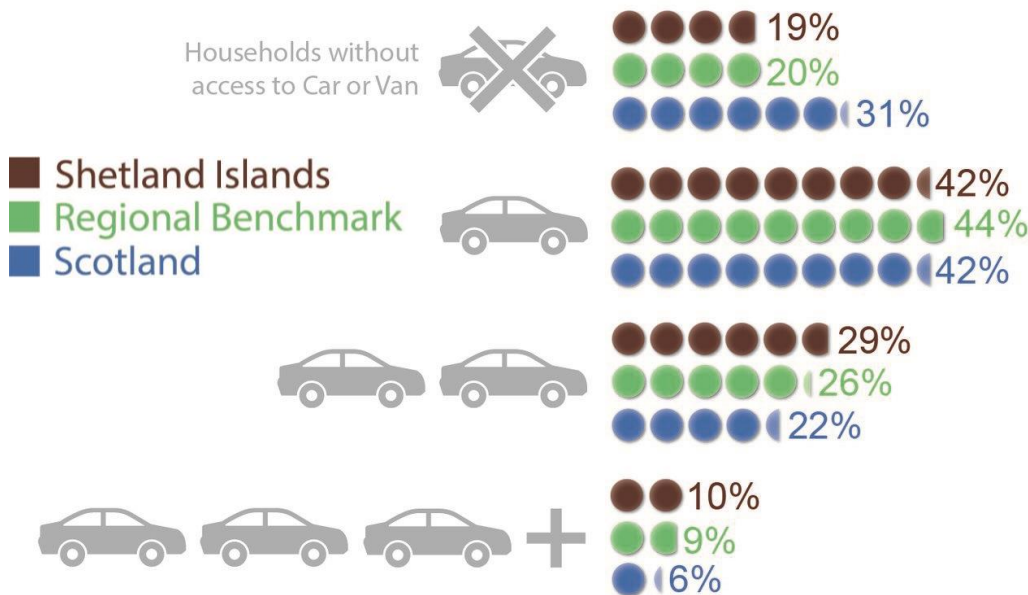
Figure 8: Car Ownership

Travel to Work – Distance Travelled

In 2011, the proportion of the journeys to work undertaken within the Shetland Islands Region with a distance less than 2km was 4.3% higher than the national average[15], as shown in Figure 9 overleaf. Travel between 2km and 5km and between 5km and 10km was less common in the Shetland Islands Region compared to the national average, where it is 5.2% and 4.7% lower, respectively. Commuter distances of 20km to 30km and 30km to 40km were more common in Shetland than nationally, but the proportions of the longest distance travelled (40-60km and over 60km) were comparable to the national averages. The percentage of the working population working mainly at or from home in the Shetland Islands Region was 12.2%; this was 1.4% higher than the national average. Overall, it appears that commuting distances in the Shetland Island Region are broadly

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[14] Census 2011 (2011) Car or Van Availability: https://www.nomisweb.co.uk/census/2011/qs416ew
[15] Census 2011 (2011) Distance Travelled to Work: https://www.nomisweb.co.uk/census/2011/qs702ew

similar to those across Scotland.

Distance Travelled to Work 2011
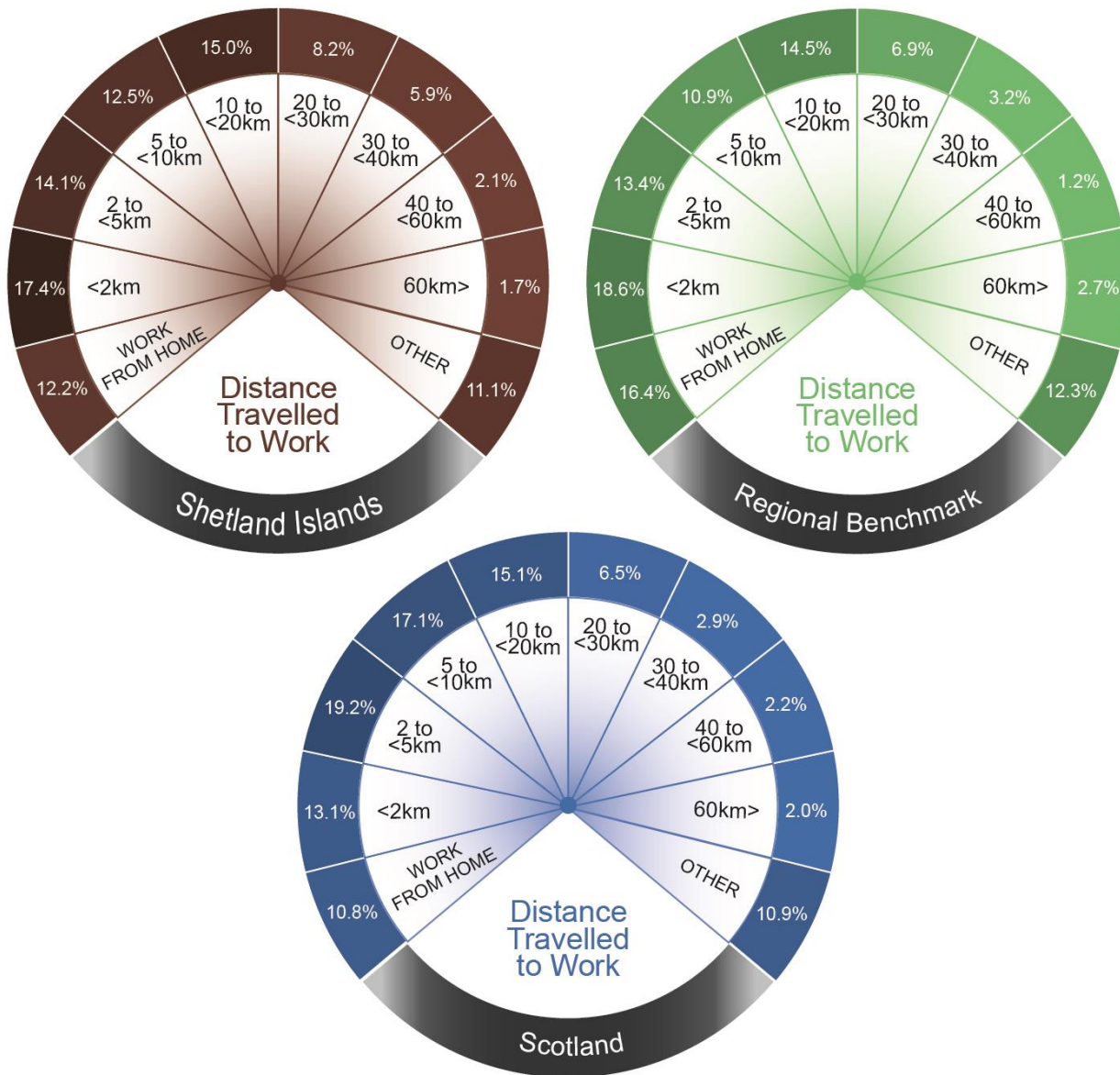
Figure 9: Distance Travelled to Work

2.2.3. Economic Activity

Economic activity refers to an estimation from Census 2011 data of whether usual residents aged 16 to 74 were in work or actively looking for work. Annual economic activity estimates are produced by the Office for National Statistics. Data reported in 2018 demonstrates that in the Shetland Islands Region, economic activity was 3.8% higher than

the national average. However, between 2014 and 2018 economic activity had fallen by 5.9% in the region; which is the largest decrease in any region[16].

Relative to other STPR2 regions, regional employment was highest in the Shetland Islands region at 81.5%; this was 7.4% higher than the national average[16]. Between 2014 and 2018, employment increased by 0.4%, which was 1.1% lower than the national average for this period. In the Shetland Islands Region, the mean annual pay was £27,011; this was slightly lower (£401) than the national average. Between 2012 and 2017, mean annual pay increased by 11.3%[17].

Employment growth in the Administration & Defence industry, Agriculture, Forestry and Fishing industry and the Transportation and Storage industry was significant between 2013 and 2017, with an increase of 60%, 25% and 20% respectively. In 2017, the Agriculture, Forestry and Fishing industry was the largest employer in the Shetland Islands Region, accounting for 17.9% of the employed population, as shown in Figure 10 overleaf; this was 14.8% greater than the national average figure. Human Health and Social Work was the second largest employment sector in the Shetland Islands Region, accounting for 13.4% of the working population. However, between 2013 and 2017, employment in this section fell by 10%, which was 2.1% lower than the average national reduction in employment for this sector. The Accommodation & Food Service and IT, Finance & Real Estate industries experienced the largest declines in employment, reducing by 28% and 12.5% respectively between 2013 and 2017. Overall, the industry that employed the fewest people in 2017 was the IT, Finance & Real Estate industry, employing 2.1% of the working population in the region[18].

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[16] NOMIS (2018) Annual Population Survey: 2014-2018: https://www.nomisweb.co.uk/datasets/apsnew

[17] NOMIS (2018) Annual Survey of Hours and Earnings 2012-2018: https://www.nomisweb.co.uk/query/construct/summary.asp?reset=yes&mode=construct&dataset=30&version=0&anal=1&initsel=

[18] NOMIS (2018) Business Register and Employment Survey: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=27 [accessed 18/02/2020]
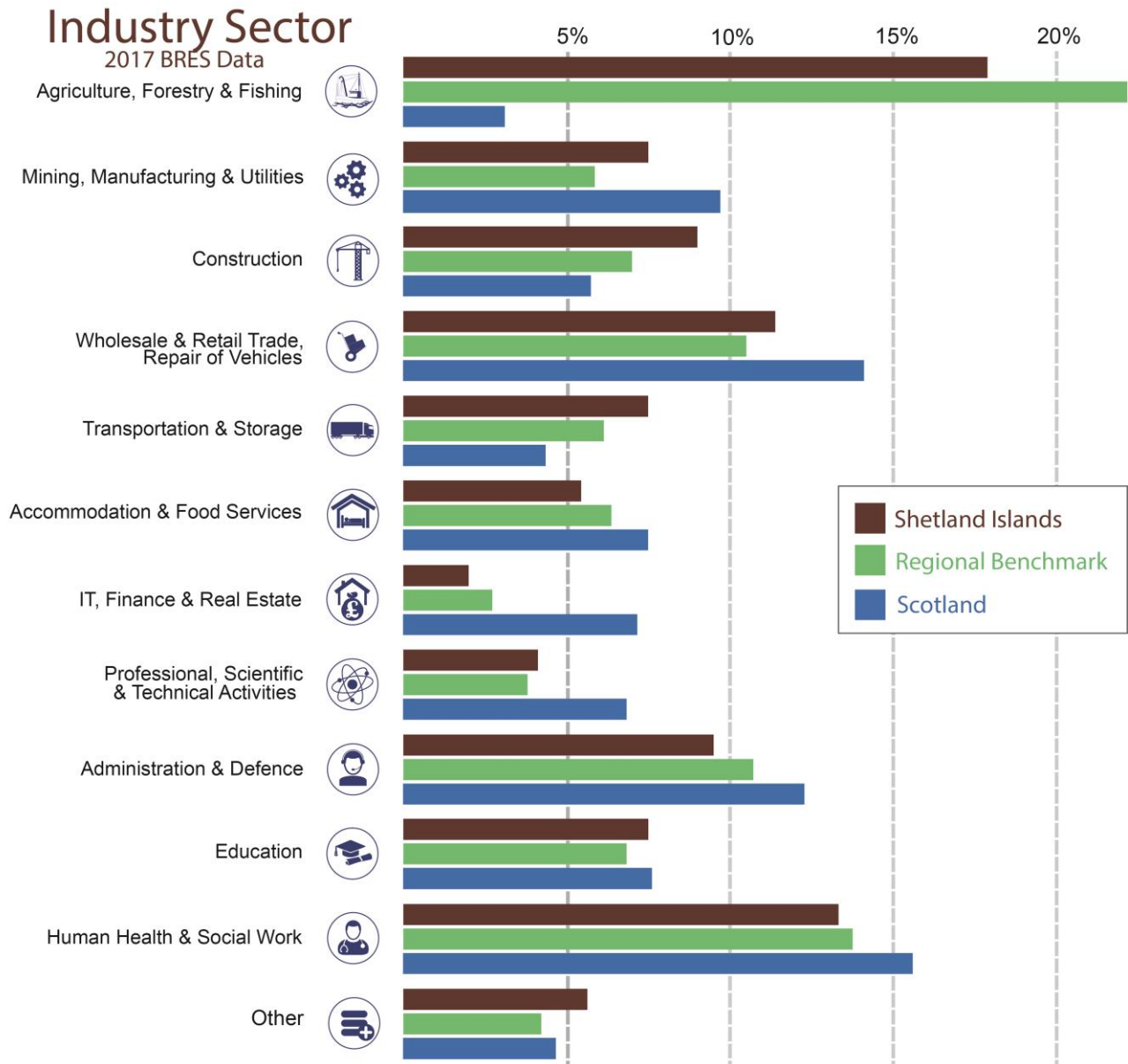
Figure 10: Percentage of People Working in Each Industry Sector for Shetland Islands Region

The Shetland Islands welcomed 73,262 visitors to the region in 2017; this is an increase of approximately 13% from the 2013 levels[19]. Overall, the proportion of leisure visitors markedly rose (43%) within the same period, from 26,702 in 2013 to 38,096 in 2017. Tourism generated over £23 million for the Shetland economy in 2017[19], a 30% increase from 2013. Generally, the greatest expenditure for visitors was the cost of travel to the region from mainland Scotland at an average of £140 per person; this was over 10 times greater than the average amount spent per person on entertainment and recreation.

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[19] Shetland Island Council and Visit Scotland (2018) Shetland Islands Visitor Survey 2017 https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers/shetland-report-may-18.pdf [accessed 18/02/2020]

2008=100
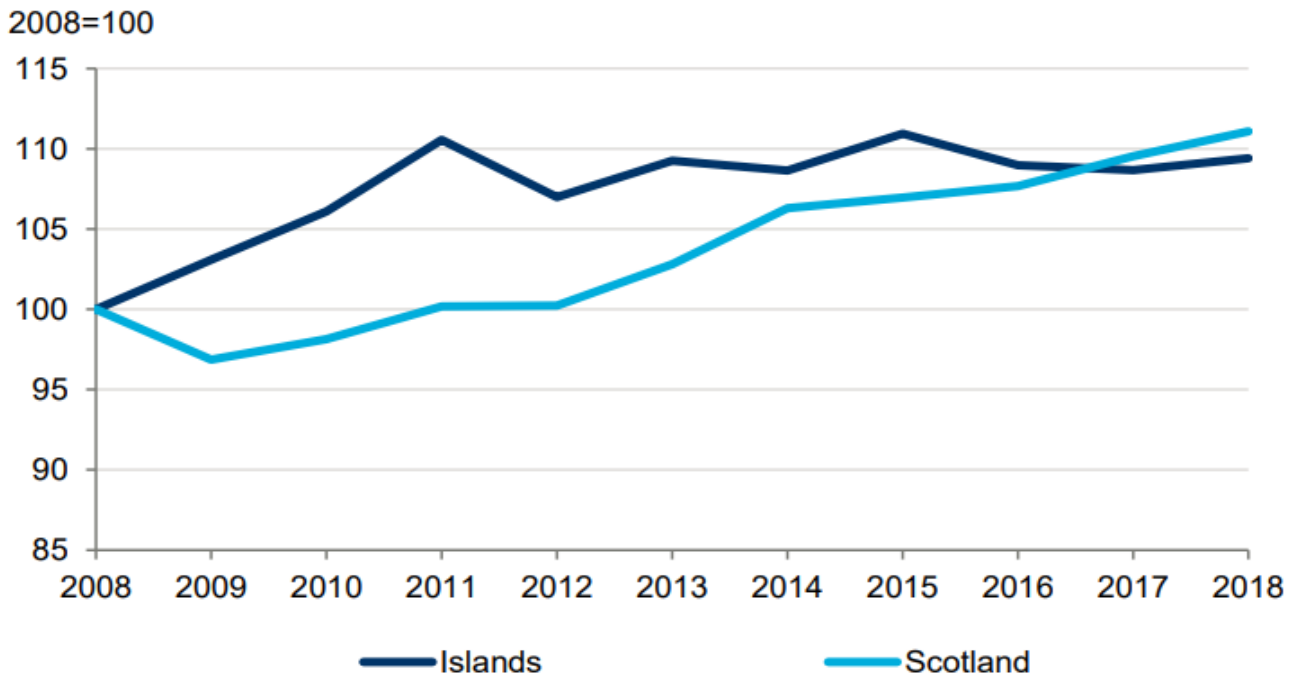
Figure 11: Index of GVA, Islands and Scotland, 2008-2018

As shown in Figure 11, Gross Value Added (GVA) across the Western Isles, the Shetland Islands and the Orkney Islands, denoted as the 'Islands', experienced a distinct increase in GVA relative to the national average during the 2008-2009 economic recession[20]; the islands are the only region in Scotland that did not see a contraction in economic output during this recession. However, overall GVA on the Islands has fallen in four out of seven years since 2011, despite steady growth across Scotland.

Between 2015 and 2018, the Islands' GVA declined by 2%. Between 2016 and 2018, the Islands' GVA remained relatively constant, approximately 9% higher than 2008 levels, and GVA for Scotland as a whole increased by approximately 3%, 11% higher than 2008 levels. Within the Shetland Islands Region, between 2011 and 2016, the region experienced a 16.4% increase in GVA, increasing Scotland's total GVA within that period by 0.5%. In 2016, the average GVA per head in the Shetland Islands Region sat at £29,009, above the national average of £24,801 GVA per head[21].

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[20] Oxford Economics (2019) International Research on Regional Economies. Implications for delivering inclusive growth in Scotland: https://www.scottishfuturestrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf [accessed 18/02/2020]

[21] Office for National Statistics (2016) Gross Value Added 2011 – 2016: https://www.ons.gov.uk/economy/grossvalueaddedgva
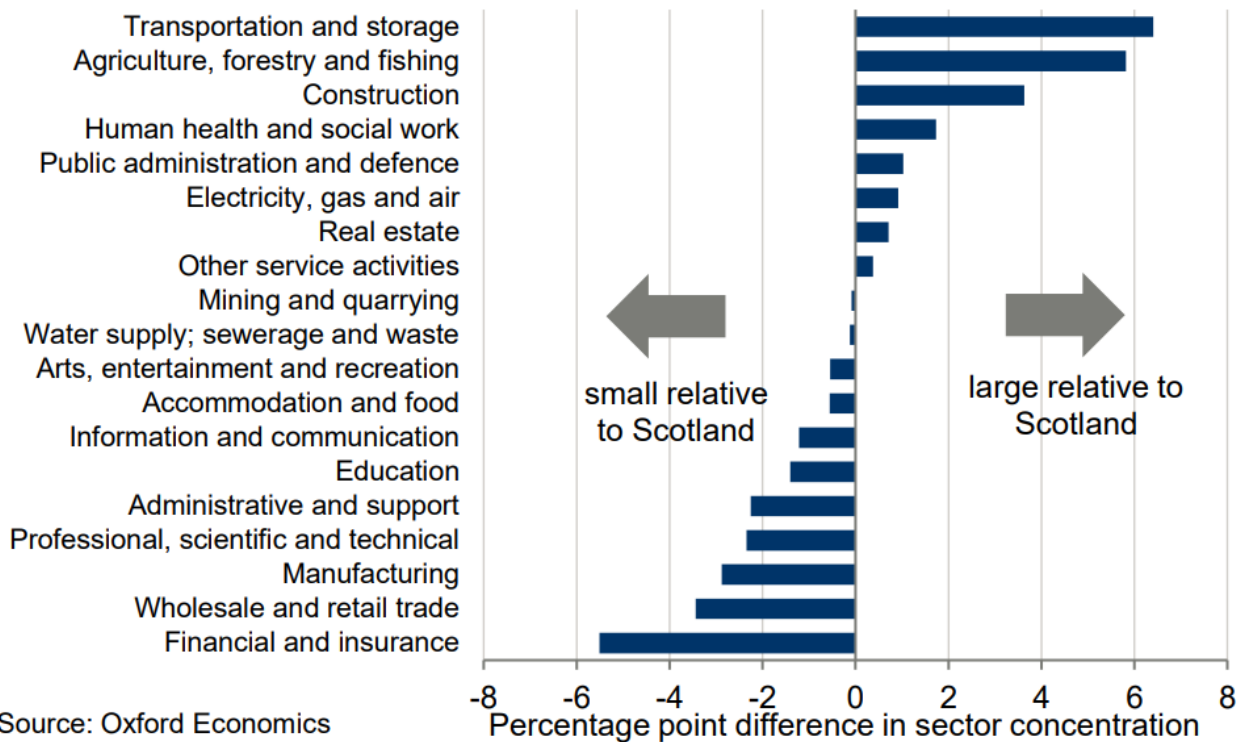
Source: Oxford Economics

Figure 12: Sector GVA share, Islands vs Scotland, 2018

Figure 12 shows the importance of the Transportation and Storage sector and the Agriculture, Forestry and Fishing sector to the Shetland Islands' economy; both are approximately a 6% above the national average. In contrast, the Financial & Insurance sector and the Wholesale & Retail Trade sector, two of Scotland's most successful sectors, are both under-represented on the Islands[20].

2.2.4. Access to Employment

Figure 13, overleaf, illustrates the accessibility in the region to key employment centres by public transport on a typical weekday morning. Key employment locations are mostly located in Scalloway, Lerwick and surrounding the Sullom Voe Oil Terminal. The figure indicates that the majority of mainland Shetland can access a key employment centre within 2 hours travel time on public transport on a typical weekday between 0600 and 1000. Bressay is also well-connected due to its close proximity to Lerwick, however, it is not possible to travel from the other islands to a major employment centre by public transport, with the exception of the southern tip of Yell, where residents are within walking distance to the ferry and connect with a bus in Toft.
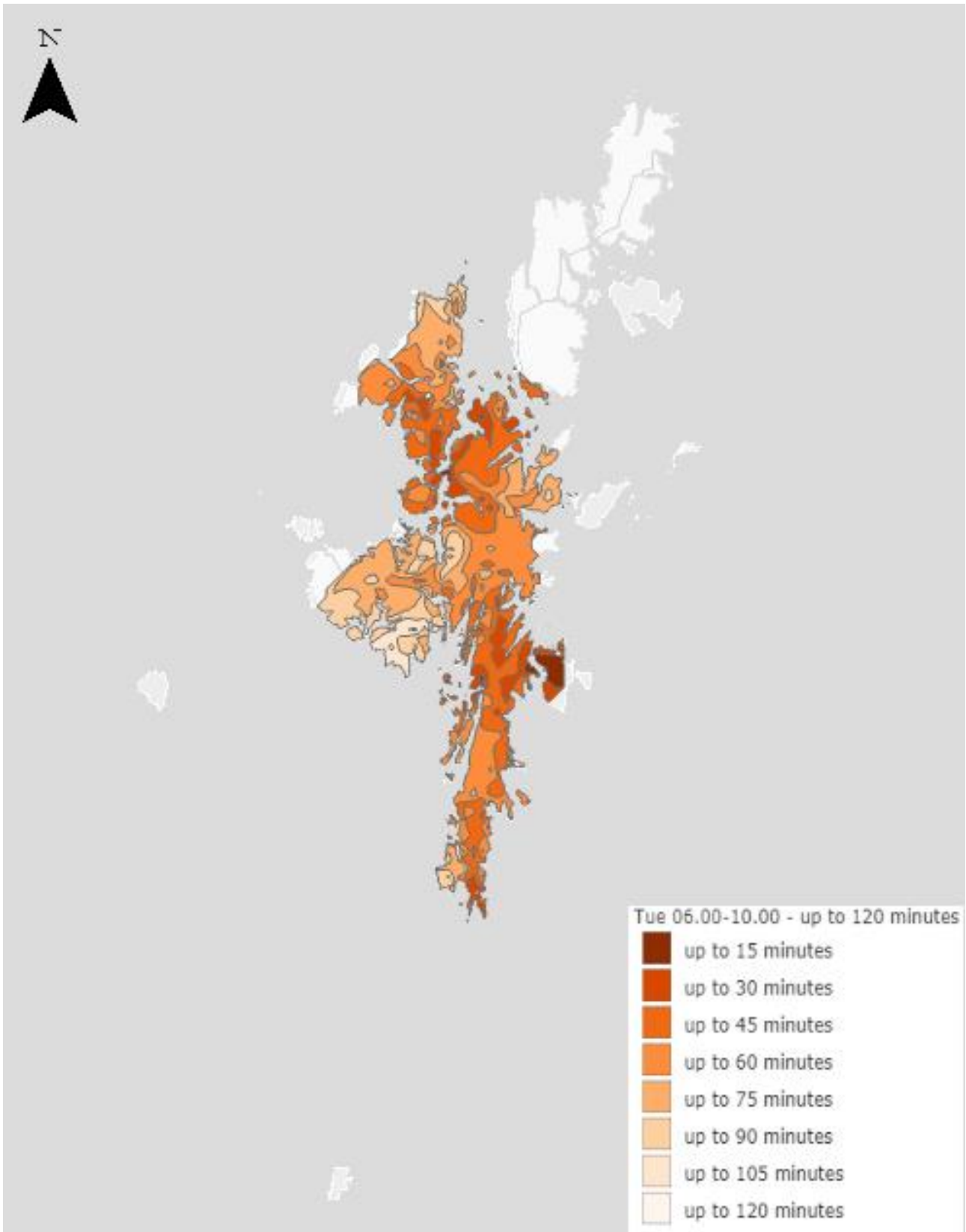
Figure 13: Access to Employment by Public Transport

(click to image to enlarge figure)

2.2.5. Deprivation

In 2018, the percentage of the population that did not have any qualifications in the Shetland Islands Region was 6.3%, 3.4% lower than the national average. Between 2014 and 2018, the percentage of the population without a qualification increased by 2.8%; this is the largest percentage increase in people with no qualifications compared to other local authorities. The Shetland Islands had the largest decline (10.8%) in people with the highest level of qualifications (NVQ4+) relative to other local authorities.

The Shetland Islands Region contributed 0.1% of Scotland's total benefit claimants and made up 0.4% of the country's claimant population. Between 2014 and 2018, the number of claimants in the Shetland Islands Region increased by 18.7%; nationally the number of benefit claimants decreased by 6.4%.

Between 2012 and 2017, the mean house price sale in the Shetland Islands Region increased by £44,150 (36.6%). The mean house price in 2017 was £164,683; this was £15,980 (8.8%) cheaper than the national average mean house price. The average salary in the Shetland Islands is only 1.5% lower than the national average, at £27,011.

Relative to other STPR2 regions, the Shetland Islands Region had the highest proportion (67.9%) of dwellings within the lowest council tax bands (A-C) in Scotland and the highest mean social housing weekly rental price; 5.2% higher than the national mean. Social rental is the rent paid by tenants for housing that is managed and owned by public authorities or housing associations.

Figure 14, overleaf, indicates that deprivation in the region, as measured by the Scottish Index of Multiple Deprivation (SIMD 2009), was generally low; there were no data zones on the Shetland Islands within the 20% most deprived in Scotland. Owing to the remote nature of the Region, it was ranked within the most deprived decile for the geographic access domain, which is intended to capture the issues of financial cost, time and inconvenience of having to travel to access basic services. Some types of deprivation exist on the North and East Isles and North Mainland, and pockets of deprivation exist within Lerwick North. Data zones surrounding Holmsgarth, which is an area of Lerwick, records high levels of crime in addition to health deprivation with both islands of Yell and Unst recording income deprivation.
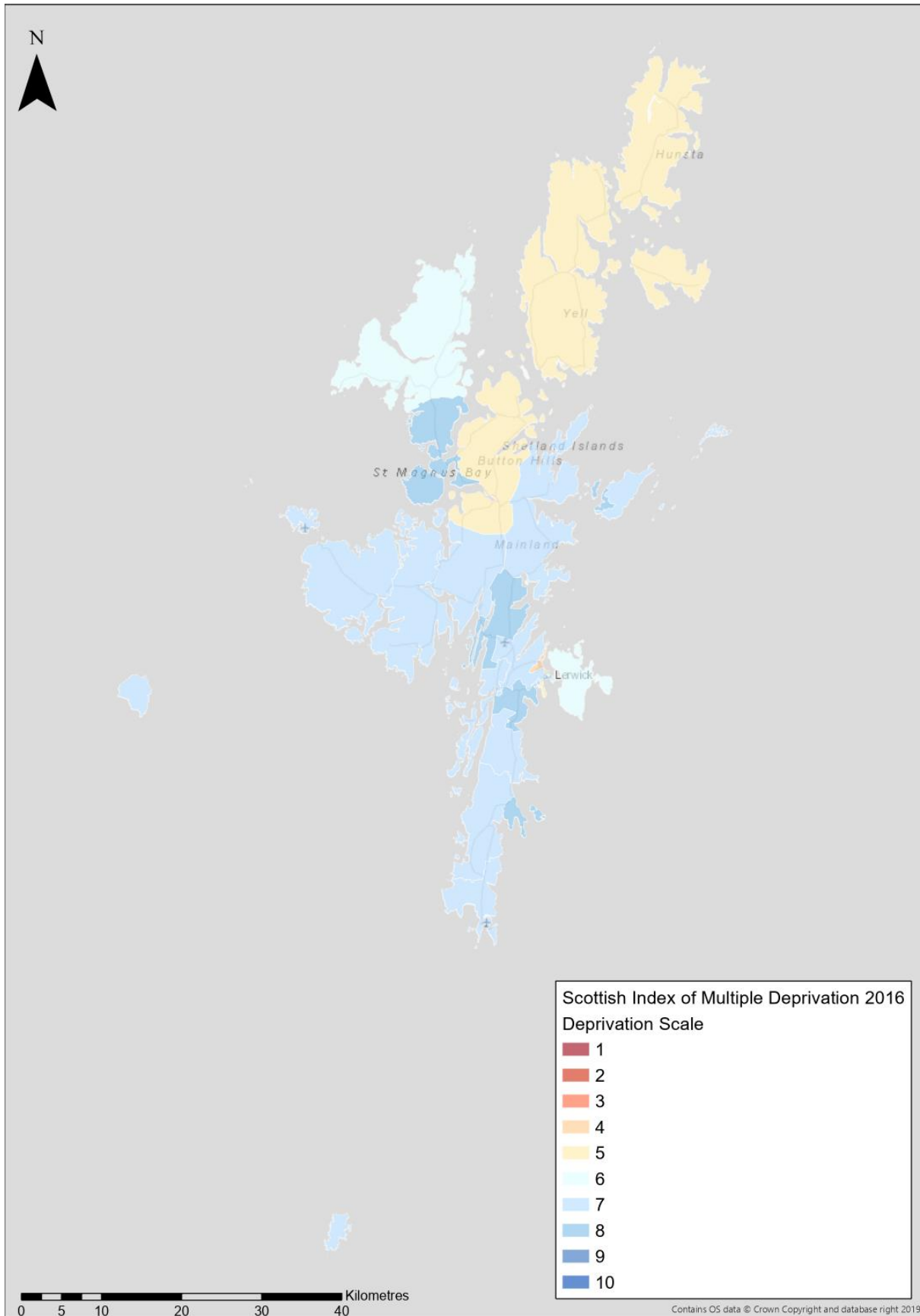
Figure 14: Shetland Islands Region Deprivation Index (SIMD)

(click to image to enlarge figure)

2.2.6. Health

The Scottish Health Survey data includes information on the proportion of the population of each local authority area that has a long-term physical or mental health condition; this can be used as a proxy indicator of health outcomes in addition to the ability of people to use all modes of transport. Between 2012 and 2015, the Scottish Health Survey employed the Warwick Edinburgh Mental Health and Wellbeing Scale (WEMWBS) recording a score of 50.7 for the Shetland Islands Region[22], comparable to the mean scores of Scotland (50.0), Orkney (50.8), the Western Isles (51.1) and the Highlands (51.1). As such, people in Shetland are considered to have a similar level of mental wellbeing as comparable rural areas and slightly higher than Scotland overall.

According to the Scottish Health Survey, between 2014 and 2017, the prevalence of limiting long-term illness amongst adults in the Shetland Islands Region was relatively low at 29% when compared with the national average (32%)[23]; limiting long-term illnesses were notably higher (35%) amongst the Western Isles' and Orkney Islands' adult populations. Relative to other local authorities in Scotland, the proportion of adults with non-limiting long-term illnesses within the Shetland Islands Council area was the 3rd highest level in Scotland at 17%; this is 3% higher than the national average (14%) and 2% higher than the Western Isles (15%).

According to the 2011 Census data, 17.3% of the population within the Shetland Islands Council area were limited in undertaking day-to-day activities due to their disability[24]. This equates to 23,167 disabled people. From 2001 to 2011 the proportion of the population limited in undertaking day-to-day activities due to their disability increased by 1.6%, whilst the overall population declined by 1%[8].

Between 2014 and 2017, the proportion of the population classified as overweight was relatively high in the Shetland Islands Region at 71%, compared with the national average of 65%. Notably, relative to all other local authorities in Scotland, the Shetland Islands Council area was recorded the 3rd highest level of overweight men (75%); this was comparable with the Western Isles (74%) and the Orkney Islands (73%). As shown in Figure 15, the prevalence of obesity in the Shetland Islands Council area was recorded as the highest of all Scottish local authorities within this time period, recorded at 37% of the adult population; this is 9% higher than the national average figure.

Relative to the national level, the Shetland Islands Region had one of the highest levels of emergency department attendance rates per 100,000 of the population, with an attendance rate of 30,000 to 35,000 per 100,000 people according to 2017/18 levels; this was notably higher than other island authorities (such as Orkney Island Council and

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[22] NHS Shetland (2017) Public Health Annual Report 2016-17: Mental Wellbeing in Scotland : https://www.shb.scot.nhs.uk/board/publichealth/documents/phar2017-mainreport.pdf

[23] Scottish Government (2018) The Scottish Health Survey (SHeS): Results for Local Areas 2014-2017: https://www.gov.scot/publications/scottish-health-survey-results-local-areas-2014-2015-2016-2017/

[24] National Records of Scotland (2011) Long-term activity-limiting health problem or disability by council area, Scotland, 2001 and 2011: https://www.scotlandscensus.gov.uk/documents/censusresults/release2a/rel2asbfigure15.pdf

Comhairle nan Eilean Siar) and was comparable with attendance levels experienced within the local authorities of Glasgow and Inverclyde.
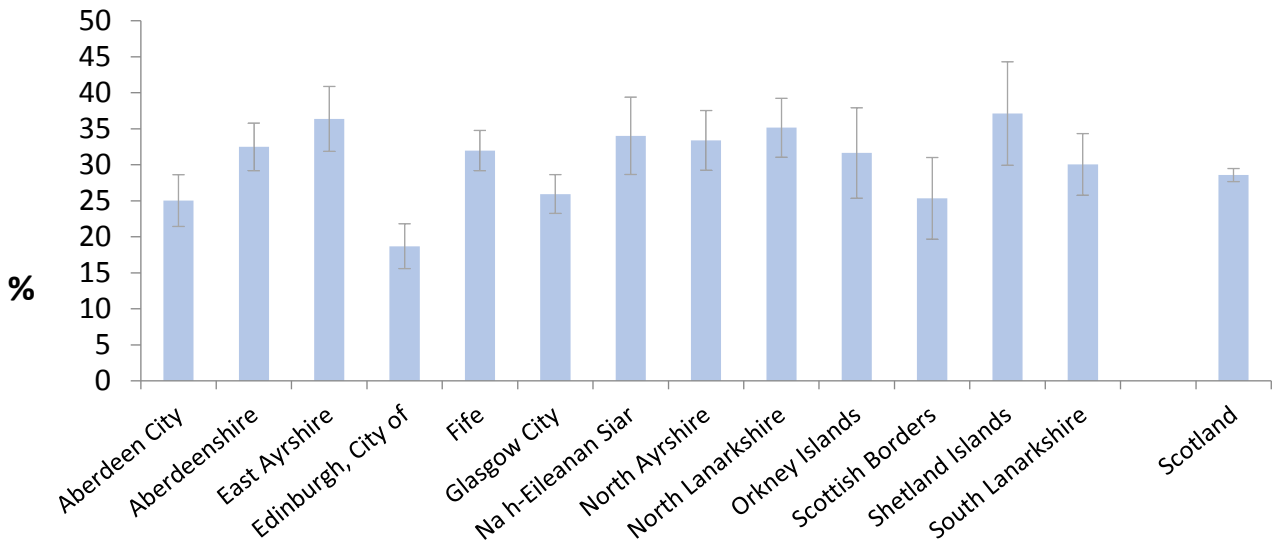
Figure 15: All Adults: Prevalence of Obesity by Local Authority (The Scottish Health Survey, 2014-17)

2.3. Environmental Context

As shown in Figure 16, overleaf, the Shetland Islands Region offers significant environmental, cultural and historical assets. Specifically, the region has 111 designated areas[25], including:

- 78 Sites of Special Scientific Interest (SSIs);
- 12 Special Areas of Conservation (SACs);
- 12 Special Protection Areas (SPAs);
- 3 proposed Special Protection Areas (pSPAs);
- 1 Ramsar Site;
- 2 National Nature Reserves;
- 2 Nature Conservation Marine Protected Areas (MPA); and
- 1 Demonstration and Research Marine Protected Area.

These sites are designated to assist in the management and/or conservation of the region's diverse and rich natural heritage, including ecologically important animal and plant species and internationally significant habitats.

There are no Air Quality Management Areas within the Shetland Islands Region.

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[25] Shetland Islands Council (2017) Biodiversity Duty Report for Shetland Islands 2015 – 2017 https://www.shetland.gov.uk/developmentplans/documents/SICBiodiversityDutyReport2015-17-Final.pdf [accessed 18/02/2020]
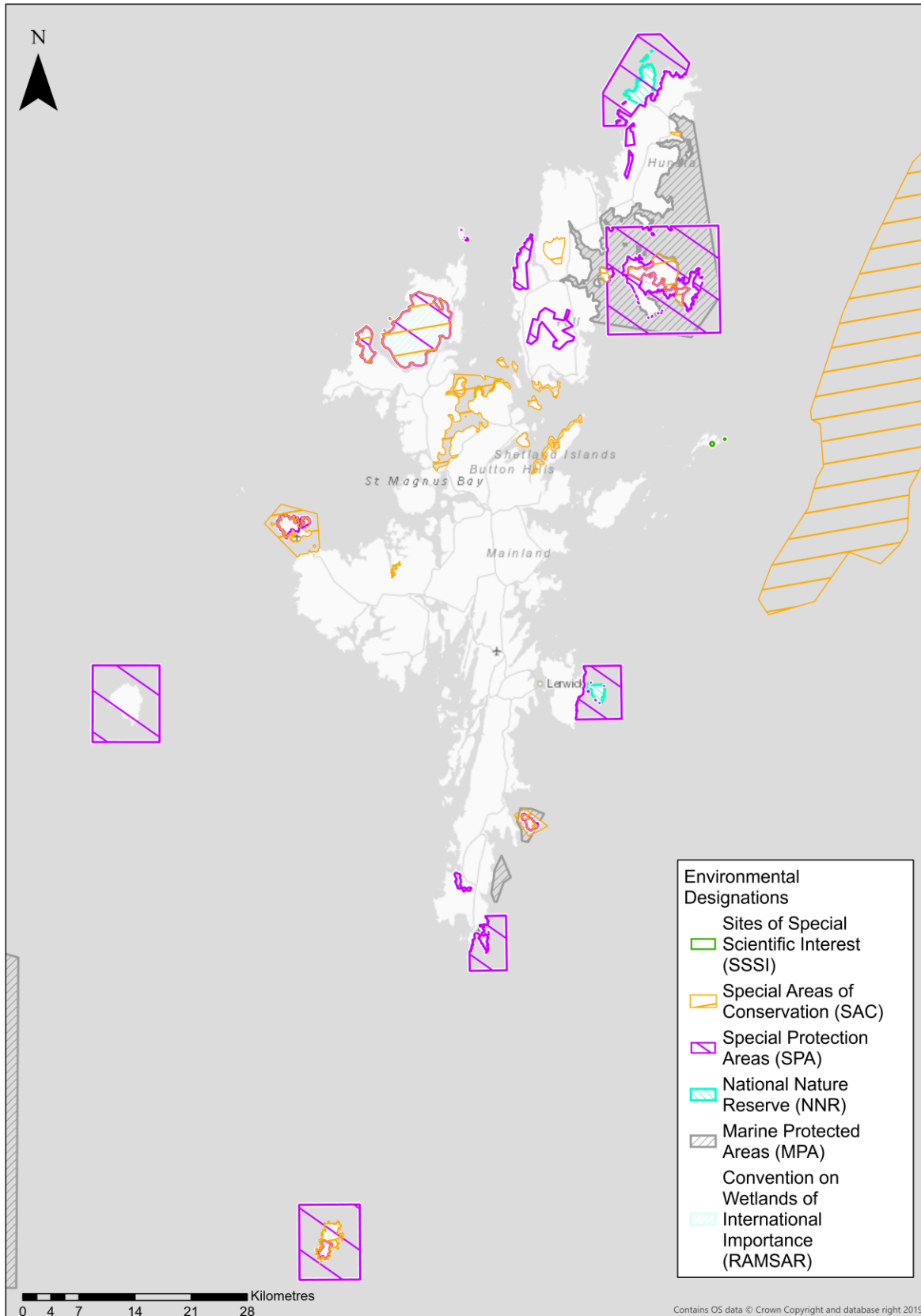
Figure 16: Shetland Islands Region Environmental Designations

(click to image to enlarge figure)

2.4. Transport Context

2.4.1. Strategic Transport Network

Within the definition of this study, the Shetland Islands Region strategic transport network is limited to the subsided external ferry services from Aberdeen to Lerwick (via Kirkwall), operated by Serco NorthLink.

2.4.2. Active Travel Network

The National Cycle Network Route 1 (NCN1) utilises the road network to connect the south of mainland Shetland (Sumburgh) and the northeast of Unst (Norwick) via Yell. Figure 17, overleaf, illustrates the Shetland Islands Council's Core Paths network.

2.4.3. Ultra Low Emission Vehicles

Relative to other Scottish local authorities, the Shetland Island Council area has the second lowest level of licensed Ultra Low Emissions Vehicles (ULEVs)[26], with a total of 52 licenced vehicles as of 2019 (Q3)[27].

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[26] Ultra low emission vehicles (ULEVs) are vehicles that emit less than 75g of carbon dioxide (CO_2) from the tailpipe for every kilometre travelled. In practice, the term typically refers to battery electric, plug-in hybrid electric and fuel cell electric vehicles.

[27] Department for Transport Statistics (2020) VEH0132: Licensed ultra low emission vehicles by local authority: United Kingdom: https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01
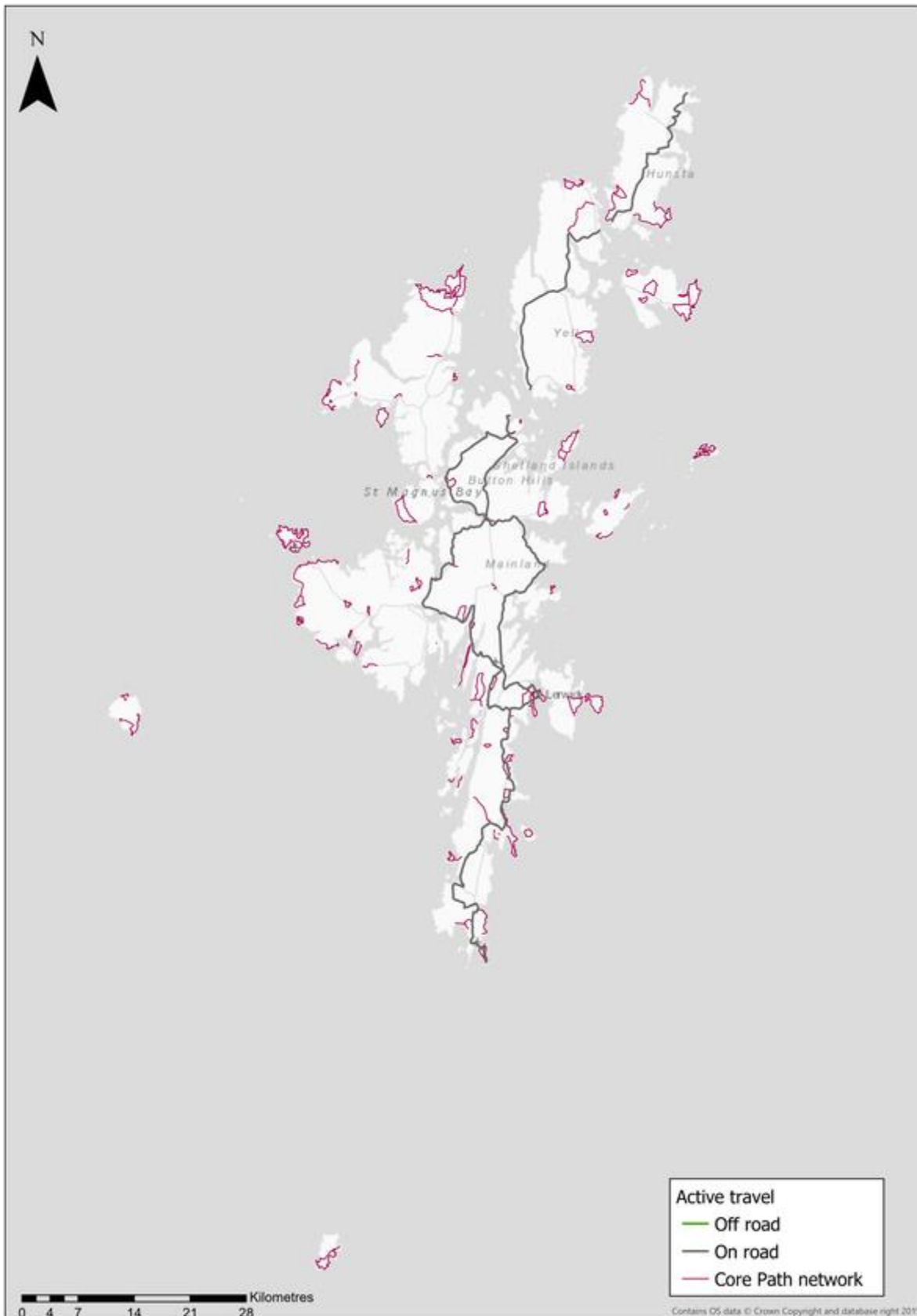
Figure 17: Shetland Islands Region Active Travel Network

(click to image to enlarge figure)

2.4.4. Bus Network

ZetTrans state that there is a comprehensive bus network in the region, consisting of frequent mainline services, rural connecting services and bookable dial-a-ride services[28]; these buses offer many rural communities lifeline services and access to essential services including work, healthcare and leisure. There are mainline or spine road services that run predominantly north to south. These services are more frequent and have larger, accessible vehicles. Feeder services provide access to the mainline services from rural outlining areas. These are typically less frequent and serviced by smaller vehicles, including mini-buses.

All of the bus and coach operators that serve the region are local to the Shetland Islands and are all financed by ZetTrans.

2.4.5. Ports, Maritime and Aviation

There are nine internal ferry destinations across the region[29], as outlined in Figure 19: Bressay, Fair Isle, Papa Stour, Foula, Whalsay, Skerries, Unst, Yell and Fetlar. Daily services operate between the Mainland and Yell, Unst, Fetlar, Whalsay and Bressay, with freight and limited passenger services operating between the Mainland and Foula, Skerries, Fair Isle, and Papa Stour. These serve as lifeline and seasonal crossings that connect communities to key services.

External ferry services travel between Lerwick and Aberdeen, with some services travelling via Kirkwall. The external ferry services are operated by Serco NorthLink and are subsidised by the Scottish Government. As demonstrated in Figure 18, the ferry route connecting Aberdeen to Lerwick proved to be the most popular in 2018; carrying over 452,000 passengers, cars, coaches and commercial vehicles[30]. Notably, commercial vehicles, which predominantly carry produce from the Fishery and Aquaculture industry, accounted for over 70% of the utilisation for this service.

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[28] ZetTrans (2020) Shetland by Bus: https://www.zettrans.org.uk/travel/public-transport/bus [accessed 18/02/2020]

[29] Shetland Islands Council (2020) Routes and Destinations: https://www.shetland.gov.uk/ferries/mapofservices.asp#RoutesandTerminals – accessed 18/02/2020

[30] NorthLink Ferries (2019) Annual Carryings: https://www.northlinkferries.co.uk/wp-content/uploads/2019/02/Annual-Carryings-2018.pdf [accessed 18/02/2020]

Annual Carryings (1 Jan 2018 - 31 December 2018)
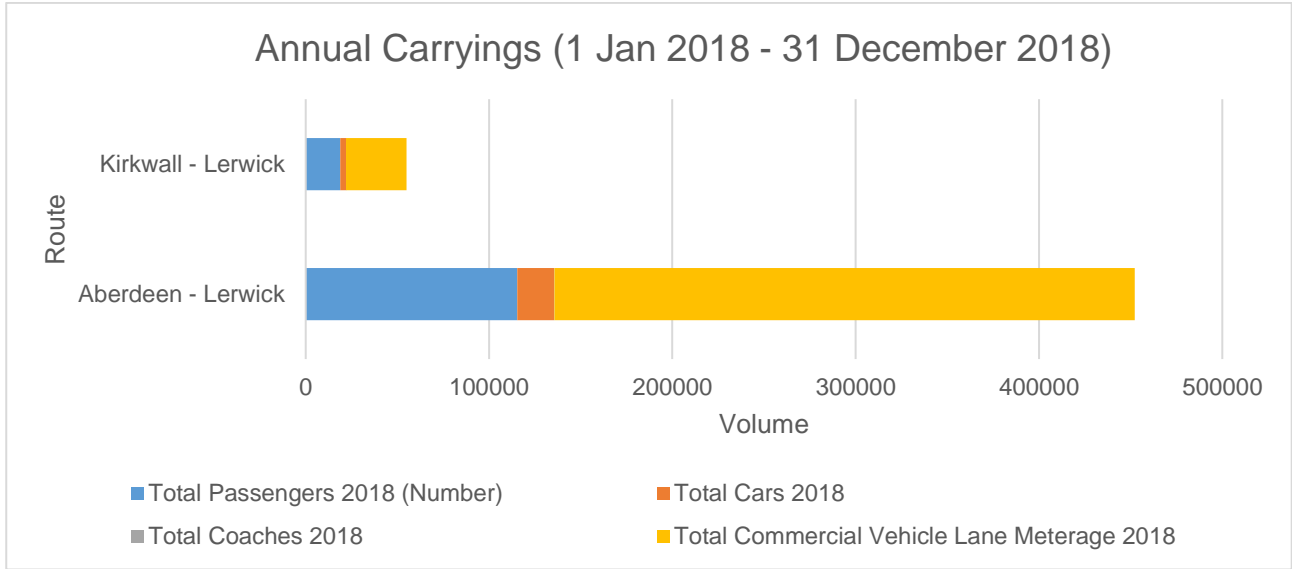
Figure 18: Ferry Utilisation (2018)

A full review of ferry data is currently being co-ordinated as part of STPR2, which will provide a baseline of island connectivity for future planning.
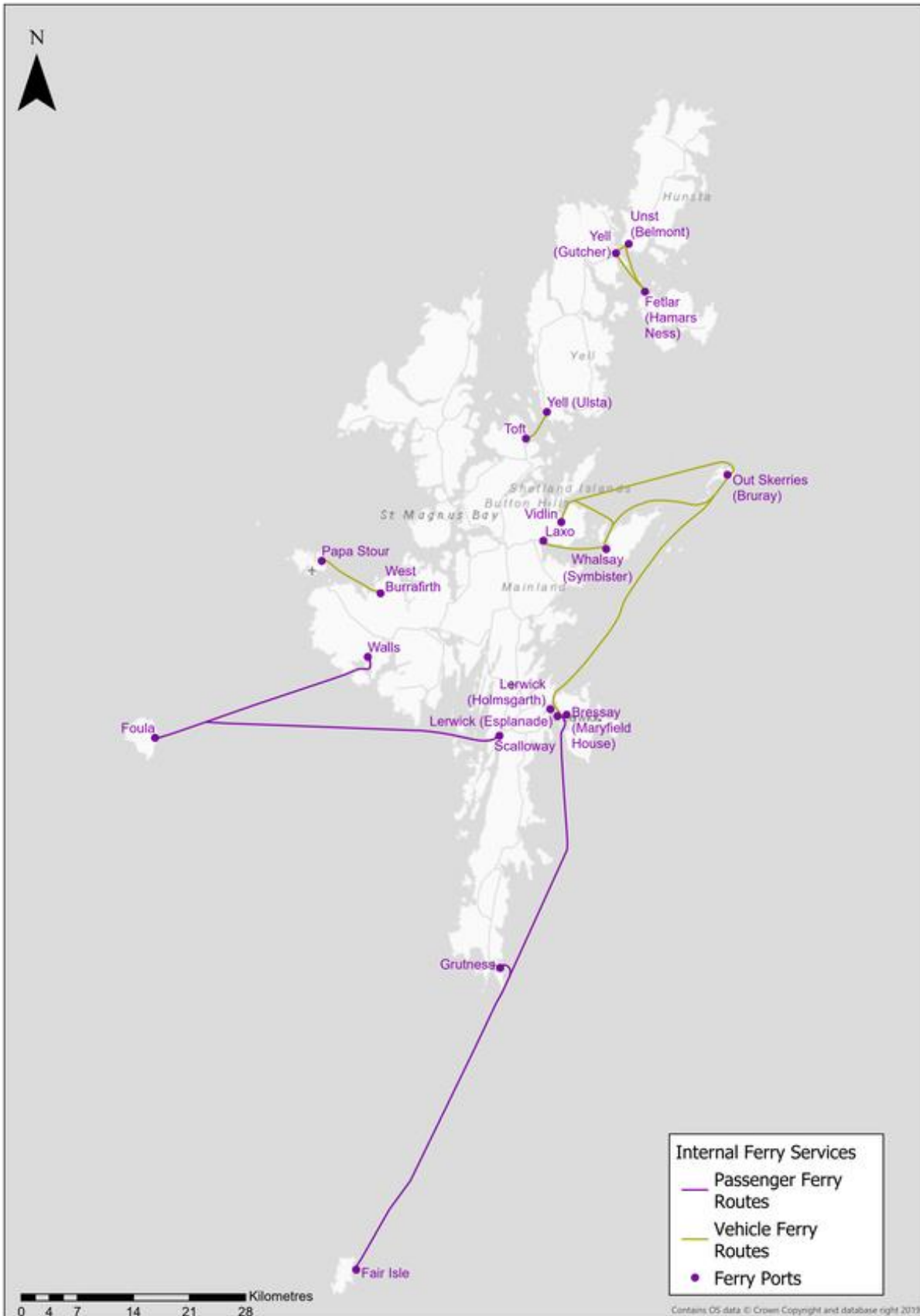
Figure 19: Internal Ferry Services - Operated by Shetland Island Council

(click to image to enlarge figure)

Regional airport use is growing in the Shetland Islands Region, providing internal air services. Tingwall Airport (Lerwick) provides scheduled, direct, internal flights to three islands, as shown in Figure 20, overleaf. Flights are available to Papa Stour (ceases 31 March 2020), Foula and Fair Isle and are operated by Airtask Group, who were awarded the Public Service Obligations (PSO) Contract in June 2005[31]. These flights are subsidised by Shetland Island Council.

Operating from Sumburgh Airport, Loganair provide direct, external, commercial flights to Inverness, Aberdeen, Edinburgh, Glasgow, Kirkwall, Manchester and Bergen[32]. The use of external flights had been increasing; external flight patronage exceeded 270,000 passengers in 2015[33], relative to fewer than 155,000 passengers in 2008. Patronage then decreased to approximately 250,000 in 2016 and remained relatively consistent to 2018.

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[31] Airtask (2020) Shetland Islands Inter Island Air Service: https://www.airtask.com/shetland-islands-inter-island-service [accessed 18/02/2020]

[32] Shetland Islands Council (2019) Flights to Shetland: https://www.shetland.org/plan/how-to-get-here/flight [accessed 18/02/2020]

[33] Civil Aviation Authority (2019) UK Airport Data: https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-airport-data/ [accessed 06/02/2020]

Figure 20: Shetland Islands Region Aviation Network

(click to image to enlarge figure)

2.4.6. Internal and External Journeys

Only approximately 4% of vehicles travelling from the Shetland Islands has a destination outwith the Shetland Islands Region, reflecting the geographic location of the region.

2.4.7. Road Network

There are no trunk roads in the region. The road network within the Shetland Islands Region is the responsibility of the Council.

Within the Shetland Islands Region, the average number of casualties recorded in Department for Transport (DfT) STATS19 datasets fell by 33% between 2013 and 2017, compared to the period between 2004 and 2008[34], from 51 to 34.

Between 2013 and 2017, average yearly slight, serious and fatal casualties for all ages fell by 31%, 45% and 40%, respectively, relative to 2004 to 2008 levels. Across all modes, the average yearly casualties fell or remained unchanged between 2013 and 2017 and between 2004 and 2008, with the exception of motorcycle casualties which increased by 7% (one casualty) relative to 2004 to 2008 levels, which compares to a national reduction of 29%.

2.5. Context Summary

The key points to note from the context review are:

- The Shetland Islands Region has a relatively stable population; however, the region's demography is shifting towards an aging population, with a decrease in the working age population and an increase in those aged 65 and over. Although employment in the region was high compared to the national average and the average salary is only marginally lower than the national average, relative to other local authorities, the Shetland Islands Council area had the joint highest rate of underemployment in Scotland and has experienced the largest fall in economic activity in recent years (2014-2018).
- The industry with the highest levels of employment is the Agriculture, Forestry and Fishing industry; this industry has experienced notable growth of 25% and its significance in the region is 6% greater than the national level. Within the same period, the Administration & Defence industry encountered significant growth of 60% whilst the Accommodation & Food Service industry experienced the largest decline of 28%. Tourism in the region is growing, with the industry contributing 30% more to the Shetland Islands' local economy in 2017 relative to 2013 levels.
- In 2011, the proportion of the journeys to work undertaken within the Shetland Islands Region with a distance of less than 2km (17.4%) was higher than the national average. Overall, it appears that commuting distances in the Shetland Island Region are broadly similar to those across Scotland.
- Car ownership in the Shetland Islands is high relative to the national level, with 81% of households in the region accessing a car or van and 39% of households accessing three or more cars or vans; this rate of access to multiple cars or vans is highest of all the STPR2 regions.
- A high proportion of the region's working population drive to their place of work (71%), compared with nationally (62%). A significantly lower proportion of the population

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[34] Department for Transport (2019) Road Safety Data:
https://data.gov.uk/dataset/cb7ae6f0-4be6-4935-9277-47e5ce24a11f/road-safety-data

travel to work by bus (3%) compared to nationally (10%); which may be due to the limited accessibility to employment centre by public transport from the islands. The remaining mode shares for commuting to work, including working at home, are similar to the national average.

- There were no data zones on the Shetland Islands within the 20% most deprived in Scotland. Owing to the remote nature of the region, the Shetland Islands was ranked within the most deprived decile for the geographic access domain, which is intended to capture the issues of financial cost, time and inconvenience of having to travel to access basic services.

- The National Cycle Network Route 1 (NCN1) utilises the road network to connect the south of mainland Shetland (Sumburgh) and the northeast of Unst (Norwick) via Yell. There is a comprehensive bus network, with mainline services running north to south and feeder services connecting the more rural areas.

- The Council operate internal ferry services to nine islands in the region, with three islands also served by the internal air services. External ferry services travel between Lerwick and Aberdeen, with some services via Kirkwall, are operated by Serco NorthLink. Loganair provide external flights to destinations in mainland Scotland, Manchester and Bergen.

3. Problems and Opportunities

3.1. Approach to Problems and Opportunities Identification

Deriving evidenced transport-related problems and opportunities is a critical element of the Initial Appraisal: Case for Change. They are identified from a range of sources, including a review of existing policy and strategy documents, data analysis and extensive stakeholder engagement. This chapter sets out the problems and opportunities with the strategic transport network in the Shetland Islands Region and details the approach to their identification.

3.1.1. Data Analysis

A wide range of data sources have been used to identify transport-related problems and opportunities in the region. Analysis of the data has also enabled problems and opportunities identified through stakeholder engagement to be evidenced, to understand the real and perceived nature of feedback and comments raised. Sources of analysis have included primary data such TRACC connectivity data[35], national datasets as well as data gathered from recent reports and studies in the region. Key findings from the data analysis are presented below, to evidence the problem and opportunity themes set out.

3.1.2. Stakeholder Engagement

Stakeholder engagement is an important element in the identification and verification of problems and opportunities. For the Shetland Islands Region this has consisted of:

- **Problems and Opportunities workshop** held in Lerwick with regional stakeholders in June 2019;
- **Option Generation workshop** held in Lerwick in November 2019 to identify potential interventions which may address the identified problems and opportunities;
- **Structured interviews** with senior officers across the local authorities and other organisations in the region;
- **Elected Members Briefing** held with elected members in February 2020 in Lerwick;

Figure 21: Stakeholder Engagement

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[35]TRACC – Multimodal Accessibility analysis tool, which calculates journey times between a known set of origin and destinations using a physical network (i.e. roads and paths) and public transport timetables, where available. As such, it can provide detailed assessment of PT and active travel journey times displaying the varying levels of accessibility in a study area.

Jacobs **AECOM**

- An **Online Survey** undertaken between 2nd December 2019 and 10th January 2020 for the public and organisations to provide their views on transport issues and challenges in their day-to-day journeys. The survey generated 3,025 responses nationally from members of the public, representatives and / or businesses;
- **Regional Transport Working Group** meetings, which include representatives from Shetland Islands Council, ZetTrans, relevant partners, Transport Scotland and the STPR2 consultant team; and
- **School Engagement** is underway across the country, engaging with pupils at selected primary and secondary schools to hear their ideas for transport priorities and interventions. Session are being arranged with Scalloway Primary School and Anderson High School to take place in March 2020.

Further details of stakeholder engagement activities are available in **Appendix C.**

3.2. Problems and Opportunities

Based on the activities described above, the following transport-related problems and opportunities have been identified for the Shetland Islands Region. Evidence to support the themes listed below is provided throughout section 3.2.1.:

- Ferry and Air Capacity Constraints
- Accessibility to Public Transport
- Resilience, Reliability and Integration
- Affordability
- Connectivity
- Emissions
- Depopulation

3.2.1. Problems

FERRY AND AIR CAPACITY CONSTRAINTS
Internal Shetland Island Transport
The Shetland Inter-Islands Transport Study (2016) states that there are capacity issues on commuter ferry services from the Islands to mainland Shetland[36]. For example, on the 0830 departure from Bressay, the deck utilisation is frequently in-excess of 80%, particularly in the summer months. In 2013/14, 74 0830 services sailed at over 80% deck utilisation, which is the threshold for high utilisation. Similarly, the 1715 service from Lerwick is highly utilised. The study also raised similar capacity issues for Unst and Whalsay
From the smaller islands, the study identified internal ferry capacity issues between Fair Isle and Foula. For example, the MV Good Shepherd IV and The MV New Advance being very limited in terms of vehicle and passenger capacity, with the vessels having capacity for one or two cars and 12 passengers but cannot accommodate any heavy freight.

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[36] PBA (2016) Shetland Inter-Islands Transport Study: https://www.shetland.gov.uk/transport/documents/20161124SIITSDraftOptionsAppraisalReportvFINAL.pdf [accessed 18/02/2020]
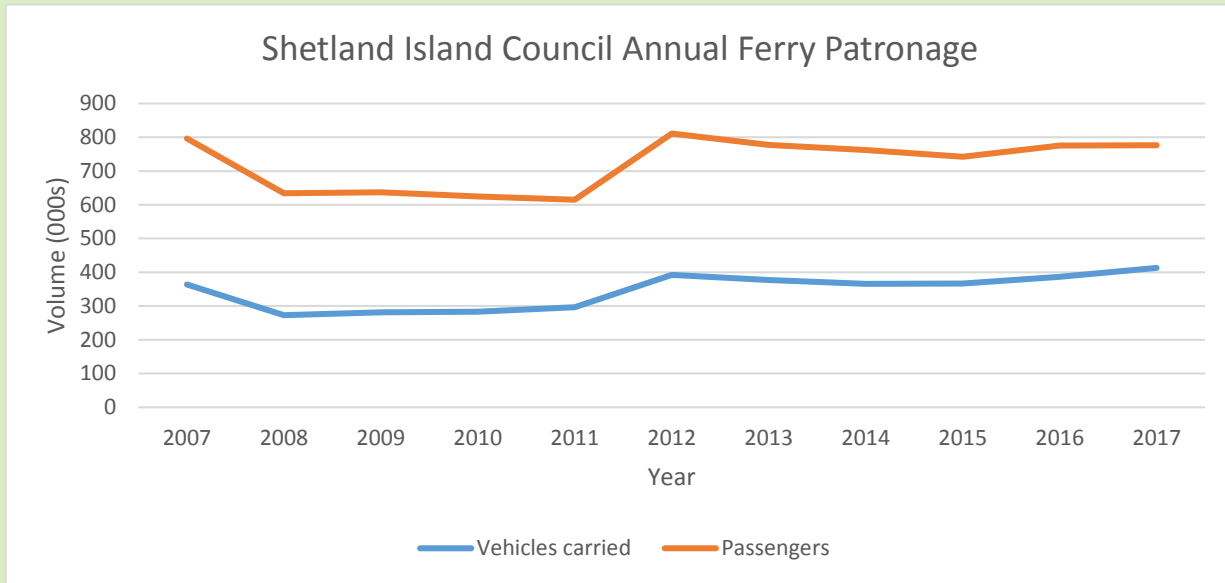
Figure 22: Shetland Island Council Ferry Patronage

Figure 22 indicates relatively consistent patronage numbers on the Shetland Island Council services since 2012. There was a significant drop in patronage between 2008 and 2011, however, this increased to 2007 levels in 2012 and has been relatively consistent since[37].
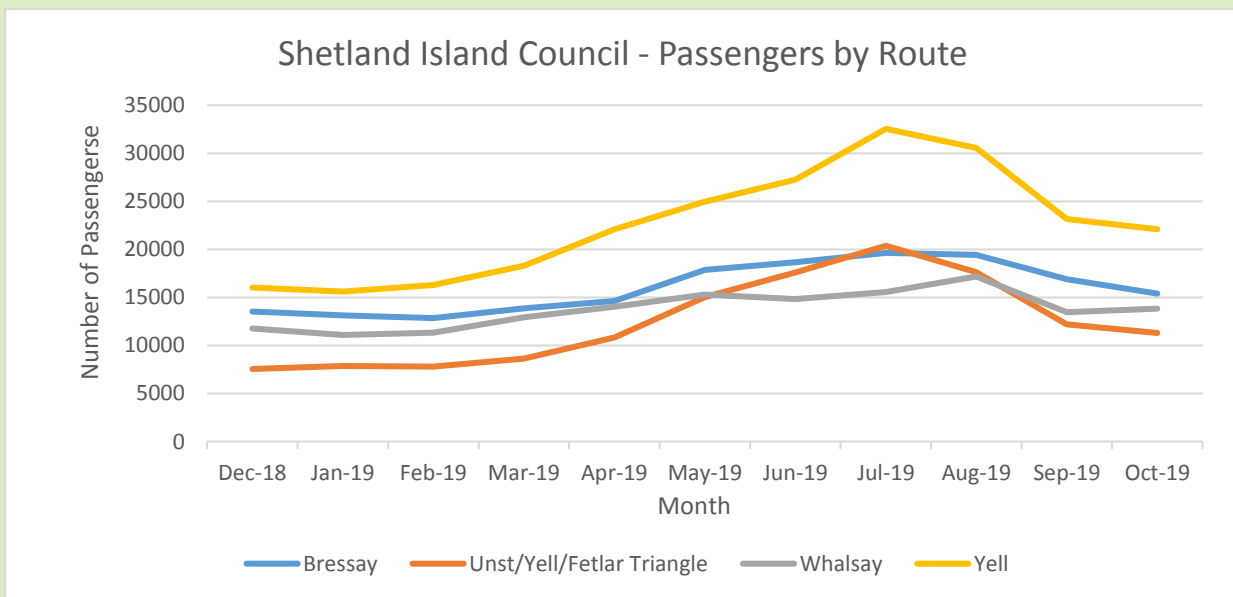
Figure 23: Shetland Island Council Passenger Numbers by Route

Figure 23 highlights that the number of passengers increases in the summer months on the four main routes within the region[38].

Figure 24 highlights capacity issues, with the number of vehicles unable to travel on their desired service peaking in May 2019 at 0928 on the Yell to Shetland mainland service.
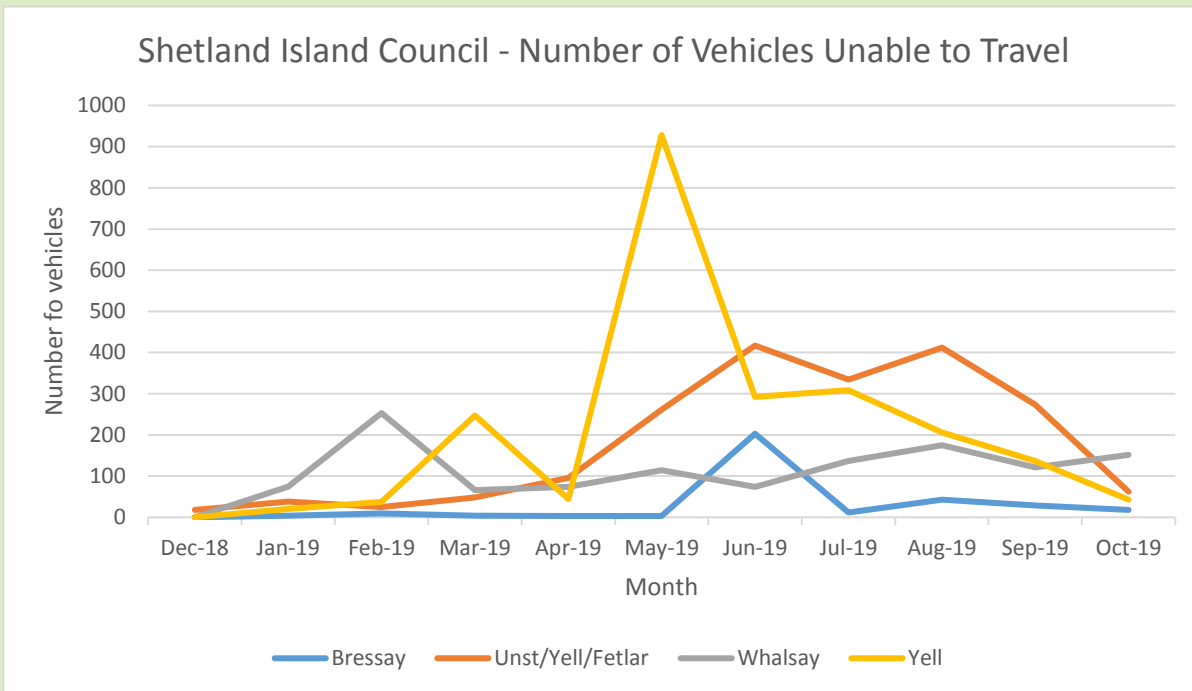
Figure 24: Shetland Island Council Number of Vehicles Unable to Travel by Route

The Shetland Inter-Island Transport Study (2016) also identified that the air service on the Fair Isle is limited to six to seven passengers but can take eight to nine passengers depending on weight, placing significant capacity constraint on the island, particularly when flights and ferries are impacted by poor weather conditions.

Transport to and from the Shetland Islands

Passenger Services

The cabins of the Serco NorthLink services operate at a very high capacity throughout the peak season. Figure 25 shows the annual patronage levels on Serco NorthLink services between 2007 and 2017. This indicates that patronage has been relatively constant. Stakeholders reported capacity issues on individual services or at certain times of the year, which may be capping the overall annual demand. Utilisation data has been requested to evidence these problems further.

Stakeholders report that it is very difficult to book a cabin, which is seen as essential for the overnight travel (particularly if travelling with a family) and a car berth on a service. There is often some availability to travel with a car but no cabins available or vice versa.

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[37] Transport Scotland (2018) Scottish Transport Statistic No 37 2018 Edition, Chapter 9: https://www.transport.gov.scot/publication/scottish-transport-statistics-no-37-2018-edition/chapter-9-water-transport/#tb92 [accessed 18/02/2020]

[38] Shetland Islands Council, Shetland Islands Council Performance Explorer: https://www.pentanarpm.uk/CovalentWebModule/Dashboard?c=412&i=5127626 [accessed 05/02/2020]

However, stakeholders fed back that to book both on the same service, during peak time, it needs to be planned well in advance. A Northern Isles Ferry Service Consultation report (2018) outlined the disparity of service between Orkney and Shetland, which comprise similar population levels[39]. Timetabled ferry services to mainland Scotland during the peak season offer over five times as much capacity for the Orkney Isles compared to the Shetland Islands.

Serco NorthLink Ferry Patronage
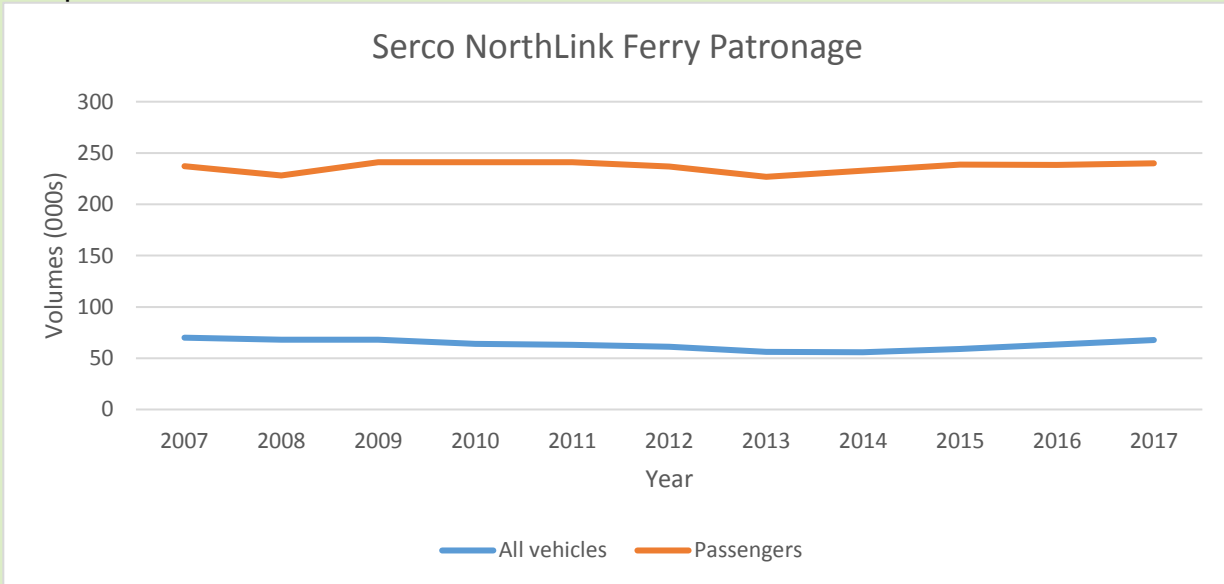
Figure 25: Serco NorthLink Ferry Patronage

VisitScotland have taken steps to increase tourism in the region and have been successful. Total visitor numbers have increased by 13% between 2013 and 2017, from an estimated 64,655 to 73,262[19] .Within this period the proportion of leisure visitors markedly increased by 43%, from 26,702 to 38,096 visitors. Although the Shetland Islands Visitor Survey (2017) highlights that a high proportion (75%) of visitors reported being 'very satisfied' with their visit to Shetland in 2017, one of the key areas for improvement included improving the external transport options; a number of open-ended survey respondents deemed current transport options to be 'restrictive'. Visitors tend to visit the Shetland Islands during the summer months. VisitScotland have set ambitious targets to grow the industry from £23 million to £33 million between 2018 – 2023 and have tried to extend the tourist season through events out with the traditional tourist peak season. VisitScotland have reported, through stakeholder engagement, that further growth during peak tourist season is constrained by the capacity on both the external ferries and air routes to the region, which often operate at capacity.

Freight Capacity

Freight can travel into and out of the Shetland Islands on the passenger vessels in addition to the freight vessels. Audit Scotland reported that commercial vehicle traffic on the Northern Isles Ferry Service (NIFS) network increased by 116% between 2012 and

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[39] PBA on Behalf of Transport Scotland (2018), Appraisal of Options for the Specification of the 2018 NIFS – Final Report (Redacted version), Page 39, https://www.transport.gov.scot/media/41903/final-report-appraisal-of-options-for-specification-of-2018-northern-isles-ferry-services-april-2018.pdf

2018 to approximately 317,000 lane metres[40] [41]. Stakeholders reported that whilst the lane metres utilised by freight on the passenger vessels have remained relatively constant, there has been a gradual increase in the volumes using the freight vessels over the years. Stakeholders also reported that this was constraining investment in the Shetland Islands economy, with local industry representatives reporting that the Aquaculture and Fishery industry are reluctant to invest in expansion as they do not have the confidence that there is sufficient capacity to export their product from the region, particularly during the livestock season (September to October) when freight services are further constrained.

As mentioned above, there is some provision for freight on the passenger services. For example, seafood exports, which constitute 40% of the Shetland Islands Region's freight exports, use a 50/50 split between the freight and passenger vessels[39]. This creates competition for space between freight and passengers on the passenger services.

The Stewart Building Group provided figures that show exports of salmon have grown by 20% between 2015 and 2018, whilst whitefish, mussel and shellfish have grown by 42%, 24% and 26%, respectively, over the same period. All of these industries are forecast to continue growing between 2018 and 2021 by between 5% and 48%[42]. Overseas food and drink exports were worth approximately £6 billion to the Scottish economy in 2017, which saw a rise of around 10% from 2016[42]. Fish and seafood accounted for the majority of the food exports, with salmon being the UK's largest food export. The Shetland Islands produce 25% of salmon exported from the UK, indicating how important the region is to the UK salmon industry. Additionally, in 2017, the Shetland Islands were the largest producing area for mussels in Scotland, with 81% of the Scottish mussel production occurring in the region[43]. This emphasises the importance of region to the Scottish shellfish industry. As mentioned above, tourism growth places additional demand on passenger vessels. The competing demands of freight and passengers on the passenger vessels, during peak periods, exacerbates respective capacity issues. Stakeholders view this as a constraint on growth in the Aquaculture and Fishing industry.

Additionally, as per the Serco NorthLink's ferry website, and engagement with Serco NorthLink, freight service capacities experience further pressures during the peak livestock season (September to October), where the Monday night freight service from Lerwick to Aberdeen is removed to provide an additional sailing from Orkney for a six to eight-week period. During the Problems and Opportunities workshop, stakeholders echoed these concerns regarding the limited external freight capacity provisions, particularly on the ferry network, and the subsequent restrictions placed on industries.

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[40] NorthLink Ferries (2018) Annual Carryings: https://www.northlinkferries.co.uk/wp-content/uploads/2018/01/2012-Annual-Carryings.pdf [accessed 17/02/2020]

[41] NorthLink Ferries (2017) Annual Carryings: https://www.northlinkferries.co.uk/wp-content/uploads/2019/02/Annual-Carryings-2018.pdf [accessed 17/02/2020]

[42] Figures provided by the Stewart Buildings Group in a presentation given on the 12th of September 2018

[43] HITRANS, HIE and SYSTRA (2018) Fish'N'Trips, The Logistics issues Faced by the Scottish Aquaculture Industry: https://hitrans.org.uk/Documents/Fish_n_Trips_Report.pdf [accessed 17/02/2020]

Stakeholders have reported that there are also capacity issues on the external flights from the region, with capacity limited by the size of plane that can land at Sumburgh Airport. It is reported that this can be a problem during the peak tourist season, where flights are busier and can compound the issue of the passenger ferry capacity issues. We are currently trying to source data to evidence this further.

ACCESSIBILITY TO PUBLIC TRANSPORT

Equality/Mobility

Background

As set out in the United Nations Convention on the Rights of Persons with Disabilities, the rights of disabled people are protected by legislation and policy in the UK; this convention requires governments to take action to remove barriers and provide disabled people freedom, dignity and equality. Going Further: Scotland's Accessible Travel Framework (2016) outlines the aims of the Scottish Government to ensure that disabled people are fully involved in work, to improve all aspects of travel and to support disabled people's rights by removing barriers and improving access to travel. Scotland's Accessible Travel Framework vision includes ensuring disabled people always obtain accessible travel information; get from where they live to public transport services unobstructed; access services with whatever support and help is necessary; enjoy the journey in comfort and safety; and complete the journey satisfactorily[44].

Ferry Vessels and Terminals

With regard to ferries, a number of vessels and terminals have been deemed "not suitable for wheelchair users or persons with serious mobility problems," such as the Whalsay MV Hendra[45]. Stakeholders highlighted that a number of internal ferry services do not provide for those with impaired mobility. Stakeholders suggested the standard of ferry terminals, including waiting room facilities and signage, are a problem. Symbister Terminal waiting room and toilets are currently unsuitable for wheelchair users and poorly lit. Stakeholder also highlighted that both Laxo and Vidlin Terminals currently offer no segregation between vehicles and pedestrians on the shore ramp[45].

Bus Services

With regard to bus services, stakeholders have reported that accessibility to bus services is an issue, particularly on feeder services. The main line bus services are generally accessible for those with mobility impairment, however, the connecting feeder bus services, particularly in the more rural areas, often are not; as such, they have no way of accessing the mainline services without a car. Information received from Shetland Islands Council confirmed that all eight main line bus services are operated by larger vehicles, which are accessible via either a low floor with an integral ramp or via a lift, if the route is serviced by an accessible coach. The council also stated that all 46 feeder services are serviced by smaller vehicles that are not accessible. Whilst these

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[44] Scottish Government (2016) Going Further, Scotland's Accessible Travel Framework: https://www.transport.gov.scot/media/20113/j448711.pdf [accessed 10/02/2020]
[45] Shetland Islands Council (n.d.) Disability Access Whalsay: https://www.shetland.gov.uk/ferries/Disability/whalsay.asp [accessed 10/02/2020]

services are DDA compliant, they do not provide access for those with mobile impairment.

It has also been reported that there is also a limit to the availability of accessible taxis in rural areas[46]. Of direct relevance to the vision of Scotland's Accessible Travel Framework to remove barriers to provide accessible travel for disabled people, the Shetland Place Standard (SPS) consultation in 2016 identified public transport as the top priority for improvement, with respondents pointing to distance required to travel to bus stops as a key concern[47].

Bus Access

According to Census Travel to Work Data (2011), only 3% of trips in the region are made by bus, which is considerably lower than the national average of 10%. This may be due to the relative attractiveness of the bus services, compared to private car, being poorer than other areas and a perceived lack of network coverage.

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[46] We are currently trying to source evidence on the number of accessible taxis.
[47] Shetland Islands Council, ZetTrans and NHS Scotland (2017) Shetland: Place Standard Final Report:

https://www.shetland.gov.uk/documents/ShetlandPlaceStandardFinalReportMar17.pdf
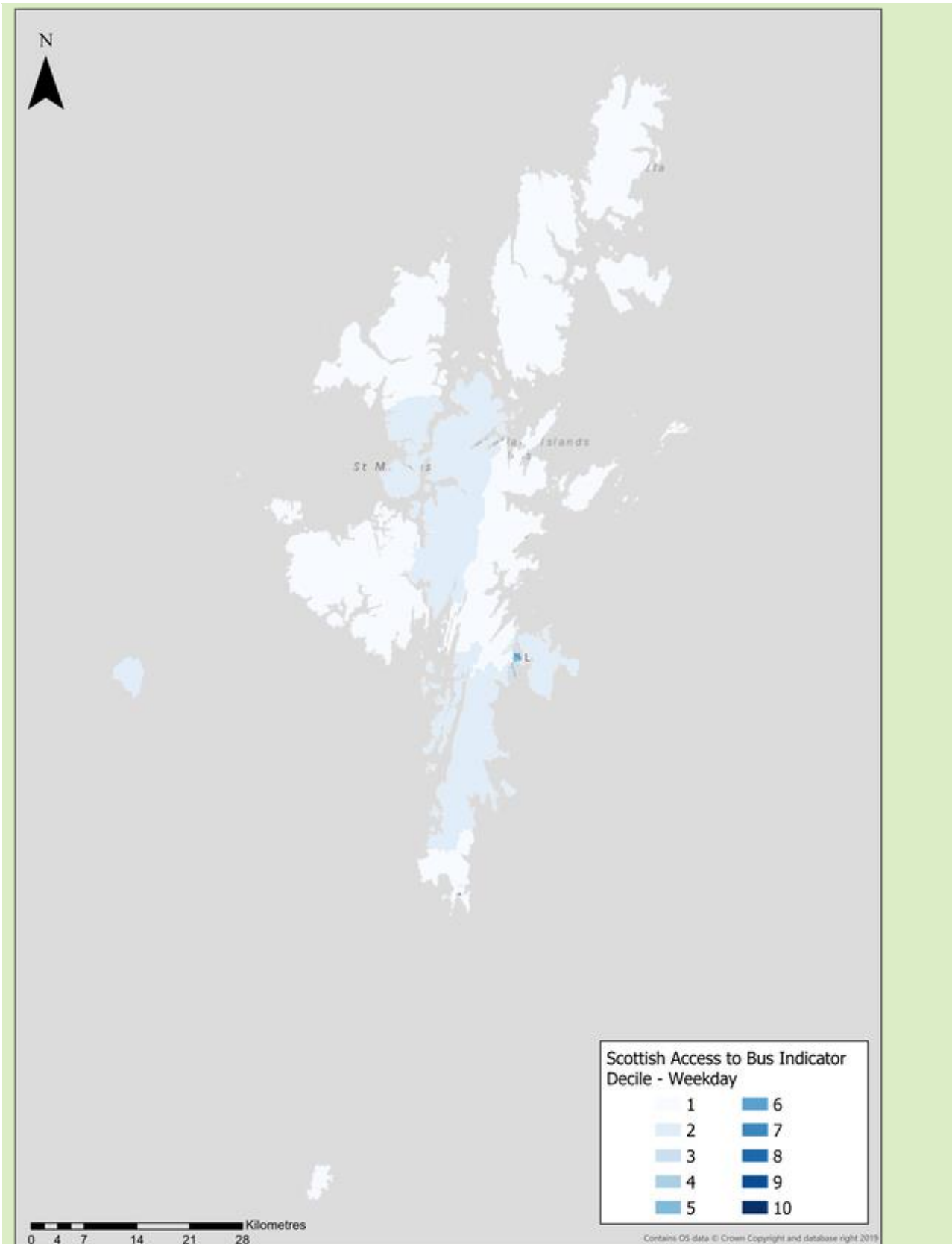
Figure 26: Scottish Access to Bus Indicator Decile – Weekdays (Shetland Islands Region)

(click to image to enlarge figure)

Stakeholders pointed to non-drivers and young people in rural areas experiencing isolation due to limited access to the public transport network. This was considered particularly problematic for low wage rural shift workers and on-site workers who do not have access to a private car and therefore rely on public transport to access employment, services and other opportunities. A number of stakeholders suggested low bus patronage has resulted in fewer bus services in rural areas.

Figure 26 shows the Scottish Access to Bus Indicator Decile for Weekday Services[48]. This indicator gives a score for the accessibility of bus services in each data zone and provides an objective measure of accessibility to public transport by bus in Scotland[49]. The majority of the Shetland Islands has a low indicator decile for weekday bus access, particularly in rural areas and on the Islands, with some locations as low as 1 out of 10. This indicates that there is poor access to public transport services in the Shetland Islands Region.

The bus access (deciles 1-3) experienced in the Shetland Islands Region is comparable with a number of remote rural areas in Scotland including, but not limited to, the Western Isles, the Isle of Islay, Machars (South West Scotland), and Sutherland (Highlands and Islands). This correlation between urbanity and bus access continues with 'other urban areas'[50], such as Inverness, Perth and Stirling, experiencing a higher level of bus access than rural remote areas but lower level of bus access than large urban areas, with the majority of data zones ranging between deciles of 6 and 10 for bus access.

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[48] Transport Scotland (n.d.) Scottish Access to Bus Indicator 2017 - Weekday Score
[49] Scottish Government (2019) Bus Accessibility: https://statistics.gov.scot/slice?dataset=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fbus-accessibility&http%3A%2F%2Fpurl.org%2Flinked-data%2Fsdmx%2F2009%2Fdimension%23refPeriod=http%3A%2F%2Freference.data.gov.uk%2Fid%2Fyear%2F2017 [accessed 18/02/2020]
[50] Scottish Government (2018) Rural Scotland: Key Facts 2018: https://www.gov.scot/publications/rural-scotland-key-facts-2018/

RESILIENCE, RELIABILITY AND INTEGRATION

Road Network

As outlined in ZetTrans' Annual Report (2017), the average percentage of roads in the Shetland Islands are classed as 'red' (Audit Scotland statutory performance indicator - roads which are in poor overall condition[51]) or 'amber' (Audit Scotland statutory performance indicator - roads where there is some deterioration) for the 2014/15 and 2015/16 calendar years was 37.7%[52]. This is similar to the levels of red and amber roads across the Scotland.

The Strategic Roads Network Programme Report (Shetland Islands Council 2019) has highlighted the importance of improving the Shetland Islands' road network resilience to meet current and future demands, particularly in relation to the significant growth of the Aquaculture industry across the region. For example, the report found that the deterioration rate of the B9082, which serves Cullivoe Harbour, is an issue that should be treated with "some urgency". Cullivoe Harbour is ranked 9th in Scotland[53] and 20th in the UK[54] for total fish and shellfish landing. In 2018, a total of 3,405 tonnes of fish and shellfish landed in Cullivoe, worth £6,918,000 (8% of the total seafood landings in the Shetland Islands in 2018). Stakeholders reported that the road has experienced an increase in heavy goods vehicles (HGVs) using it, which has led to deterioration of the carriageway. There are challenges in undertaking maintenance work on this single-track road due to the absence of a road diversion road and the need to keep the road open to transport goods to market. As roads authority, Shetland Islands Council are responsible for the B9082.

Ferry Network

According to ZetTran's annual report (2017), in 2016/17 a total of 8.8% of external ferry sailings were disrupted, 3.2% were cancelled and 5.6% were more than 30 minutes late, and in 2015/16 3.2% were cancelled and 5.1% were delayed[52]. Whilst statistics on passenger vessels mask the cancelations due to weather, as these are classed as a "Relief Event"[55], feedback received from both Serco NorthLink and other stakeholders is that the passenger services are very reliable, with the vessels being sufficiently robust to

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[51] Audit Scotland (2011) Maintaining Scotland's Roads: https://www.audit-scotland.gov.uk/uploads/docs/report/2011/nr_110216_road_maintenance_bw.pdf

[52] ZetTrans (2018) Annual Report 2016 -2017: https://www.zettrans.org.uk/site/assets/files/1108/zettransannualreport2016-17v1_0.pdf

[53] Marine Management Organisation (2018) UK Sea Fisheries Statistics 2017: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/742793/UK_Sea_Fisheries_Statistics_2017.pdf

[54] NAFC Marine Centre, University of Highlands and Islands (2019) Shetland Fisheries Statsitics 2018: https://www.nafc.uhi.ac.uk/t4-media/one-web/nafc/research/document/shetland-fisheries-statistics/statistics/Shetland-Fisheries-Statistics-2018.pdf

[55] Serco NorthLink Ferries (2018) Performance Monitoring Contract Year Six: https://www.northlinkferries.co.uk/wp-content/uploads/2018/09/Performance-Monitoring-CY6.pdf

sail during poor weather conditions but are generally altered (leave earlier/later) to avoid particularly bad weather conditions.

Freight vessels are more susceptible to cancelation during adverse weather than passenger vessels and are therefore subject to disruption more frequently, particularly during the winter period. Owing to the ongoing capacity issues for both freight and passenger services, and the emerging competition for space between the two, it was highlighted through stakeholder engagement that an out-of-operation freight vessel can have a significant impact on the profit margin of the load carried. It was reported that the unique selling point of the Shetland Island's Fishery and Aquaculture industry is the quality of the produce. However, owing to the distance between the region and the market in Aberdeen, this produce is typically one day behind the load landed on the mainland and any further delays can impact the quality of produce, and subsequently erode or eliminate the profit margin.

A University College London Energy Institute study (2017) noted that the expected ferry life expectancy is 25 years, and, as of 2014, the average age of the fleet operated by the Shetland Islands Council was 22 years old[56]. A Shetland Inter Island Transport Study: Financial Review (2016), commissioned by the Shetland Islands Council, reported that, since 2005/06, the capital spend on ferry vessels and terminals for inter islands ferry services has sharply dropped[57]. Figures provided by Shetland Islands Council reported that total vessel-related costs associated with operation gradually increased from £12 million in 2009/10 to almost £17.5 million in 2018/19 and total terminal-related costs increased from almost £600,000 in 2009/10 to £1.2million in 2018/19. Terminal related costs are also forecast to increase further to 2021. The Shetland Inter-Island Transport Study advises "major capital spend" on ferry vessels and terminals in the coming years. Stakeholder findings indicated that ageing ferry fleets and associated increased maintenance requirements can cause reliability issues. Stakeholders also reported that there is a challenge in attracting skilled engineers to work on the inter-island ferries to maintain the existing fleet.

Integration

ZetTrans' Annual Report (2017) identified limited integration of public modes of transport as problematic across the region, with 42% of flight arrivals not connecting with a bus leaving between 30 minutes and 60 minutes after the plane's scheduled arrival time; 55% of flight departures not connecting with a bus arriving between 60 minutes and 90 minutes before the plane's scheduled departure time; and 14% of external ferry arrivals not connecting with a bus to Lerwick within 30 minutes[52.]. Additionally, it was indicated during stakeholder engagement that public transport integration between Unst and Lerwick is poor, with only one integrated service in the morning and evening. Stakeholders pointed to limited timetable integration between buses and ferries as particularly problematic, resulting in long waiting times when relying on public transport.

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[56] University College London (2017) Scottish ferries: Sailing towards greater energy efficient and decarbonisation:
https://strathprints.strath.ac.uk/60291/1/FEC_41_1_2017_RehmatullaN.pdf
[57] PBA (2015) Shetland Inter Islands Transport Study Financial Review:
https://www.shetland.gov.uk/transport/documents/20160212financereviewv30.pdf

AFFORDABILITY

Car Ownership

The majority (70%) of residents on the Shetland Islands have access to a car or van. According to 2011 census data, Shetland Islands has the third highest number of vehicles registered per 1,000 people in Scotland at 903, the Scottish average is 659 per thousand[14.] Across the Shetland Islands Region there is a very low proportion of households without access to a car or van; the highest being on southeast of Unst at 30% or less.

Transport Expenditure

Overall, households within the Shetland Islands Region spend a high proportion of their household budget on transport expenditure. As shown in Figure 27, the majority of households spend between 17 and 18% of their budget on transport[58]. Households within Lerwick spend the lowest proportion (9-10%) of their budgets on transport costs and households in peripheral areas and on the Islands, such as Hillswick and Mid Yell, spend the highest proportion (19-20%).

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[58] Office for National Statistics (2017) Census 2011 Living costs and food survey - financial year ending 2018
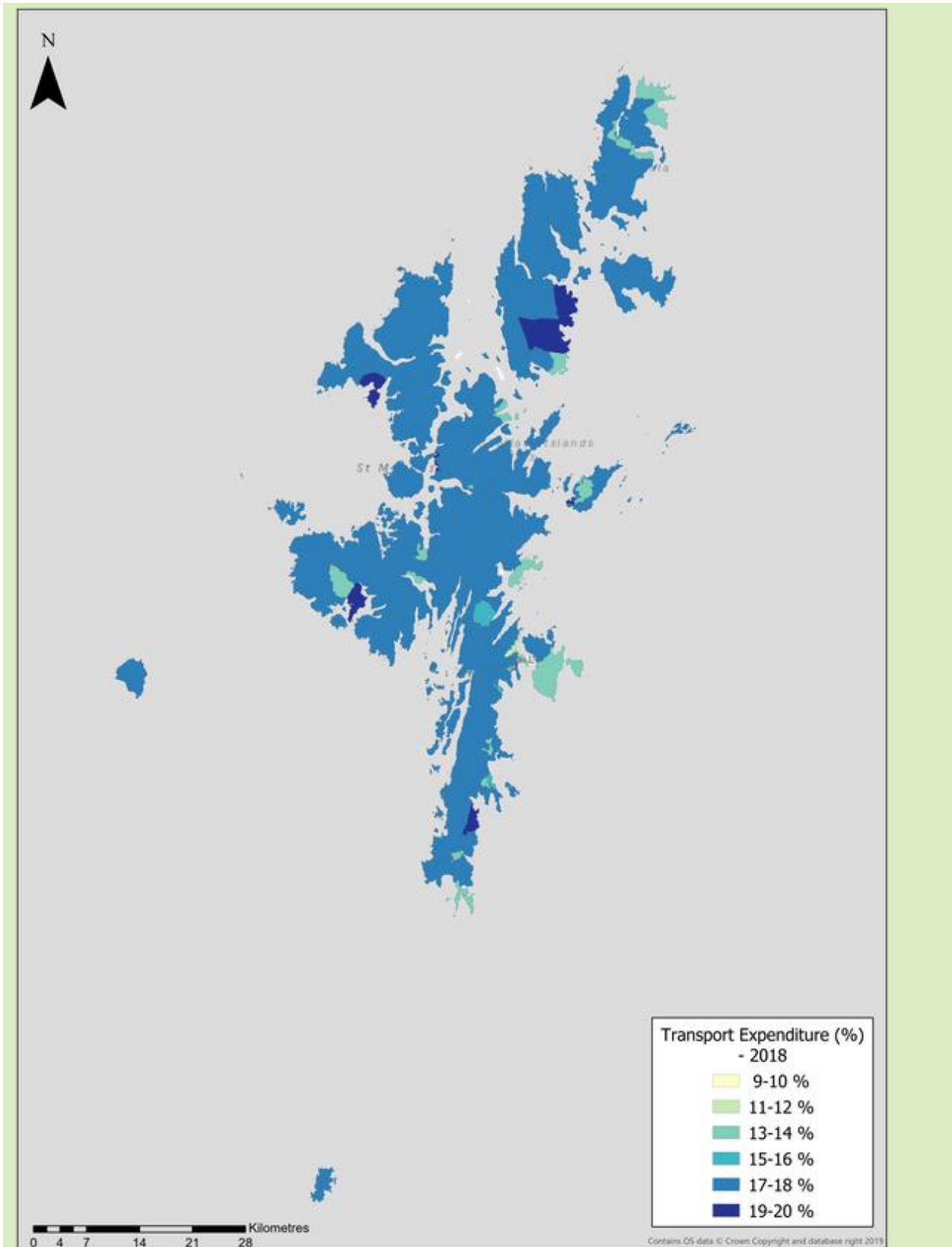
Figure 27: Transport Expenditure (%) relative to Household Budgets (Shetland Islands Region)

(click to image to enlarge figure)

Transport Poverty

Transport Poverty is also an issue in the region with all areas outside the Lerwick North data zones deemed to be in the Medium to High Transport Poverty band, with all of the Islands categorised as high risk (Figure 28). According to Sustrans, Transport Poverty indicates how likely those living in each data zone are to have a lack of affordable transport options to access essential services or work[59]. During the structured interviews and workshops, stakeholders highlighted the pervasive impact transport poverty plays on participation in work and leisure activities, recruiting people and sustaining the population in the region, particularly rural and island communities. The risk of Transport Poverty increases the further away residents live from the Lerwick.

Fuel Poverty

Shetland Islands Citizens Advice Bureau (2013) estimate that 40% of households in Shetland Islands are in fuel poverty to some degree; that is, when the energy needs of a household exceed 10% of the household budget. It was also estimated that 13% of households in Shetland Islands are in 'extreme' fuel poverty; that is where the household is required to spend more than 15% of the household income on fuel use[60]. This is a result of the local climate combined with energy inefficient housing, a restricted fuel market (the cheapest type of fuel, gas, is not available in Shetland) and higher fuel costs. The average price per litre of petrol is £1.30 compared to £1.19 in Glasgow and Edinburgh[61]. Similarly, the average price of diesel is £1.33 in the region, compared to £1.21 in Glasgow and Edinburgh.

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[59] Sustrans (2016) Transport Poverty in Scotland https://www.sustrans.org.uk/our-blog/research/all-themes/all/transport-poverty-in-scotland/
[60] Citizens Advice Bureau (2013) Fuel Bills Survey Report Shetland Islands: https://www.cas.org.uk/system/files/Fuel%20Bills%20Survey%20Report.pdf
[61] https://www.confused.com/on-the-road/petrol-prices - Cheapest price of fuel within a 5km radius of town as of 05/02/2020.
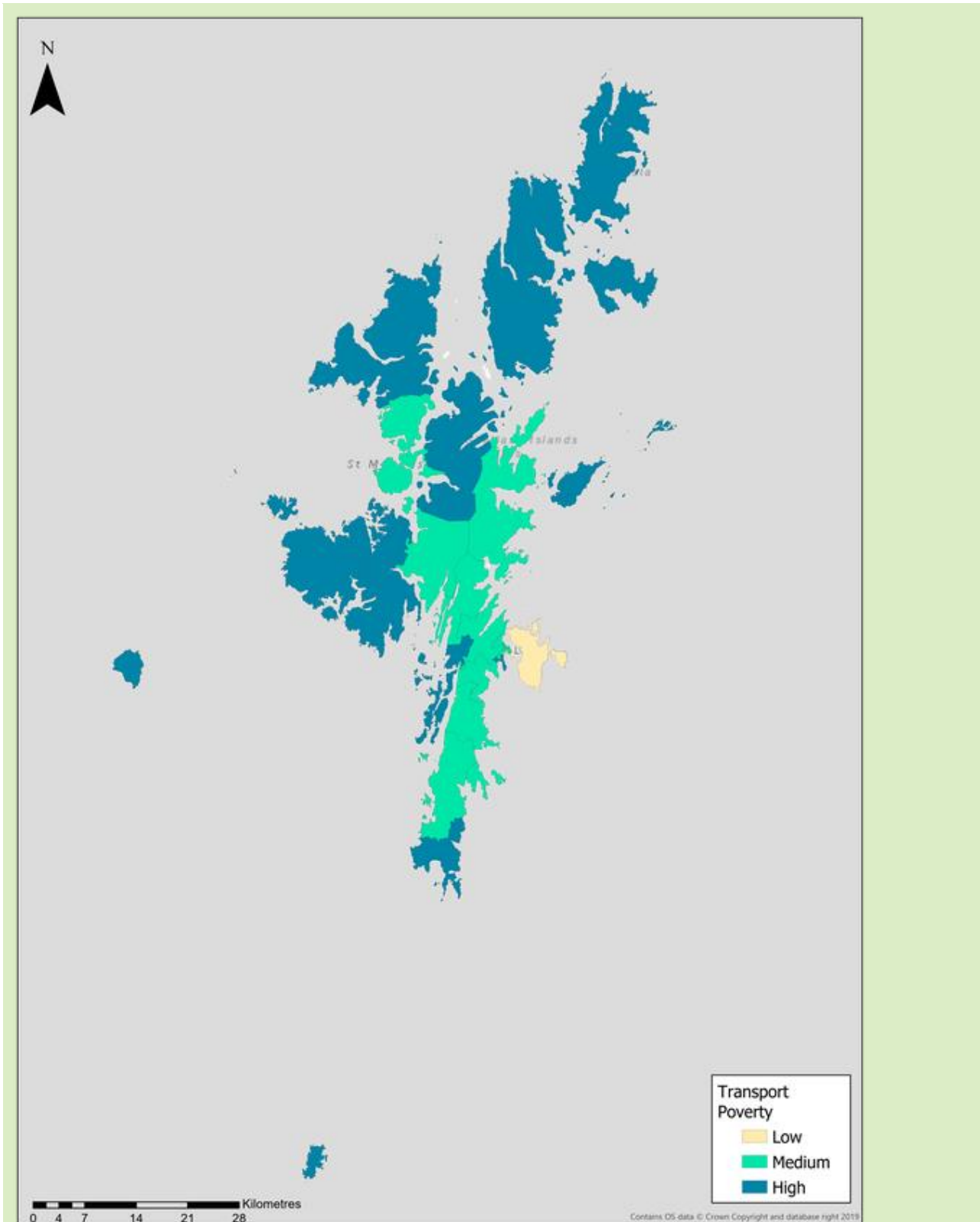
Figure 28: Transport Poverty within the Shetland Islands Region

(click to image to enlarge figure)

Public Transport Cost

Notably, the cost of inter-island commuting in the Shetland Islands Region is high, particularly for residents unable to afford the up-front cost of the multi-journey fares; for example, the multi-journey fare for commuters between Yell and Lerwick is £1,668 per year whereas those unable to pay the monthly fare would spend £2,712 per year for the same journey[62]. During the structured interviews, an interviewee pointed to the issue of low-income residents disproportionately impacted by the high costs of travel across the region as these users are typically unable to afford the upfront monthly ticket costs and therefore not eligible for the discounted rate. For internal air travel, fares range between £69 and £84[63].

For external services, as per Serco NorthLink's online booking system, the cost for a family (including two children under 16 years old) undertaking a return ferry journey between Aberdeen and Lerwick is £286 in winter, increasing to £443 in the summer, including a 4-berth cabin. Including a car increases the cost further to £469 in winter and £689 in summer[64]. For external air travel, the fares for a family of four (including two children under 12 years old) to travel from Sumburgh to Edinburgh with no discount is £1213.76 if travelling in the month booked[65], or slightly cheaper if booked in advanced at £1080.16, whereas islanders registered for the Air Discount Scheme (ADS) will pay notably less[66].

A ZetTrans' Annual Report (2017) highlighted that the Scottish Government spent £2,908,395 to support the ADS in the Shetland Islands during 2016/17 and the total subsidy cost for 2016/17 on the Northern Isles Ferry Contract was £34,789,940[52]. A number of stakeholders indicated the high travel costs across car, ferry and flight modes as problematic for residents and tourists alike travelling within the Shetland Islands Region and between the region and mainland Scotland, with suggestions that the services covered by the concessionary scheme is insufficient, resulting in external travel being an option exclusive to the affluent population only.

During the Problems and Opportunities workshop, stakeholders raised their concerns surrounding the impact increasing public transport operating costs will have on the affordability of journeys for the user, especially those living on the Islands and in rural areas. The Shetland Islands Council Budget Book (2019) points to a disparity between the high transport operating costs in the region and the ring-fenced funding available to support the operating costs for ferry and bus services in the region[67].

CONNECTIVITY

Digital Connectivity

The Shetland Islands Region has restricted digital connectivity, with 3G coverage for all networks only supported in 37% of the region and 4G coverage for all networks in 36%

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[62] Equal Shetland (n.d.) Transport Fuel poverty, https://www.shetland.gov.uk/equal-shetland/documents/Transportandfuelpoverty.pdf

[63] ZetTrans, Annual Report 2016 -2017, Page 19, https://www.zettrans.org.uk/site/assets/files/1108/zettransannualreport2016-17v1_0.pdf

[64] Prices calculated on 05/02/2020 for a return journey in February 2020 and July 2020. https://online.northlinkferries.co.uk/Booking/default_ajax.aspx

of the region[68]. Wi-Fi is supported in 64% of the region[69]. As shown in Figure 29, the average download speed in the region is among the slowest in Scotland, although the speed is comparable with the local authority areas in the Highlands and Islands Region.
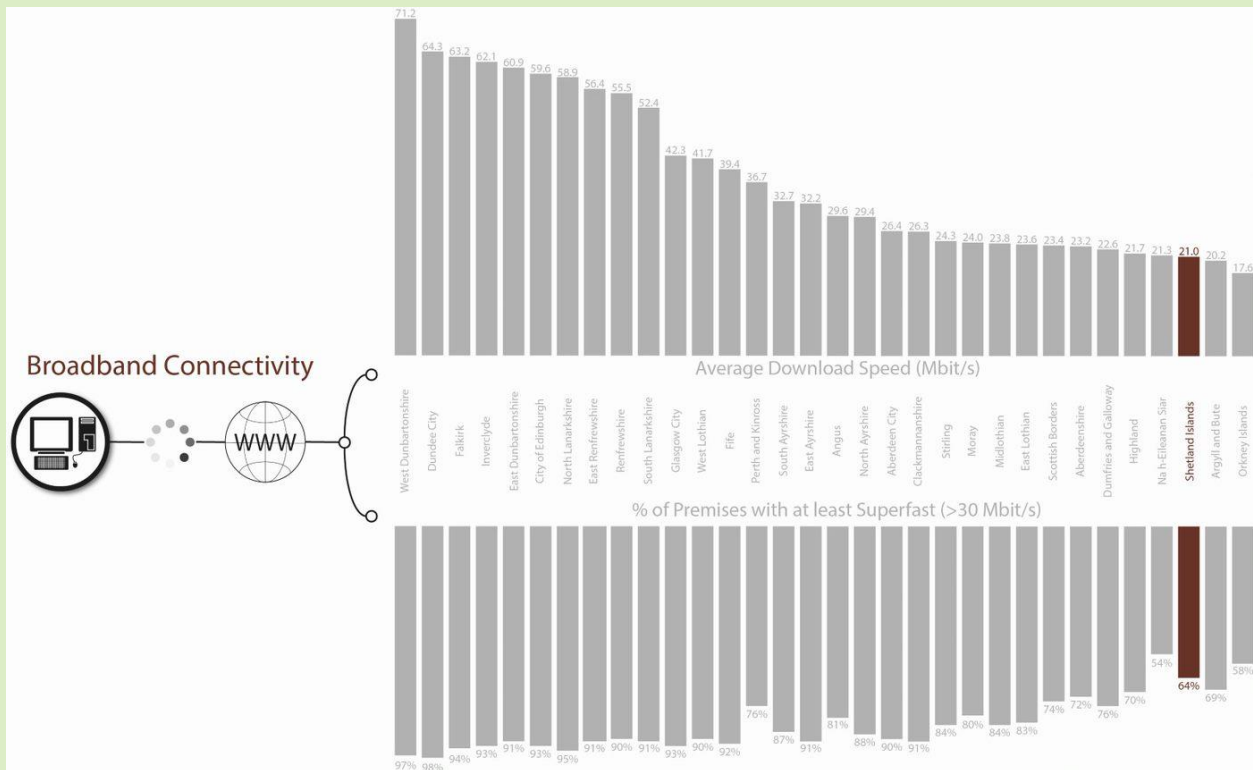
Figure 29: Average Broadband Connectivity Speed and Percentage of Premises with Access to Superfast Broadband

The fragility and absence of the digital connectivity in the Shetland Islands Region was identified as a prevalent issue by a number of stakeholders at the Problems and Opportunities workshop. The lack of digital connectivity was also highlighted as exacerbating the sense of isolation felt amongst communities, particularly on the Islands and in rural areas, in addition to disrupting education as pupils cannot complete their school assignments due to the poor, or complete lack of, connection. Furthermore, stakeholders also said the fragility of the digital network results in people travelling across the region to get a connection, placing additional demand on the region's internal transport systems. Digital connectivity is also seen as one of the reasons for depopulation on the Islands in particular.

Internal ferry timetable constraints during the winter period have been identified as a problem in relation to inter-island connectivity. According to a Ferry Connectivity report prepared by Peter Brett Associates LLP, there are 33 fewer internal ferry services during

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[65] Prices Calculated on 06/02/2020 for a return journey on the 28/29th of February 2020 and 24/25th July. https://www.loganair.co.uk/

[66] The Air Discount Scheme is only available to those who live on the islands.

[67] Shetland Islands Council, The Council Budget Book 2019/20: http://www.shetland.gov.uk/about_finances/documents/2019-20BudgetBook.docx

[68] Ofcom Connected Nations, via data.gov.uk (2018), Mobile local authority area

[69] Ofcom Connected Nations, via data.gov.uk (2017), Fixed local authority ,

the winter months than the summer months[70], such as services to/from Fair Isle reducing from three sailings a week in summer to only one in winter. According to a ZetTrans Annual Report (2017), during 2016/17 a total of 34.4% of internal flights were cancelled: 22.2% for weather-related reasons, 0.4% for technical reasons and 11.8% did not fly because there were no passengers booked. During the same period, a total of 2.7% of external flights were cancelled: 1.7% for weather-related reasons and 1.0% for technical or operational reasons[52]. This is a particular problem for islanders as there are little alterative transport options, with a ferry being the only alternative in some instances, and in others there are no alternatives.

Emissions

Carbon dioxide (CO_2) emissions per capita place the Shetland Islands in one of the highest ranges for Scotland, sitting in the 10 to 12.5 tonnes per capita band - the second highest band. The energy consumption in 2013/14 demonstrated that ferries make up 47% of the Shetland Islands Council's energy consumption, with tugs making up 9%; notably, this carbon footprint is exclusive to the council operation and does not include those of privately-operated transport, such as Loganair or Serco NorthLink. According to a ZetTrans report (2017), in 2016/17 the internal ferry service consumed 4,352,228 litres of fuel and 47,324 litres of fuel was used to operate the internal air service. A number of stakeholder interviewees pointed to the challenge of Shetland Islands' CO_2 emissions being inextricably linked with the region's geographic remoteness and coupled with the dominate industries the region supports, namely aquaculture, fishing and tourism.

DEPOPULATION

The Shetland Islands Region experiences an ongoing challenge to retain its working population. Between 2011 and 2018, the percentage of the Shetland Islands population in those aged 65 and over increased by 3.5% and those aged between 16 and 64 reduced by 2.5%. As such, given the population figures are relatively stable at 22,990, this indicates that the population is aging and there is a need to attract more working age people to the region.

The Shetland Islands Region contributed 0.1% of Scotland's total benefit claimants and made up 0.4% of the country's claimant population. Between 2014 and 2018, the number of claimants in the Shetland Islands Region increased by 18.7%; this was 25.1% higher than the national average. This higher proportion of people on the Shetland Islands claiming benefits are therefore likely to have limited income to spend on transport. This increases the risk of transport poverty, as well as limiting their ability to access key services and employment opportunities.

According to a Scottish Government report (2013) on underemployment in Scotland, 13.6% of Shetland Islands' workers are underemployed[11]; the Shetland Islands have the joint highest underemployment rate in Scotland, with Dundee City. The transport provision within the region and between the region and mainland Scotland could be a contributory factor in the level of underemployment as the lack of transport services restricts the labour market.

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[70] PBA, Ferry Service Provision:
https://www.shetland.gov.uk/transport/documents/FerryConnectivity-v2.10.pdf

It was highlighted at various stakeholder engagement events that there is currently a challenge in attracting skilled engineers to work on the inter-island ferries to maintain the existing fleet. In addition to these issues, the majority of the of the problems mentioned within this section are likely to be contributing to the depopulation within the region.

Online Survey: Reported Problems in the Shetland Islands Region

As part of the wide-ranging engagement exercise undertaken for STPR2, an online survey was promoted to collect the views from the public and organisations across Scotland on the transport issues and challenges that impact their day to day journeys. As part of the survey, respondents were asked to rank their top three priority problems.

Top ranking problems for the Shetland region included:

- **Island - Connectivity to the Scottish mainland**, which four respondents ranked as their top priority and four ranked within their top three;
- **Cycling - Availability of safe cycling infrastructure**, which three respondents ranked as their top priority and six ranked within their top three; an
- **Wider Issues,** Digital connectivity which three respondents ranked as their top priority and three ranked within their top three.

Other commonly raised areas of concern related to availability of safe walking/wheeling infrastructure, integration between modes, and availability of funding for new transport interventions.

The findings from the survey have been used to inform and validate the identification of the transport related problems described in section 3.2.1.

3.2.2. Opportunities

This section provides a summary of key opportunity themes identified for the Shetland Islands Region.

TOURISM
Tourism is a growing industry in the Shetland Islands Region; according to Shetland's Tourism Strategy (2018 – 2023)[71]. Between 2013 and 2017 the region enjoyed a 13% increase in tourist numbers. With the Shetland Islands welcoming around 90,000 cruise passengers[71] in 2018, expanding the geographic reach of cruise liner passenger destinations beyond Lerwick, Scalloway and Fair Isle could enable the benefits of tourism to spread to other parts of the region. Visitors tend to visit the Shetland Islands during the summer months. Access to the Islands within peak season can also be restricted by capacity on external transport services. The opportunity exists to grow this industry within the region, which would provide a degree of resilience to the region's economy, which is currently dominated by the Aquaculture, Fishing and Oil and Gas industries.

RENEWABLE ENERGY
Whilst the Shetland Islands Region is the smallest region in this study, both by land mass and population, it has a significant carbon footprint. The area relies on travel by private car, ferries and air, which has a large carbon footprint. The area also has low public transport usage and active travel usage for commuting trips. Harnessing the unique location of the region to produce renewable energy and developing a more sustainable transport fleet presents a significant opportunity to reduce the carbon footprint of the area. Work has been undertaken in Orkney on the development of a sustainable energy plan and the Shetland Islands are in a similar geographical and technical position where they can harness renewables but also develop the transferable skills and facilities from the Oil and Gas sector.   Highland and Islands Enterprise are also enthusiastic about the opportunities for growth in the Renewable sector in the Highlands and Islands (which includes Shetland) stating that "With superb natural resources, modern fabrication and port facilities, and transferable skills from the oil and gas industry, the Highlands and Islands is bidding to be a world capital in renewable energy. The region's strong legacy in the oil and gas industry, and abundance of renewable energy resources, mean it is ideally placed to be at the forefront of the energy industry."[72]   Renewable energy opportunities include futureproofing the transport network by exploring new technology and alternative energy use, reducing the region's heavy reliance on traditional fuels.

[71] Shetland Tourism Association, Shetland Islands Council, Visit Scotland, Highlands and Islands
Enterprise, Lerwick Port Authority, Shetland Arts Development Agency and Shetland Amenity Trust, Shetland Tourism Strategy 2018 – 2023: https://www.shetland.gov.uk/economic_development/documents/TourismStrategyFINAL17_10_18b.pdf

[72] HIE (2019) Investment in Energy: https://www.hie.co.uk/our-region/our-growth-sectors/energy/investment-in-energy/

ACTIVE TRAVEL

Currently, less than 30% of pupils travel to school actively and less than 10% travel to work actively within the Shetland Islands Region. In 2017, the proportion of pupils that actively travelled to school in the Shetland Islands Council area was low relative to other local authorities across Scotland, with the exception of Comhairle nan Eilean Siar. Development of the active travel network is a key opportunity for both leisure and commuter trips.

Stakeholders suggested there was an appetite to enhance the propensity to actively travel in the Shetland Islands Region, with suggestions that improving the real and perceived safety of the network and offering access to supportive infrastructure (such as bike shelters and electric bikes) has the potential to play a significant role in uptake of active travel. Active travel could be utilised as part of a sustainable journey, connecting people to public transport services and reducing the reliance on the private car. In terms of tourism, active travel hubs could be utilised to allow tourists to hire bikes and utilise active travel whilst visiting the region. This could be particularly fruitful for those visiting the Islands from cruise ships.

ECONOMIC DEVELOPMENT

Stakeholders identified the Fishery and Aquaculture industries as areas for economic development within the region. Figures provided from the Stewart Building Group show that exports of salmon grew by 20% between 2015 and 2018 and whitefish, mussel and shellfish grew by 42%, 24% and 26%, respectively, over the same period. According to forecasts provided, the aforementioned industries are forecast to continue to grow between 5% and 48% from 2018 to 2021[42]. Local industry representatives reported that the Fishery and Aquaculture industry are reluctant to invest in expansion as they do not have the confidence that there is sufficient capacity to export their product from the region, particularly during the livestock season (September to October) when freight services are further constrained. However, there has been recent investment to double the size of the fish processing plants at both Lerwick and Scalloway, which has been undertaken at risk.

The digital connectivity of the region was highlighted as a problem; however, this also provides significant opportunities in how island communities in particular access key services, employment and education, potentially reducing the need to travel unsustainably in many situations.

3.2.3. Future Conditions

The problems and opportunities outlined in section 3.2.1. are focused on current issues drawing on the findings from data analysis and engagement. Given the timescales for the delivery of STPR2, there is a need for 'horizon scanning' to better understand how potential future uncertainties could impact the operation and management of the strategic transport network, a knowledge of which will support the identification of interventions that are resilient in the face of potential alternative futures. This process of scenario planning will consider major disrupters and uncertainties (e.g. alternative working practices, new transport technologies, future transport policy developments) and is accordingly being carried out at a national level for the STPR2 programme as a whole. However, to support

this, consideration has also been given to future network conditions and uncertainties at a more localised level.

3.3.   Problems and Opportunities Summary

Chapter 3 discussed problems and opportunities highlighted through data analysis, identified by stakeholder engagement and informed by the policy review. The themes and Transport Planning Objectives (TPOs) which any intervention should look to address are derived from these findings in addition to the key points arsing in the socioeconomic, geographic, transport and environmental context of the Shetland Islands Region, as outlined in Section 2.

The key problems to note from this review are:

- Ferry and Air Capacity Constraints: given the unique geography of the region, the Shetland Islands are reliant on ferry and air connections to provide access to key services and to provide essential supplies to the islands. Capacity issues on the internal ferry service generally occur on the commuting services and can result in some vehicles not being able to access the service. The external services experience strain at certain times of the year, with capacity issues identified on the passenger services during the peak tourist season, making it difficult for islanders to travel to the mainland, particularly for an unplanned trip. VisitScotland have stated that the tourism industry is constrained by the capacity of the external services during the peak season. There are similar capacity issues on the freight services, particularly during livestock season (September to October), which is reported by stakeholders to be constraining the economic development in the region.
- Accessibility to Public Transport: levels of bus access within the region are low, however there are comparable to other remote rural areas, including the Western Isles and Sutherland. Levels of access to public transport was reported to be a problem for those with mobility issues and data provided by Shetland Island Council indicates this to be the case, with all 46 feeder bus services operated using a mini bus.
- Resilience, Reliability and Integration: the resilience and reliability issues are evident on both the internal and external ferry services. The internal services are disrupted by ongoing maintenance and are less resilient owing to an ageing ferry fleet. Both the internal and external ferry services are impacted by adverse weather. Flights are also impacted by adverse weather, leading to delays and cancellations. There is a lack of integration of sustainable modes of travel, with ferry and air services not coordinating with the bus timetable, leading to a reliance on the private car.
- Affordability and Public Transport Costs: the region generally falls within the medium and high-risk bands of for transport poverty, with the risk of transport poverty increasing the further away residents live from Lerwick. There is a variance in terms of the levels of expenditure spent on transport, with the majority of households spending 17% and 18% on transport, and households within Lerwick spending between 9% and 10% of their household budget on transport. Many residents within the region suffer from fuel poverty and this is exacerbated by the higher than average cost of fuel within the region. The cost of external travel from the region is also reported to be high, with ferry services to the mainland costing around £450 for a family of four and a car, and flights costing around £1,000.

- Connectivity: digital connectivity is poor within the region. The Shetland Islands Council area has the third lowest level of broadband coverage relative to other local authorities and has the third slowest average download speed (21 Mbit/s); this fragility can disrupt education and burden the transport network with additional trips due to residents travelling across the region to ascertain connection. The winter ferry timetable hampers physical connectivity for residents undertaking internal trips.
- Emissions: the Shetland Islands have one of the highest levels of CO_2 emissions in Scotland, with 47% of the Shetland Islands Council's energy consumption stemming from operating the ferries.
- Depopulation: as a result of the issues outlined above, the region is experiencing an ongoing challenge to retain and attract working age people and in the past two decades the region has simultaneously experienced an increase in the proportion of the population being aged between 65 and 74, and a decrease in its working age population.

The key opportunities to note from this review are:

- Tourism is viewed as a key area for growth within the region, building on the recent growth experience between 2013 and 2017. There are also opportunities to grow the aquaculture and fishery industries.
- The region is well-positioned to take advantage of renewable energy usage in order to reduce its carbon footprint. There are opportunities to develop the renewable energy industry, whilst also harnessing renewable energy to decarbonise the transport fleet; and
- With a small proportion of trips currently undertaken by active travel, there are opportunities to develop the active travel network to increase the number of trips undertaken by walking or cycling. Active travel is seen in the region as being part of a sustainable journey and could also be implemented to allow tourists to travel around the islands.

4. Transport Planning Objectives

4.1. National and Regional Objectives

Transport Planning Objectives (TPOs) are of central importance to the STAG process. In line with STAG, TPOs should align with the outcomes sought by the study, be based on a comprehensive and evidenced understanding of problems and opportunities and lend themselves to inform a clear and transparent appraisal of the performance of transport options. The TPOs are a key element of the appraisal process from initial option identification and sifting through to Preliminary and Detailed appraisal and subsequent monitoring/evaluation.

For STPR2, TPOs have been developed to sit at both the national and regional levels. At a national level, an overarching set of STPR2 programme-level TPOs, supported by national sub-objectives, have been established which are closely aligned with the four priorities, twelve outcomes and 24 policies contained within NTS2. The national STPR2 objectives are presented in Table 1, overleaf.

A series of regional transport planning objectives sit within the overall direction of the STPR2 objectives but with a particular focus on the specific evidence-based problems and opportunities in the Shetland Islands Region. The draft emerging regional focused sub-objectives are also presented in Table 1, overleaf.

Table 1: National TPOs and the Draft Regional Sub-Objectives[73]

NATIONAL STPR2 OBJECTIVES	REGIONAL TRANSPORT PLANNING OBJECTIVES
A sustainable strategic transport system that contributes significantly to the Scottish Government's net zero emissions target.	▪ *Reduce the consumption of fossil fuels, capitalising on the renewables potential of the Shetland Islands economy, through a shift to more sustainable modes of travel* ▪ *Increase the share of active travel for shorter, everyday journeys.* ▪ *Increase the share of public transport, and opportunities for car sharing, to provide viable alternatives to single occupancy car use, with a particular focus on travel to Lerwick and for visitors to the islands* ▪ *Reduce carbon emissions generated by the strategic transport systems, with a focus on utilising renewable energy to provide inter island connectivity and connectivity to the mainland.*
An inclusive strategic transport system that improves the affordability and accessibility of public transport.	▪ *Increase public transport share by connecting sustainable modes of transport to facilitate integrated journeys, with a particular focus at key transport interchanges, including ferry terminals.* ▪ *Improve mobility and inclusion for residents, recognising the specific needs for disadvantaged and vulnerable users, sustainably increasing the population.* ▪ *Reduce transport poverty by increasing travel choice for the islands and rural communities, improving the attractiveness of the Shetland Islands as a place to live, work and visit* ▪ *Reduce the reliance on private car for access to key centres for healthcare, employment and education on both the Shetland Islands and the Scottish mainland.*
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.	▪ *Increase the share of active travel to improve health and well-being.* ▪ *Improve transport connections to reduce remoteness and promote an inclusive society* ▪ *Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of Local Development Plans and emerging NPF4.*
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.	▪ *Increase competitive transport access to key domestic and international markets, by reducing costs and improving journey time and reliability for business and commercial transport* ▪ *Increase resilience of accesses to key domestic and international markets to encourage people to live, study, visit and invest in the Shetland Isles.*

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[73] Objectives are being refined and are not final

	▪ *Make better use of existing transport infrastructure through the adoption of beneficial transport innovations.* ▪ *Increase the mode share of freight by sustainable modes.*
A reliable and resilient strategic transport system that is safe and secure for users.	▪ *Improve the resilience of the region's strategic ferry and aviation infrastructure to reduce the impact of disruption.* ▪ *Reduce transport related casualties in line with reduction targets* ▪ *Improve perceived and actual security of the transport network*

Table 2: Mapping of Problem and Opportunity Themes to Transport Planning Objectives

NATIONAL OBJECITVE / OUTCOME	REGIONAL SUB-OBJECTIVE / OUTCOME	PROBLEM THEME							OPPORTUNITY THEME			
		Depopulation	Ferry and Air Capacity Constraints	Accessibility to Public Transport	Resilience, Reliability and Integration	Affordability	Connectivity	Emissions	Tourism	Renewable Energy	Active Travel	Economic Development
A sustainable strategic transport system that contributes significantly to the Scottish Government's net zero emissions target	Reduce the consumption of fossil fuels, capitalising on the renewables potential of the Shetland Islands economy, through a shift to more sustainable modes of travel							X		X		X
	Increase the share of active travel for shorter, everyday journeys			X		X		X			X	
	Increase the share of public transport, and opportunities for car sharing, to provide viable alternatives to single occupancy car use, with a particular focus on travel to Lerwick and for visitors to the islands	X		X		X	X	X				
	Reduce carbon emissions generated by the strategic transport systems, with a focus on utilising green energy to provide interisland connectivity and connectivity to the mainland						X	X		X		
An inclusive strategic transport system that improves the affordability and accessibility of public transport	Increase public transport share by connecting sustainable modes of transport to facilitate integrated journeys, with a particular focus at key transport interchanges, including ferry terminals	X		X	X	X	X	X		X		
	Improve mobility and inclusion for residents, recognising the specific needs for disadvantaged and vulnerable users, sustainably increasing the population	X		X		X	X					X
	Reduce transport poverty by increasing travel choice for the islands and rural communities, improving the attractiveness of the Shetland Islands as a place to live, work and visit	X		X		X			X			X
	Reduce the reliance on private car for access to key centres for healthcare, employment and education on both the Shetland Islands and the Scottish mainland.	X		X		X	X	X				X
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing	Increase the ushare of active travel to improve health and well-being			X							X	
	Improve transport connections to reduce remoteness and promote an inclusive society	X					X					
	Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of Local Development Plans and emerging NPF4.											
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland	Increase competitive transport access to key domestic and international markets, by reducing costs and improving journey time and reliability for business and commercial transport		X	X	X	X	X					X
	Increase resilience of accesses to key domestic and international markets to encourage people to live, study, visit and invest in the Shetland Isles.	X			X		X		X			X
	Make better use of existing transport infrastructure through the adoption of beneficial transport innovations.				X		X	X			X	X
	Increase the mode share of freight by sustainable modes.							X		X		X
A reliable and resilient strategic transport system that is safe and secure for users	Improve the resilience of the region's strategic ferry and aviation infrastructure to reduce the impact of disruption	X			X	X						X
	Reduce transport related casualties in line with reduction targets				X							
	Improve perceived and actual security of the transport network			X	X							

5. Approach to Option Generation and Sifting

5.1. Strategic Options

As set out earlier, STPR2 specifically focusses on Scotland's key strategic transport assets.   In the context of STPR2, a strategic transport project is defined as any transport project that materially contributes to Scottish Government/Transport Scotland policies and strategies.

Specifically, this will include:

- any transport project that plays a significant part in supporting the four NTS2 priorities and related outcomes;
- projects or groups of projects related to transport networks owned, operated and funded directly by Transport Scotland;
- passenger and freight access to ports and airports of national significance, and
- the inter-urban bus and active travel networks and principal corridors within urban areas.

Within the overall definition above options considered within the STPR2 may include:

- Demand management measures, including use of technology and innovation, behavioural change and regulatory control;
- Strategic maintenance and safety measures;
- Strategic measures to increase travel by active travel modes;
- Public transport improvements, including interchanges, road space allocation, technology and ticketing;
- Links to/from areas of economic activity of national significance;
- Appropriate policy and financial instruments (that are within the responsibility of Scottish Government);
- Targeted infrastructure improvements on the transport networks owned, operated and funded directly by Transport Scotland;
- Changes to the operation of air and ferry terminals and services;
- Infrastructure measures at ports and harbours of national significance; and
- Improved access to airports of national significance.

A strategic transport project will not include:

- Changes in vehicle regulation and taxation;
- Planning led initiatives (e.g. changes to the statutory planning process);
- Changes to the governance framework within which transport delivery and operation takes place;
- Concessionary fares; or
- Routine and cyclic maintenance measures.

5.2. Approach

The approach to the generation of interventions for STPR2, including the interventions identified at the regional level for the Shetland Islands, is summarised in Figure 30 below.

Option Generation and Sifting

	National	**Regional**
Generate Long List of Options	• Review of Extant Projects from STPR1 • Review of Policy and Previous Study Reports • National Thematic Workshops • National Business Breakfasts • National Online Survey • Input by Consultant Team, Transport Scotland and National Advisory Groups	• Review of Options from Regional Plans, Studies and City/Growth Deals • Regional Option Workshops • Structured 1-2-1 Interviews • Online Survey (Regional feedback) • 'Mini STPR2' Schools Engagement • Input by Consultant Team, Transport Scotland and Regional Transport Working Groups
Clean, Consolidate and Package Options Long List	• Options categorised by mode/type • Options categorised according to the Sustainable Investment Hierarchy • Remove duplicates	• Options categorised by mode • Options categorised according to the Sustainable Investment Hierarchy • Remove duplicates • Sift 'local non-strategic' options*

Options sifted using STPR2 Appraisal Framework

Options assessed using Appraisal Framework, based on the following criteria:
- **STPR2 Objectives:** Does the intervention broadly align with the STPR2 Objectives?
- **Deliverability:** Is the intervention likely to be feasible and deliverable within the intended timescale?
- **Sustainable Investment Hierarchy:** Can the intervention be sifted on the basis that there are other options which would address the same problem / opportunity, and better align with the Sustainable Investment Hierarchy?
- **Strategic Option:** Is the intervention strategic (i.e. materially contributes to national policies and strategies)?

Figure 30: Approach to Option Generation and Sifting[74]

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* Local options which could become strategic as part of a national programme of interventions, or could be packaged to become strategic would be taken forward. Other, local options specific to an issue in a region would be sifted from STPR2 and the evidence shared with the respective regional/local transport organisation for further consideration.

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As noted, a long list of interventions for consideration through STPR2 have been generated from a range of national and regional option generation exercises. At the Shetland Islands level, work has included intervention workshops held in Lerwick in November 2019 and February 2020, the findings from the online public survey – which generated 3025 responses nationally of which 25 responses were generated from the Shetland Islands Region – as well as a review of interventions identified from recent previous studies completed in the region.

Figure 31: Investment Hierarchy

The process of option generation for STPR2 is being informed and structured around the sustainable investment hierarchy which was outlined within the draft NTS2, shown in Figure 31.

5.3. Next Steps

Going forward, the long list of options will be developed and sifted in line with the approach set out in Section 5.1, with the resulting short list of interventions appraised in line with the STAG-based Appraisal Framework developed for STPR2.
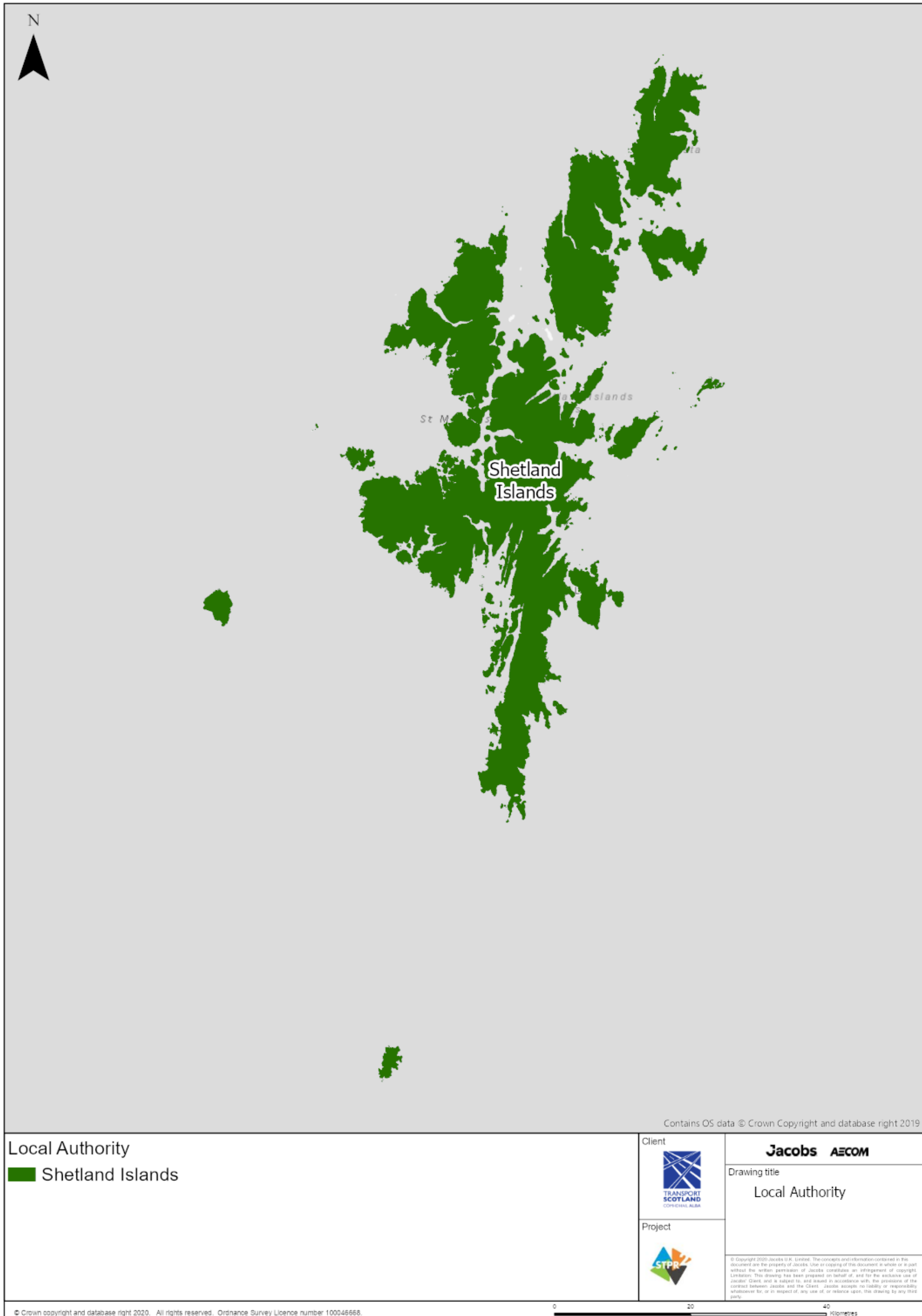
Commenting on this Report

As part of our ongoing engagement, comments on this draft Case for Change Report can be submitted using a comments form that can be accessed here. The closing date for comments is midnight on Friday 8 April 2020.

APPENDICES

Appendix A: Figures

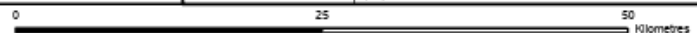**Figure A- 1 Shetland Islands Region Study Area** (Click image to go back to main report)

N

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Urban Rural 2016 6-Fold Classification

⬜ 4, Remote Small Town

🟩 6, Remote Rural

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		SIMD
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0   25   50
Kilometres

Figure A- 2 Urban Rural 6-fold Classification, 2016 (Shetland Islands) (Click image to go back to main report)

N

Hunsta

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ck

105 PT Access TO Employment Centres -
Tue 06.00-10.00

- up to 15 minutes
- up to 30 minutes
- up to 45 minutes
- up to 60 minutes
- up to 75 minutes
- up to 90 minutes
- up to 105 minutes
- up to 120 minutes

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105 PT Access TO
Employment Centres

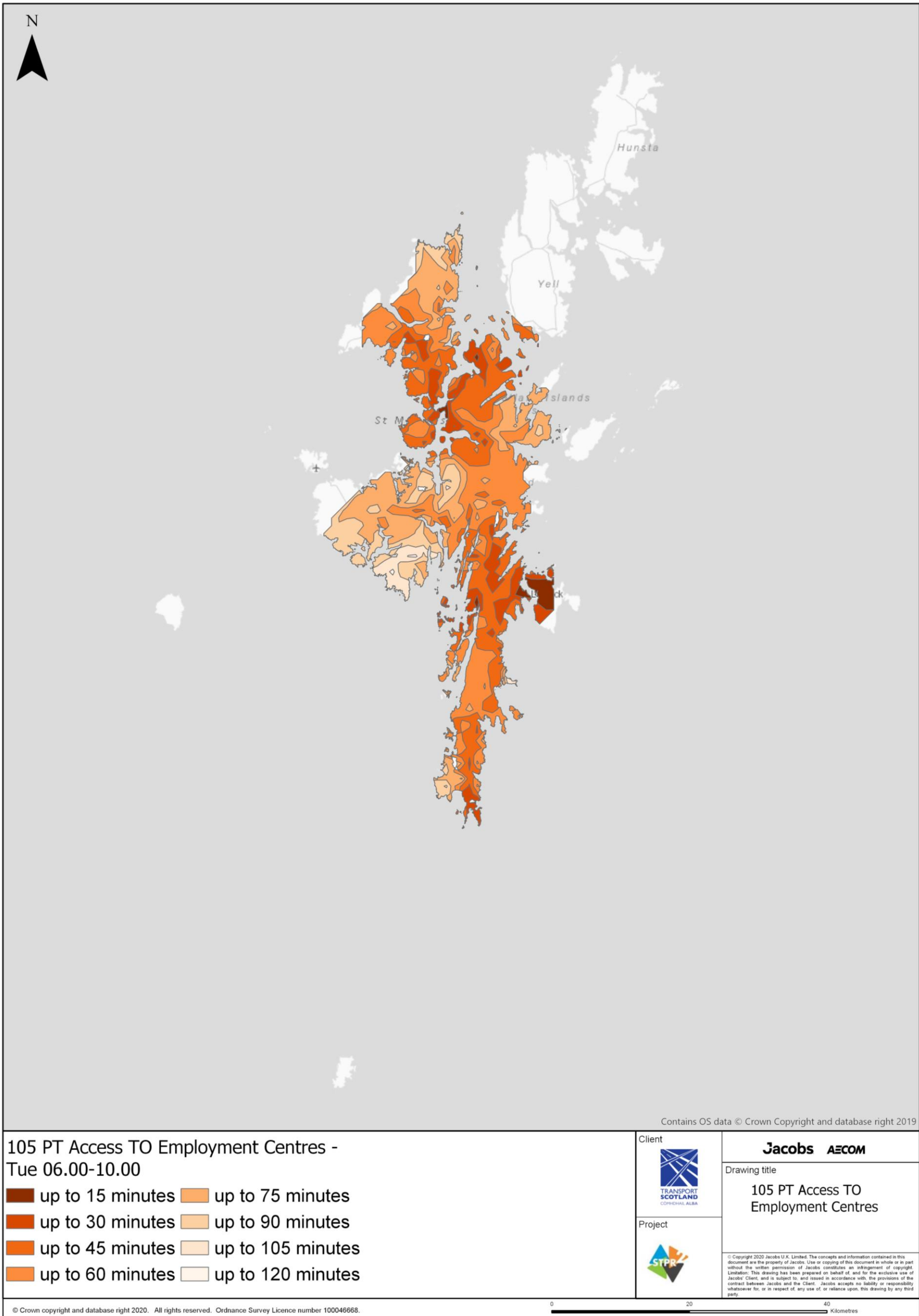Project

0   20   40
Kilometres

Figure A - 1 Access to Employment by Public Transport (Click image to go back to main report)
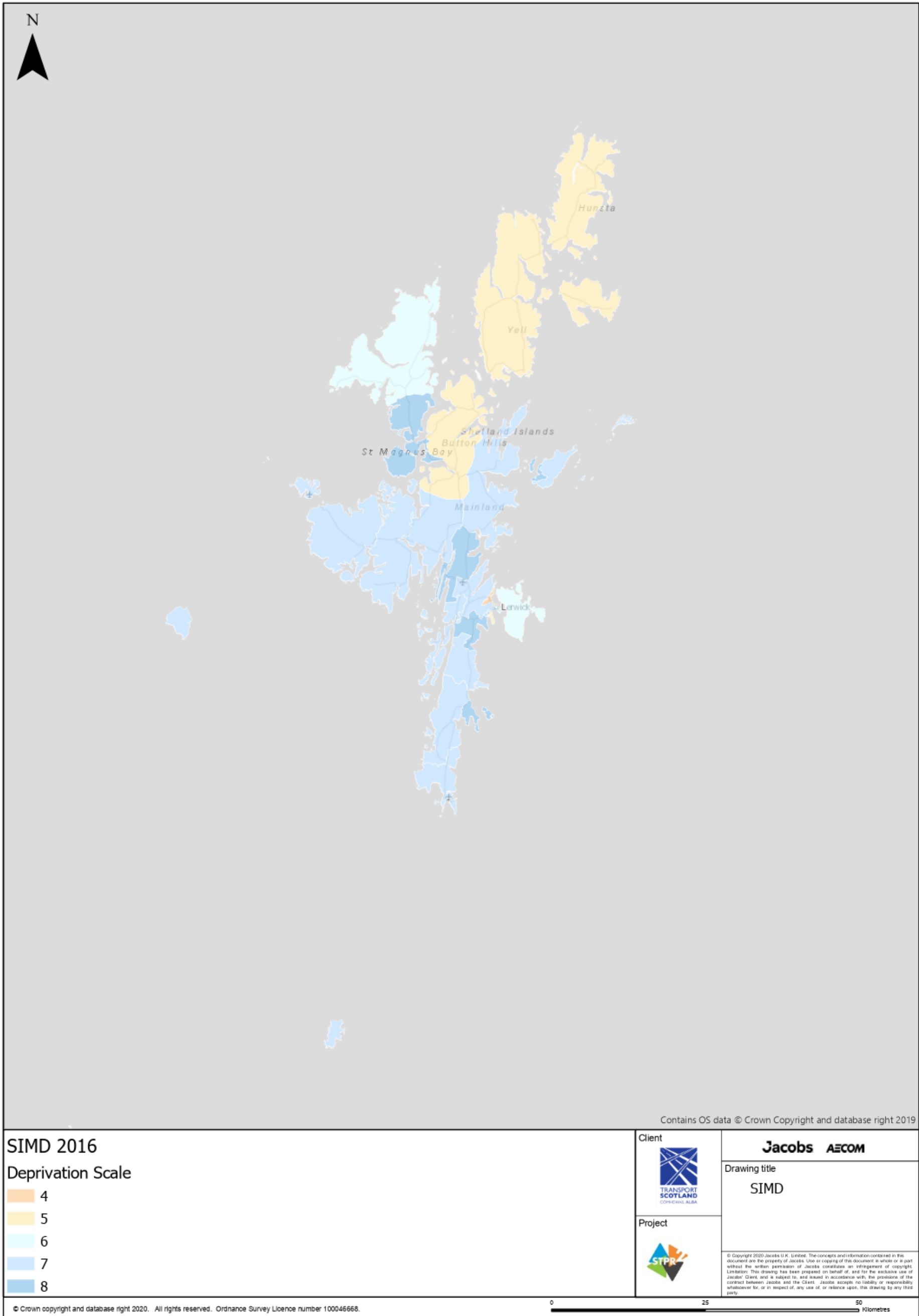
Figure A- 3 Shetland Islands Region Deprivation Index (SIMD) (Click image to go back to main report)

Environment Designations

- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Convention on Wetlands of International Importance (RAMSAR)
- National Nature Reserve (NNR)
- Marine Protected Areas (MPA)

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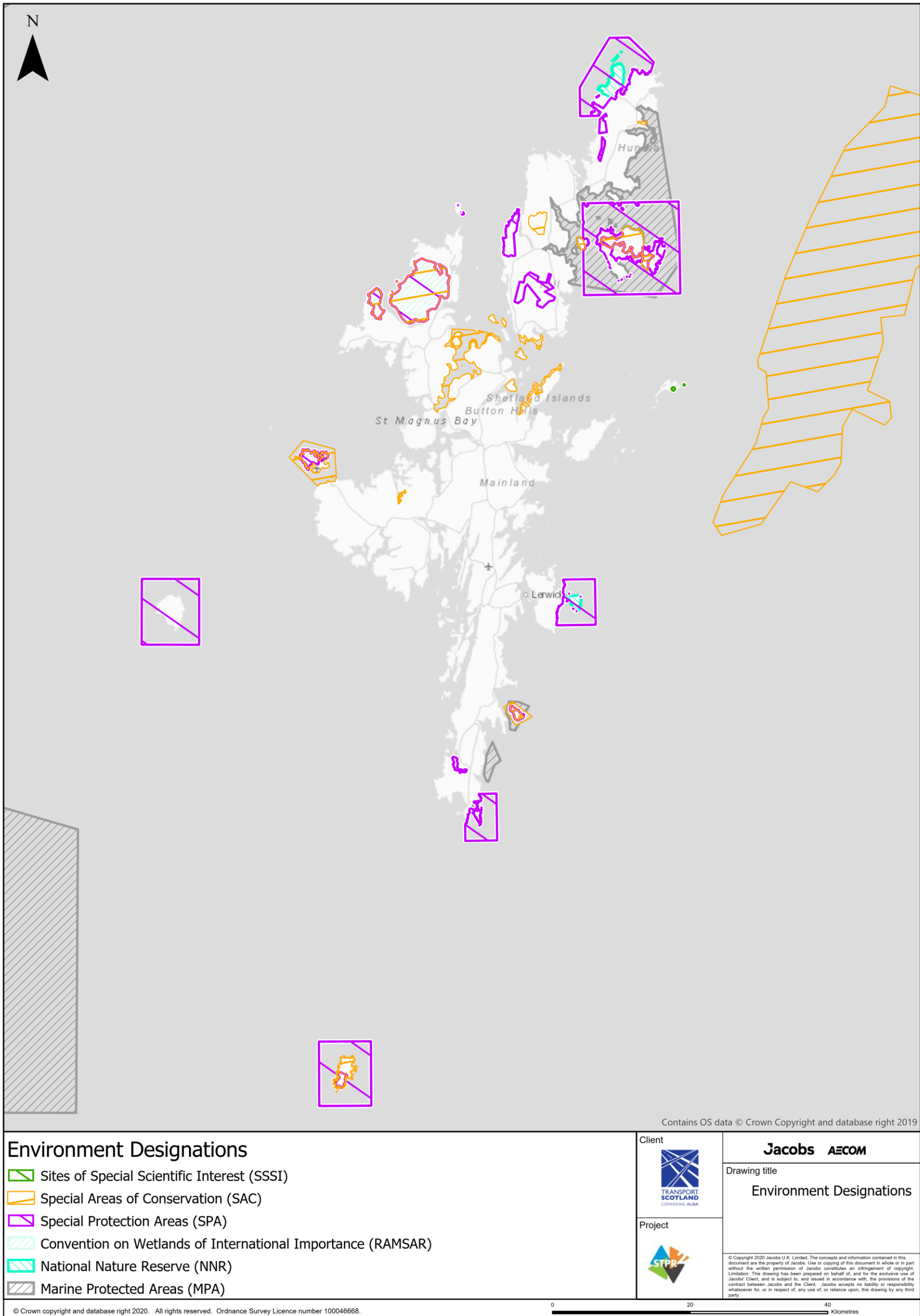
Figure A- 4 Shetland Islands Region Environmental Designation (Click image to go back to main report)
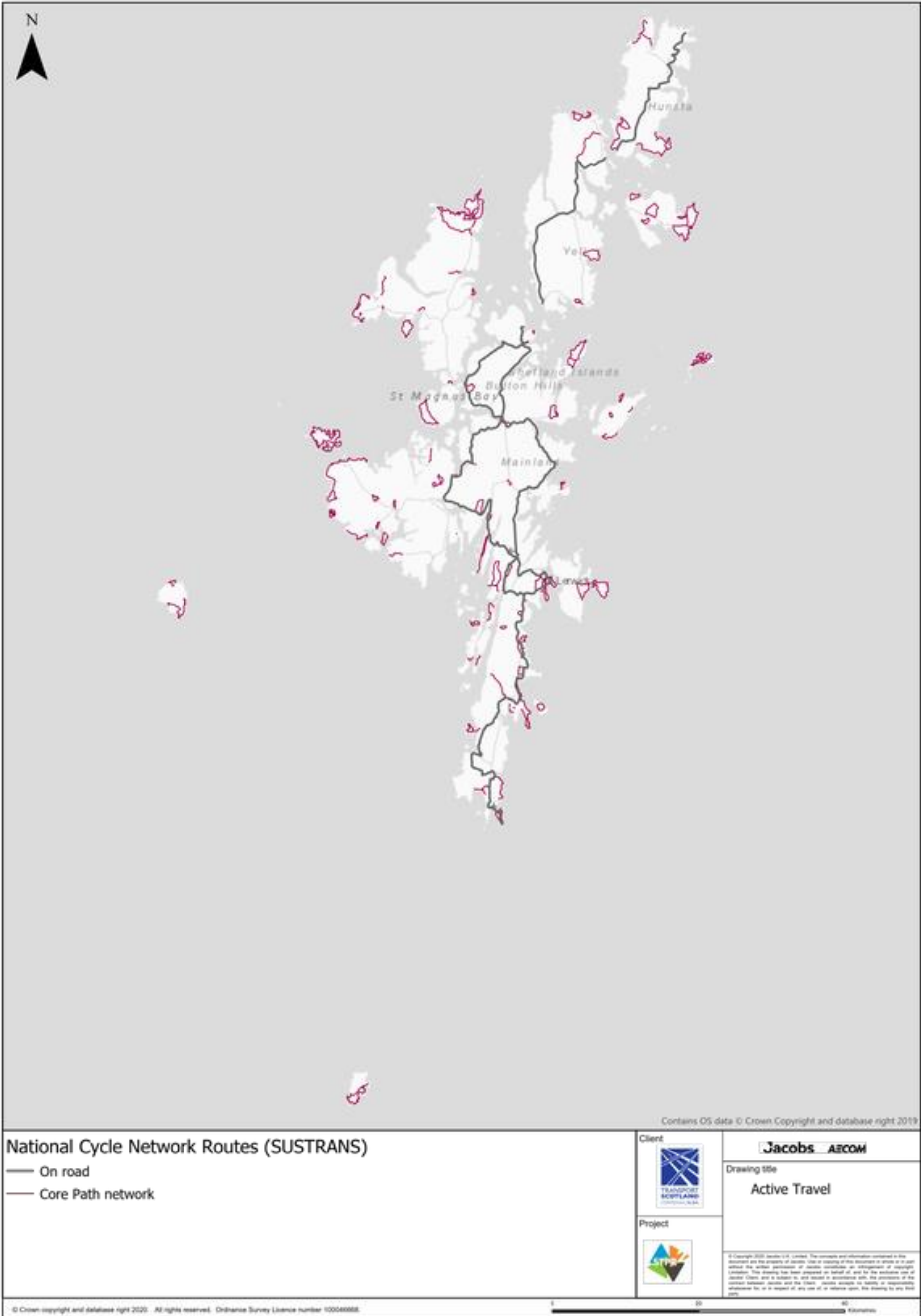
Figure A- 5 Shetland Islands Region Active Transport Network (Click image to go back to main report)
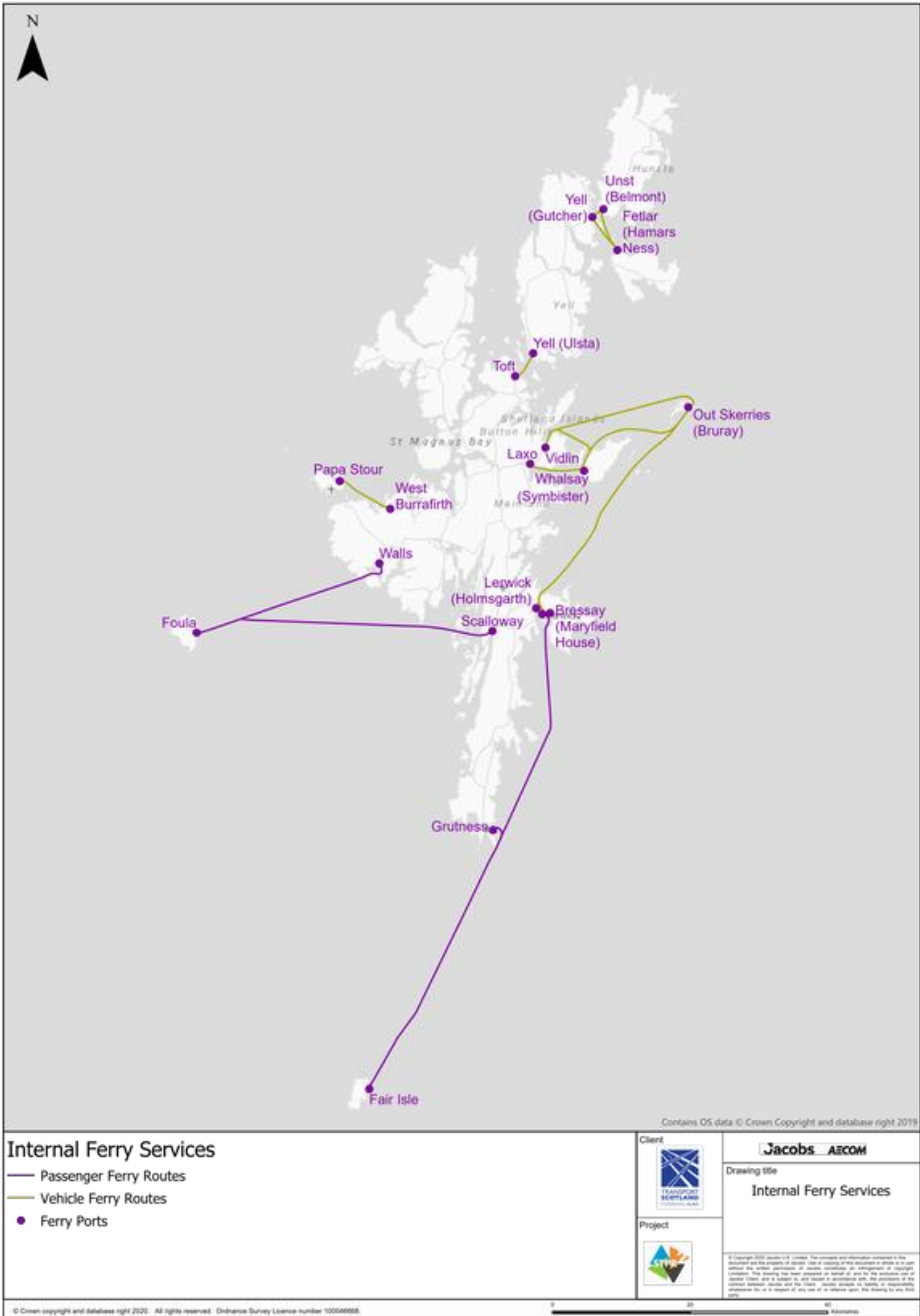
Figure A- 6 Internal Ferry Services - Operated by Shetland Island Council (Click image to go back to main report)
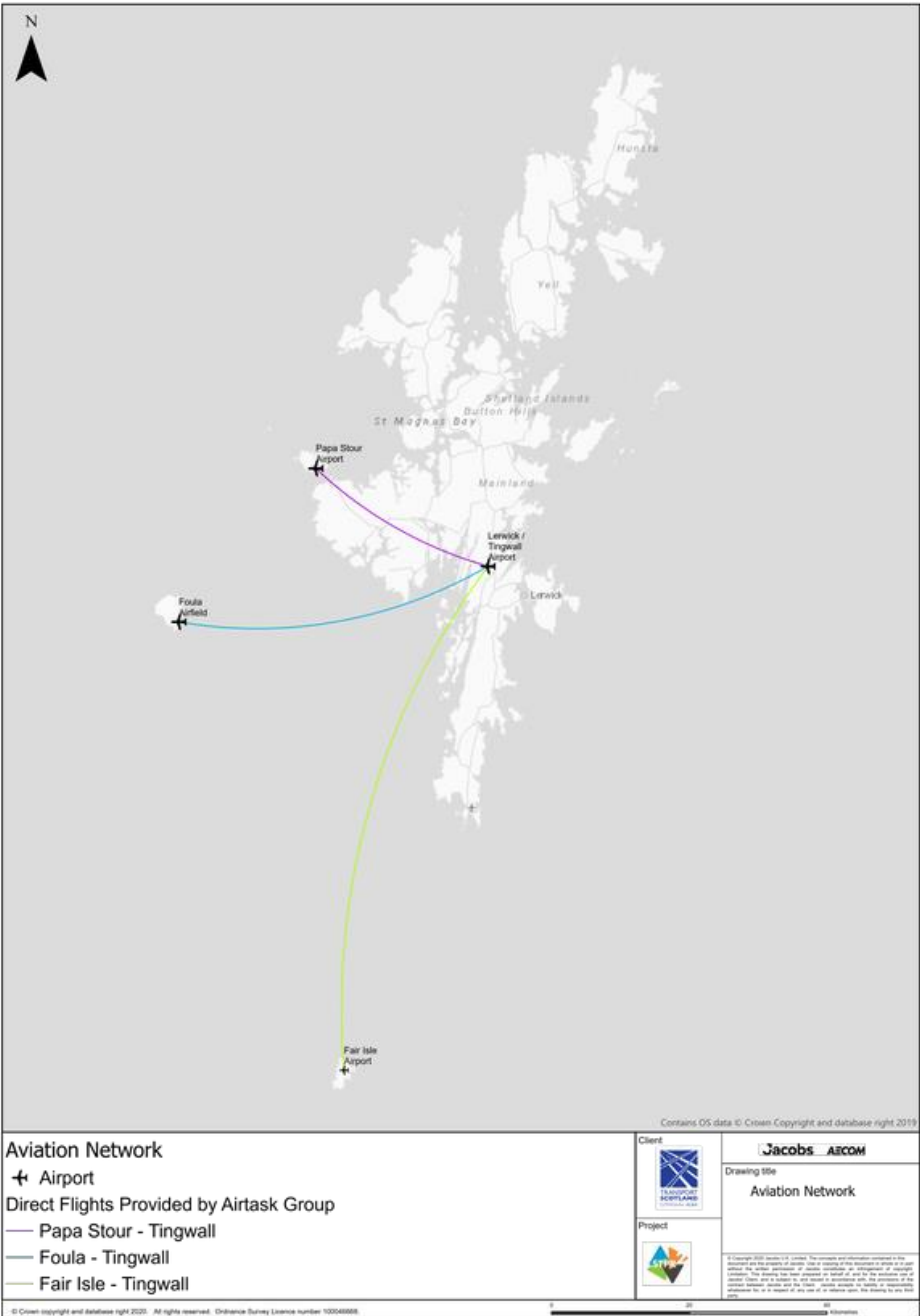
Figure A- 7 Shetland Islands Region Aviation Network (Click image to go back to main report)
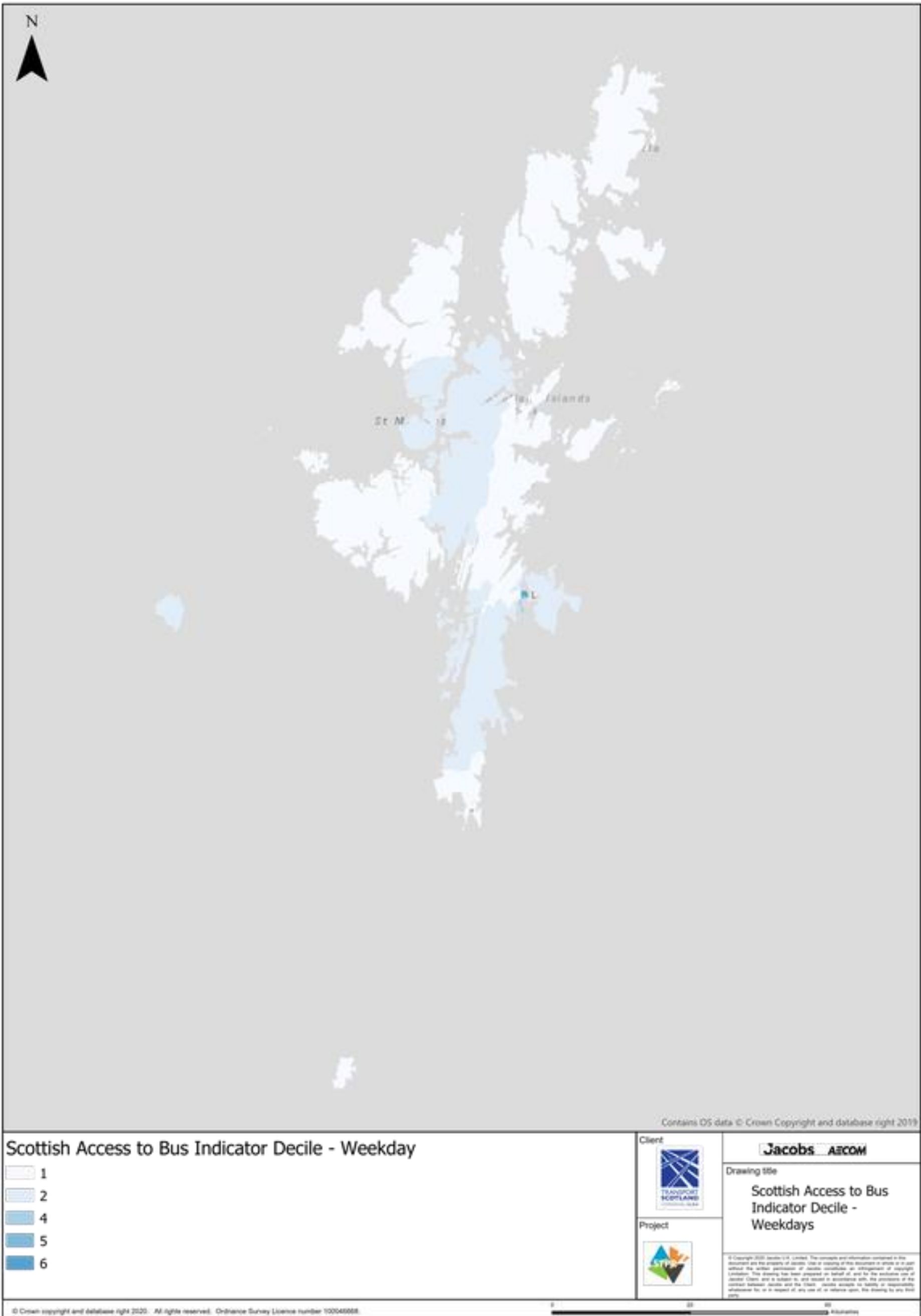
Figure A- 8 Scottish Access to Bus Indicator Decile – Weekdays (Shetland Islands Region) (Click image to go back to main report)

Transport Expenditure (%) - 2018

- 11-12 %
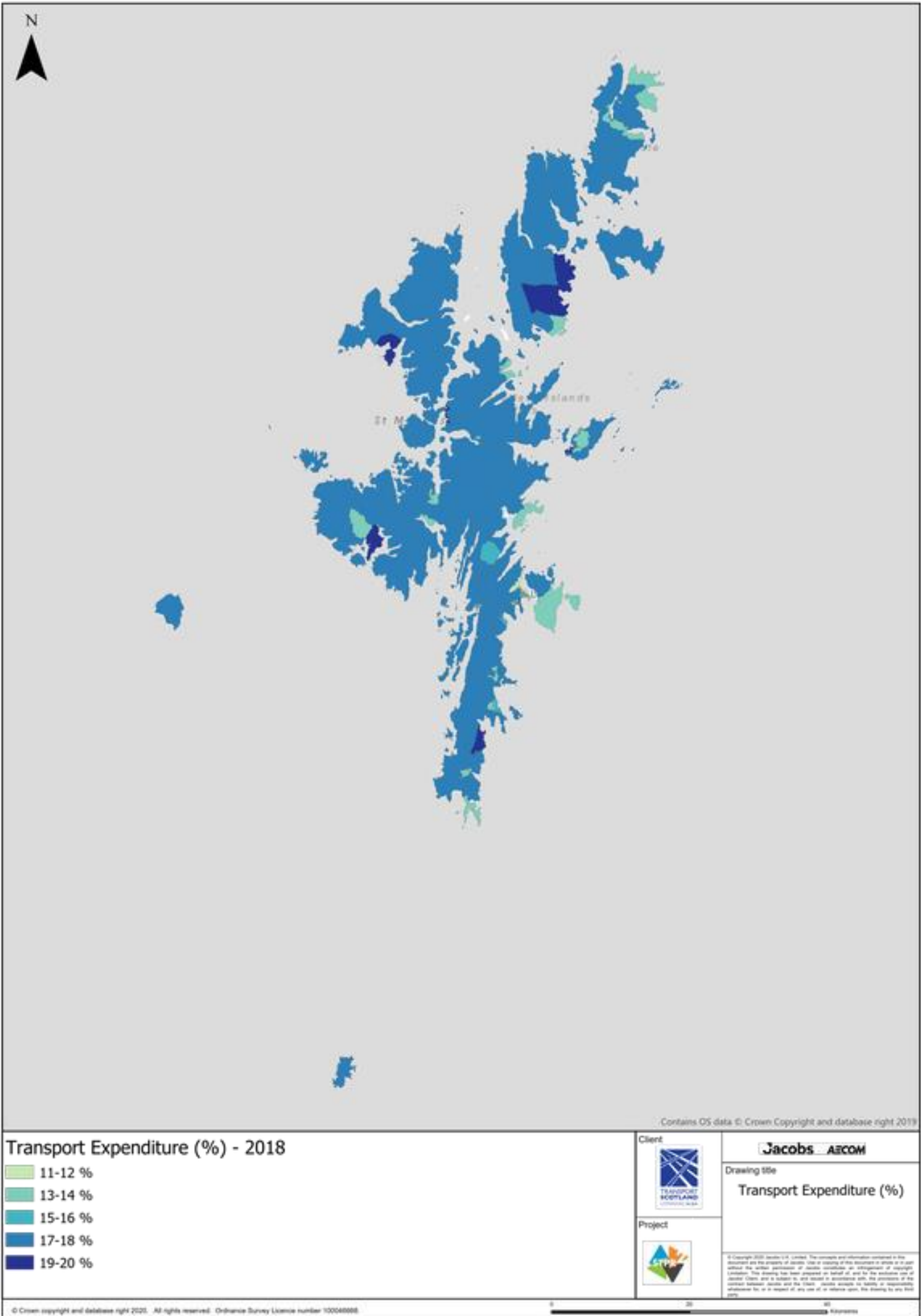- 13-14 %
- 15-16 %
- 17-18 %
- 19-20 %

Figure A- 9 Transport Expenditure (%) relative to Household Budgets (Click image to go back to main report)
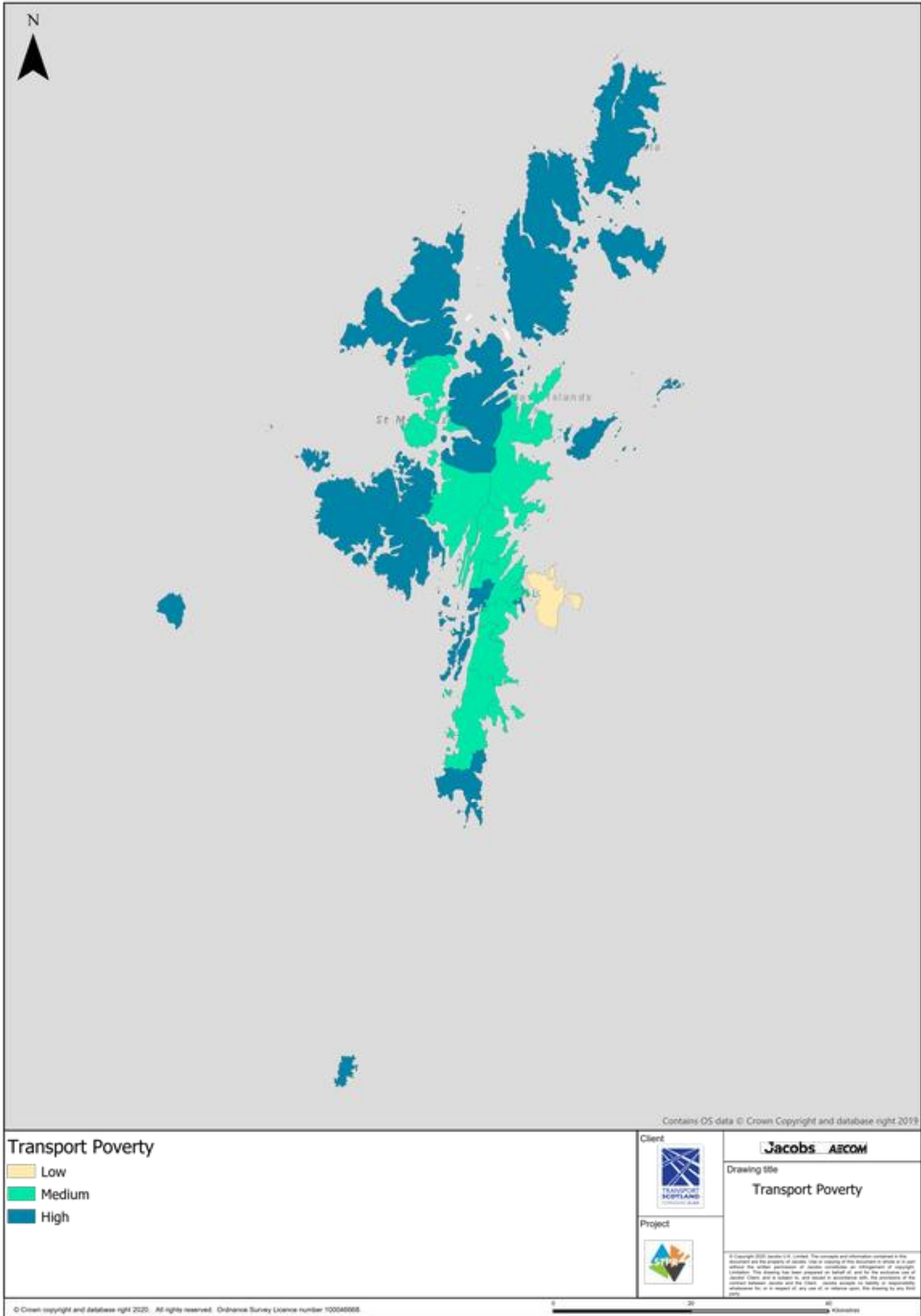
Figure A- 10 Transport Poverty within the Shetland Islands Region (Click on image to go back to main report)

Appendix B: Key Policy List

Theme	Title	Author	Year
Development	Infrastructure Investment Plan	The Scottish Government	2015
Development	National Planning Framework 3	The Scottish Government	2014
Development	National Islands Plan	The Scottish Government	2019
Development	Islands (Scotland) Act 2018	The Scottish Government	2018
Development	Shetland Local Development Plan	Shetland Islands Council	2014
Development	Shetland Local Outcome Improvement Plan	Shetland Partnership Performance Group	2016
Development	Shetland Partnership Plan 2018-2028	Shetland Health and Social Care Partnership	2018
Energy	The Future of Energy in Scotland: Scottish Energy Strategy	The Scottish Government	2017
Economy	Scotland's Economic Strategy	The Scottish Government	2015
Economy	A Low Carbon Economic Strategy	The Scottish Government	2010
Economy	Highlands and Islands Enterprise Strategy and Operating Plan 2019-2022	Highlands and Islands Enterprise	2018
Economy	Shetland Economic Development Strategy 2018-2022	Shetland Islands Council	2018
Transport	Shetland Transport Strategy Refresh 2018-2028	ZetTrans	2018
Transport	National Transport Strategy Refresh	Transport Scotland	2016
Transport	Scottish Ferry Services Ferries Plan 2013 - 2022	Transport Scotland	2013
Transport	Strategic Road Safety Plan	Transport Scotland	2016
Transport	Cycling Action Plan for Scotland	Transport Scotland	2017
Transport	Let's Get Scotland Walking	The Scottish Government	2014

Appendix C: Summary of Stakeholder Engagement Activities

Engagement Type	Date	Venue	Purpose and Details	No. of Attendees
Problems and Opportunities Workshop	Monday 24th June 2019	Islesburgh Community Centre, Lerwick	Workshop with stakeholders including representatives from transportation, health, equality, community and business sectors, in addition to local authority officers, to identify transport-related problems and opportunities in the region.	18
Structured Interviews	September – October 2019	-	Interviews with key stakeholders, including senior officers within the Shetland Islands local authority and business representatives, to identify transport-related problems and opportunities and potential options for the region.	7
Interventions Workshop	Monday 11th November 2019	Lerwick Town Hall, Lerwick	Workshop with stakeholders including representatives from transportation, business, environmental and equality sectors, in addition to local authority officers, to identify potential interventions to address problems and opportunities previously identified.	22
Elected Members Briefing / Workshop	Tuesday 11th February 2020	Town Hall, Lerwick	Elected Members from across the region attended a briefing session on emerging findings from STPR2 and to provide feedback on potential interventions that should be considered as the study moves forward.	13
Online Survey	Monday 2nd December 2019 – Friday 10th January 2020	Online	Online survey promoted to members of the public and organisations to validate emerging problems from the STPR2 process and to provide feedback on potential interventions to improve the strategic transport network, across all modes, in the future.	25 respondents