STRATEGIC TRANSPORT PROJECTS REVIEW

PROTECTING OUR CLIMATE AND IMPROVING LIVES

Initial Appraisal: Case for Change
Highlands and Islands Region

February 2021

Jacobs AECOM

PROJECT NAME	
Project No:	B2356701
Document Title:	STPR2: Initial Appraisal: Case for Change – Highlands and Islands Region
Revision:	Final
Date:	03/02/2021

Jacobs UK Ltd.

95 Bothwell Street
Glasgow, Scotland G2 7HX
United Kingdom

T +44.(0)141 243 8000
F +44 (0)141 226 3109

www.jacobs.com

Contents

Appendices

Figures

Tables

List of Acronyms

ACRONYM	
ADS	Air Discount Scheme
AQMA	Air Quality Management Area
BRES	Business Register and Employment Survey
CHFS	Clyde and Hebrides Ferry Service
CIC	Community Interest Company
CNES	Comhairle nan Eilean Siar
CO_2	Carbon Dioxide
CP6	Control Period 6
CRWIA	Children's Rights and Wellbeing Impact Assessment
EqIA	Equality Impact Assessment
FSDA	Fairer Scotland Duty Assessment
FNL	Far North Line
GDP	Gross Domestic Product
GVA	Gross Value Added
HGV	Heavy Goods Vehicle
HIAL	Highlands and Islands Aviation Limited
HIE	Highlands and Islands Enterprise
HITRANS	Highlands and Islands Transport Partnership
HML	Highland Mainline
ICIA	Island Communities Impact Assessment
KLL	Kyle Line
LNR	Local Nature Reserve
LULUCF	Land Use and Land Use Change and Forestry
MPA	Marine Protected Area
NIFS	Northern Isles Ferry Services
NC500	North Coast 500
NCN	National Cycle Network
NNR	National Nature Reserve
NPF4	National Planning Framework 4
NSA	National Scenic Area

NTS2	National Transport Strategy
PSO	Public Service Obligation
RET	Road Equivalent Tariff
RSPB	Royal Society for the Protection of Birds
RTWG	Regional Transport Working Group
SAC	Special Area of Conservation
SCDI	Scottish Council for Development and Industry
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SIMD	Scottish Index of Multiple Deprivation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STAG	Scottish Transport Appraisal Guidance
STPR2	Strategic Transport Projects Review
TMfS	Transport Model for Scotland
TPO	Transport Planning Objective
WHL	West Highland Line

1. Introduction

1.1. Background and Report Purpose

Transport Scotland is currently undertaking the second Strategic Transport Projects Review (2) 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 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 4 key phases of STAG are illustrated in Figure 1

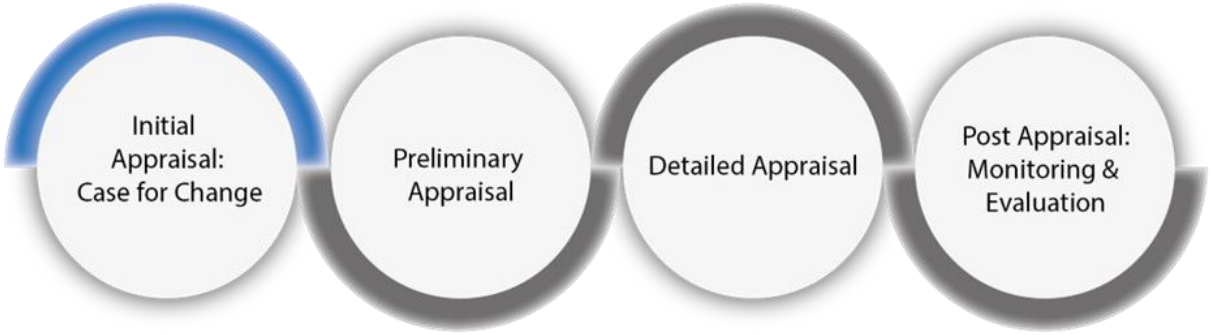


Figure 1: The Four Key Phases to the Scottish Transport Appraisal Guidance (STAG)

This report sets out the Initial Appraisal: Case for Change for the Highlands and Islands region as shown in Figure 2 which forms 1 of 11 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 transport network across the Highlands and Island 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.

It is recognised that the vision set out in NTS2 will only come to fruition through working in partnership with others, including Local Authorities and Regional Transport Partnerships. This is particularly in areas of transport for which local authorities are responsible and which are not within the scope of this national strategic transport review.

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[3] and airports; and
- The inter-urban bus and active travel network and principal routes within the city region

[1] Transport Scotland, National Transport Strategy (NTS2), February 2020, www.transport.gov.scot/media/47052/national-transport-strategy.pdf
[2] Transport Scotland, Scottish Transport Appraisal Guidance (STAG), 2008, www.transport.gov.scot/media/41507/j9760.pdf
[3] List of major ports is still under review

areas.

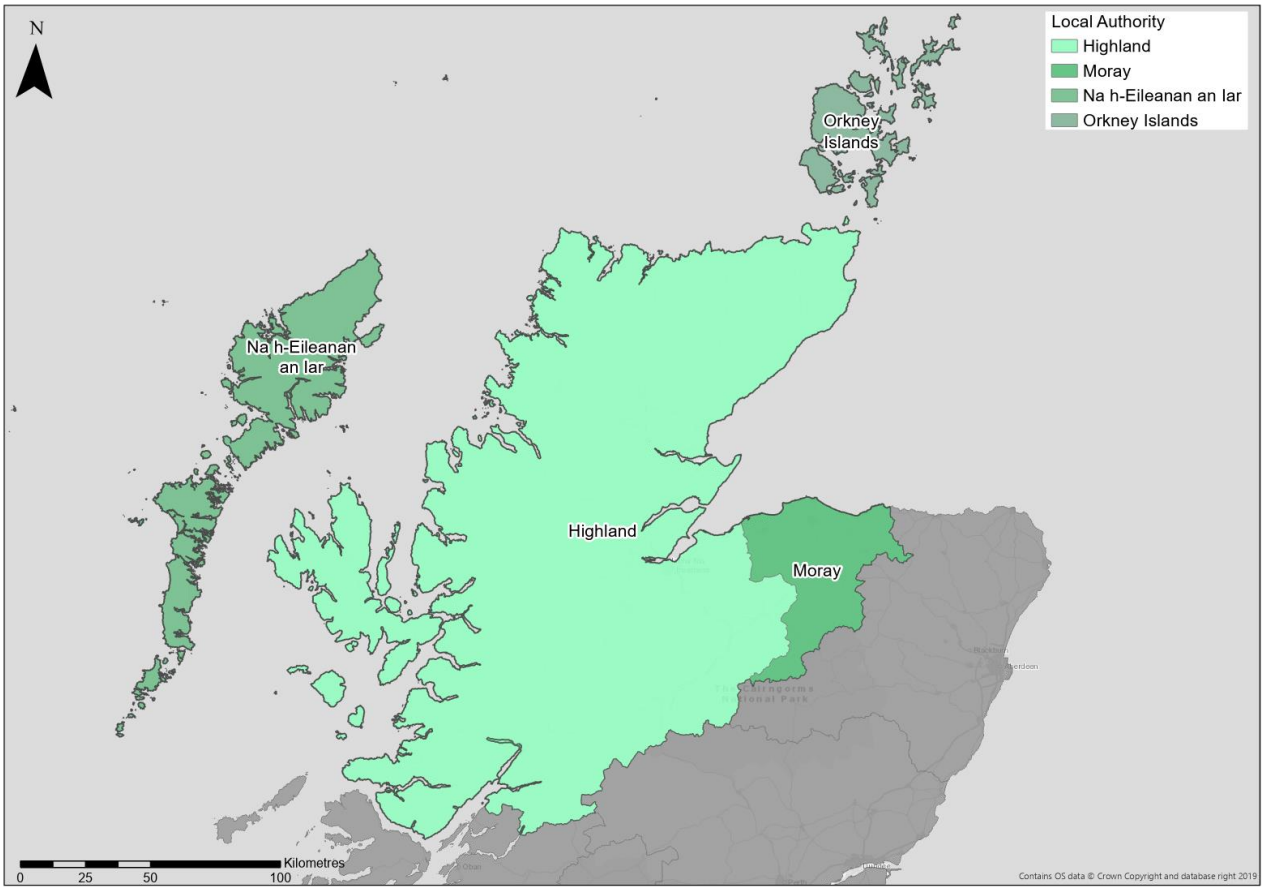


Figure 2: Highlands and Islands Study Area

(Click image to enlarge figure)[4]

The Highlands and Islands region comprises the 4 local authorities of Highland, Comhairle nan Eilean Siar (CNES), Moray and Orkney. The region has a wide-ranging transport network comprising active travel routes, airports and ferry connections to and between the islands, rail lines and stations and the trunk road network.

To reflect the regional approach of STPR2, a Regional Transport Working Group (RTWG) has been established with representatives from the 4 local authorities (The Highland Council, CNES, Moray Council and Orkney Islands Council), HITRANS, Transport Scotland, the STPR2 consultant team and other regional partners.

This Case for Change report also presents a set of Transport Planning Objectives (TPOs), aligned with the national STPR2 objectives. The TPOs express the outcomes sought for the region and 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 was developed and sifted in line with the approach detailed later in this report.

[4] Large scale figures can be found in Appendix A of this document or by following the link below the figure title where provided.

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 Highlands and Islands region.

1.2. COVID-19 Impacts

The draft version of this report was published in February 2020 and draws on data and stakeholder engagement collected before the COVID-19 pandemic. It is recognised that the pandemic and the restrictions implemented have changed the way society works and travels and that the longer term impacts of the pandemic will have to be taken into consideration as STPR2 progresses. A more detailed review of the short term impacts of COVID-19 on STPR2 is provided in the National Case for Change document.

Highlands and Islands Enterprise (HIE) provided analysis in response to the February 2020 version of this report which draws on available COVID-19 datasets, as well as existing socio-economic datasets to present an overview of the impacts of COVID-19 on the region's economy. The document concludes that the region is anticipated to take longer to recover from the pandemic than other parts of Scotland due to high levels of employment in the most severely affected sectors and the high proportion of small and medium sized enterprises and self-employed individuals in the region[5].

[5] Highlands and Islands Enterprise, The Impact of COVID-19 on the Highlands and Islands, September 2020, https://www.hie.co.uk/media/9646/the-impact-of-covid-19-on-the-highlands-and-islands.pdf

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 study is being undertaken. Figure 3 provides an overview of the strategies and policies reviewed, with a summary of key documents presented below.

- **Programme for Government[6];** sets out the Scottish Government's ambitions and aims to make Scotland a more successful country with opportunities for increased wellbeing for all.
- **National Transport Strategy (NTS2)[7];** provides the national transport policy framework, setting out a clear vision of a sustainable, inclusive, safe and accessible transport system which 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 & wellbeing. The NTS2 Delivery Plan was published on 17 December 2020 detailing the actions being taken by the Scottish Government between 2020 and 2022 to achieve the vision of the NTS2[8].
- **Climate Emergency[9];** declared by the Scottish and UK Governments and multiple local authorities, including The Highland Council, Moray Council and Orkney Islands Council. 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. The Climate Change Plan update was published on 16 December 2020, and details Scottish Government's plans to meet new ambitious targets to end our contribution to climate change by 2045[10].
- **Growth Deals[11];** The Scottish Government, the UK Government and regional partners have agreed funding for £315 million as part of the Inverness and Highland City-Region Deal. The Scottish Government is committed to ensuring 100% coverage of Scotland with Growth Deals and together with the UK Government have agreed £100m funding

[6] Scottish Government, Protecting Scotland, Renewing Scotland: The Government's Programme for Scotland 2020-2021, https://www.gov.scot/publications/protecting-scotland-renewing-scotland-governments-programme-scotland-2020-2021/

[7] Transport Scotland, National Transport Strategy (NTS2), February 2020, www.transport.gov.scot/media/47052/national-transport-strategy.pdf

[8] Transport Scotland, National Transport Strategy (NTS2) – Delivery Plan – 2020 to 2022, https://www.transport.gov.scot/media/48839/nts-delivery-plan-2020-2022.pdf

[9] Scottish Government, The Global Climate Emergency - Scotland's Response: Climate Change Secretary Roseanna Cunningham's statement, May 2019, https://www.gov.scot/publications/global-climate-emergency-scotlands-response-climate-change-secretary-roseanna-cunninghams-statement/

[10] Scottish Government, Update to the Climate Change Plan 2018 – 2032, https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/

[11] Scottish Government, £50 Million for Islands, 2020, https://www.gov.scot/news/gbp-50-million-for-islands/
My Moray, Moray Growth Deal, https://www.mymoray.co.uk/moray-growth-deal#
Scottish Government, £50 million for islands, July 2020, https://www.gov.scot/news/gbp-50-million-for-islands/

in the Islands Growth Deal, which covers Scotland's 3 islands authorities - Shetland Islands Council, Orkney Islands Council and Comhairle nan Eilean Siar. A further £65 million is set to be invested by the Scottish and UK Government, with the agreement of the Heads of Terms on the Moray Growth Deal.

- **HITRANS' Regional Transport Strategy[12];** sets out the strategic direction and outcomes to be achieved over its lifespan to 2022, with a focus on "a prosperous economy and on inclusive, connected and healthy communities."
- **Local Transport Strategies[13];** set out the strategic direction and outcomes to be achieved in The Highland Council, Moray Council, Orkney Council, and Comhairle nan Eilean Siar local authority areas over the lifespan of each strategy.
- **Regional and Local Policy Documents[14];** This includes non-transport specific plans, such as local development plans and economic strategies, which transport improvements play a key role in both the enabling and delivery of their outcomes.

In addition to the 4 Priorities set out above, the NTS2 supports the adoption of a Sustainable Travel Hierarchy, which 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[15].

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

In addition, supporting the development of STPR2, a Strategic Environmental Assessment (SEA), an Equality Impact Assessment), a Children's Rights and Wellbeing Impact Assessment (CRWIA), a Fairer Scotland Duty Assessment (FSDA) and an Island Communities Impact Assessment (ICIA) are being undertaken. Early work on these assessments has informed this Case for Change.

---

[12] HITRANS, Regional Transport Strategy, 2008, https://hitrans.org.uk/Strategy/Regional_Transport_Strategy
HITRANS, Draft Updated Regional Transport Strategy, May 2017, *ibid*

[13] Highland Council, Local Transport Strategy, 2010, http://www.highland.gov.uk/download/downloads/id/762/highland_local_transport_strategy_draft_document
Moray Council, Moray Local Transport Strategy Part 1, 2011, http://www.moray.gov.uk/downloads/file87542.pdf
Moray Council, Moray Local Transport Strategy Part 2, 2011, http://www.moray.gov.uk/downloads/file87543.pdf
Orkney Islands Council, Local Transport Strategy, 2007, https://www.orkney.gov.uk/Files/Transport/Local_Transport_Strategy.pdf
Comhairle nan Eilean Siar, Local Transport Strategy, 2020, https://www.cne-siar.gov.uk/media/16033/outer-hebrides-local-transport-strategy-2020-2030-full.pdf

[14] HIE, 2019-2022 Strategy, 2019, https://www.hie.co.uk/media/5006/strategyplusplanplus2019-2022-1.pdf
HITRANS, Regional Transport Strategy Re-Fresh Main Issues Report, 2016, HITRANS, https://hitrans.org.uk/userfiles/file/Regional_Transport_Strategy_Refresh_Main_Issues_Report.pdf

[15] Transport Scotland, National Transport Strategy (NTS2), February 2020, www.transport.gov.scot/media/47052/national-transport-strategy.pdf

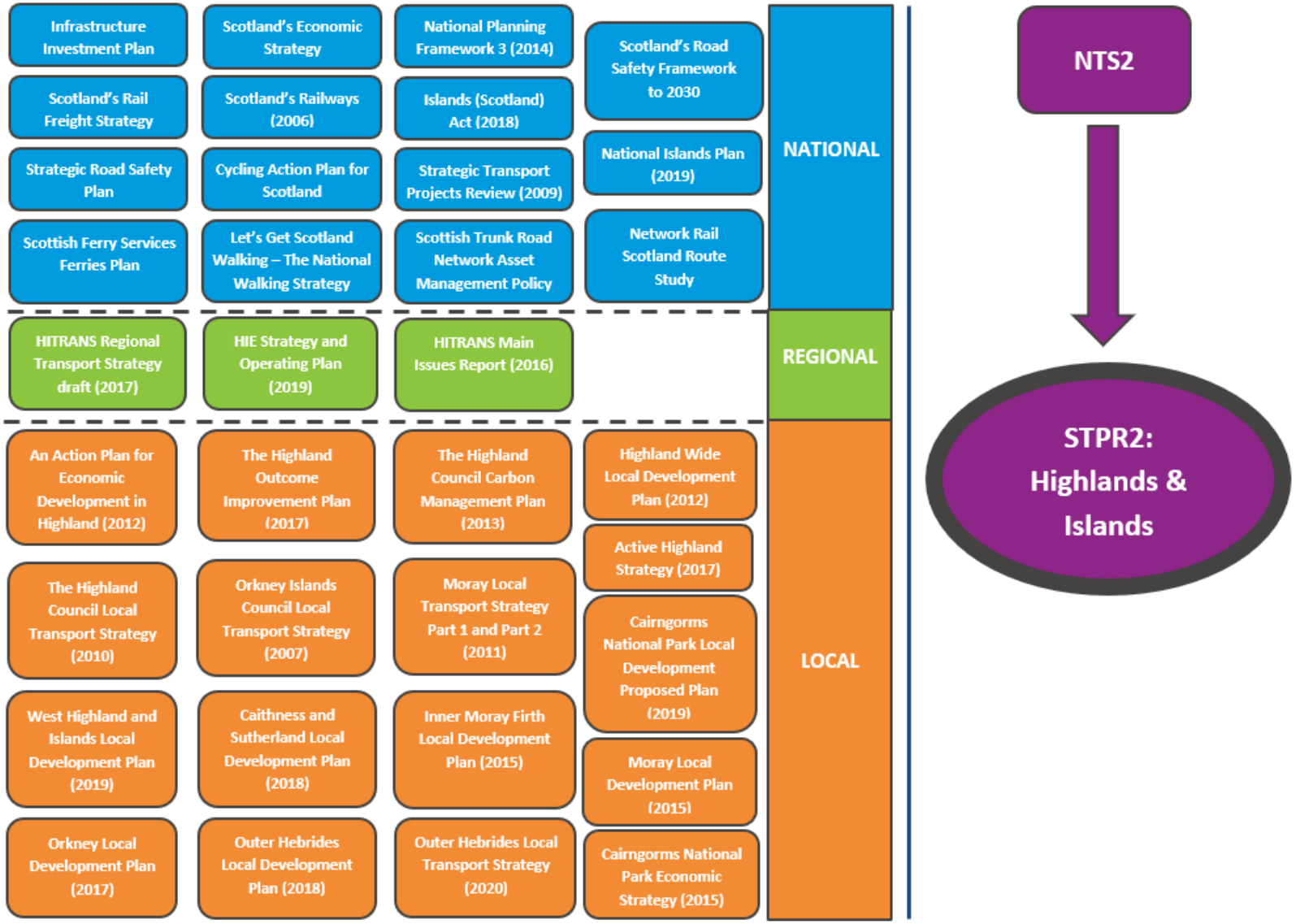


Figure 3: Policy Review

2.2. Geographical Context

The majority of the Highlands and Islands region is classified as remote rural. Figure 4 shows the Urban Rural 2016 6-Fold Classification16. The 6-fold classification consists of the following; the proportion of the regional population residing in each classification is presented in brackets[17]:

- Large Urban Areas (0%)
- Other Urban Areas (28%)
- Accessible Small Towns (5%)
- Remote Small Towns (18%)
- Accessible Rural (14%)
- Remote Rural (35%)

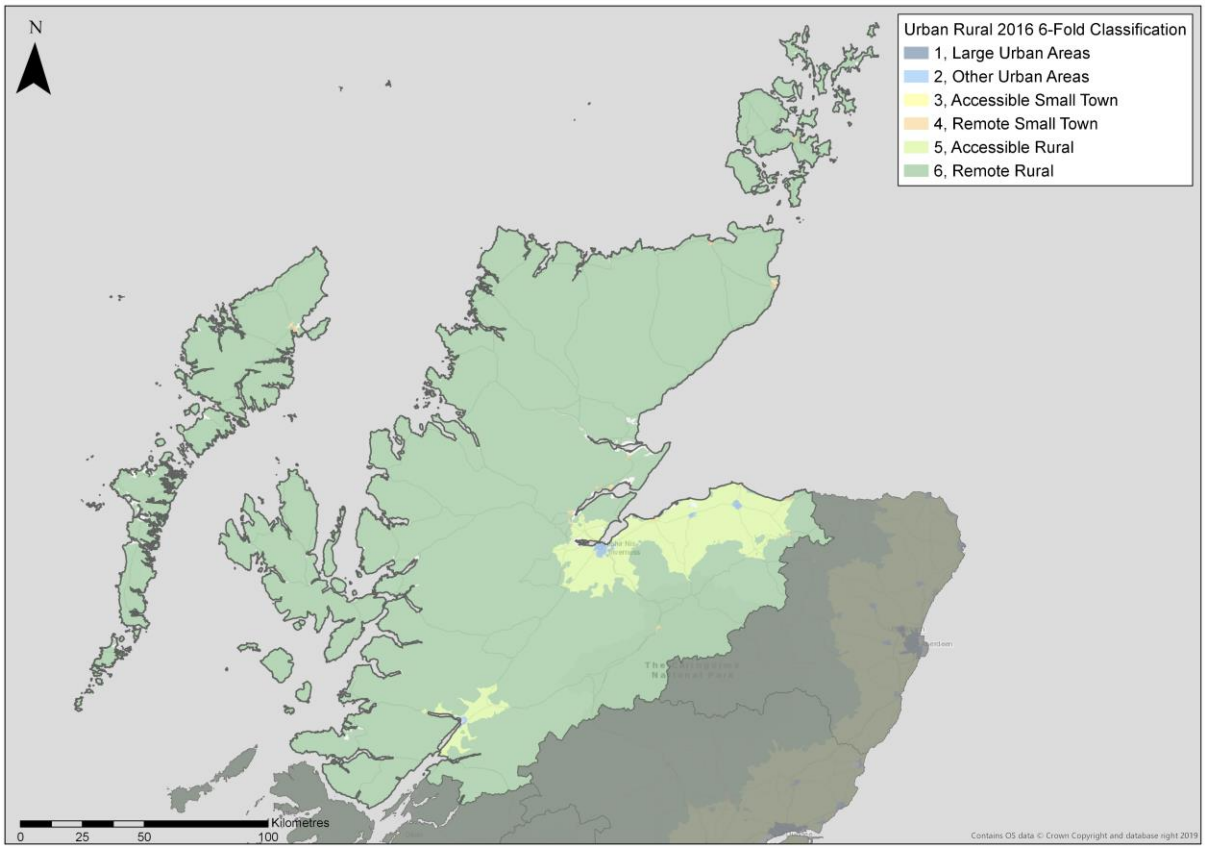


Figure 4: Urban-Rural 2016 Scottish Government 6-Fold Classification

(Click image to enlarge figure)

16 Scottish Government, Urban Rural Classification, 2016, https://www.gov.scot/publications/scottish-government-urban-rural-classification-2016/pages/2/

17 Based on NRS, Mid-Year Population Estimates, 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

2.3. Socio Economic Context

Note that wherever possible the latest available datasets have been analysed to produce the statistics and results presented in this report. In some cases, however, the data used may not be fully up-to-date. This is typically because the latest data is not yet available, or because the data and/or the method of collection may have changed over time and can no longer be used in the same way. It is also recognised that the pandemic and the restrictions implemented have changed the way society works and travels. However, given the uncertainty over what the potential lasting impacts of the pandemic may be, pre-COVID-19 datasets have been used to reflect the baseline situation.

2.3.1. Benchmarking

To compare the performance of socio-economic indicators for the region, benchmark categories were created using the Scottish Government Urban Rural Classification 2016. The classification defines the urban and rural areas across Scotland, based upon 2 main criteria: population and accessibility. This area classification is split and defined across categories ranging from large urban area to remote rural, where the geographies of local authorities are divided up in percentage terms across these categories. The local authorities selected are considered the most representative for each of the benchmark categories, generally being the top 5 or 6 local authorities within that related category.

The 4 benchmark categories are:

- Scottish Cities (Dundee, Aberdeen, Edinburgh and Glasgow);
- Urban (including Fife, Falkirk, Inverclyde, Midlothian, North Lanarkshire and West Lothian);
- Rural (including Perth & Kinross, Aberdeenshire, Highland, Scottish Borders, Dumfries & Galloway and Moray);
- Islands (including Na h-Eileanan Siar, Orkney and Shetland Islands)

As the majority of the region is categorised as Accessible Rural or Remote Rural, the region has been compared against the Rural benchmark. Consideration was given to comparing Orkney Council and Comhairle nan Eilean Siar to the Islands benchmark, however as the Islands benchmark is a small sample rate, and includes both Na h-Eileanan Siar and Orkney, this was not determined a meaningful comparison.

2.3.2. *Population*

In 2019, the Highlands and Islands region had an estimated population of 380,640 people[18], of which 62% lived within The Highland Council local authority area. The region has the lowest population density (12 persons per square km) in Scotland when compared to the national average (70 persons per square km)[19], however this varies across the local authorities within the region and within each local authority, with Inverness, the largest settlement in the region, having a population density of approximately 2,300 residents per square km[19].

[18] NRS, Mid-Year Population Estimates, 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

[19] NRS, Mid-Year Population Estimates, 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

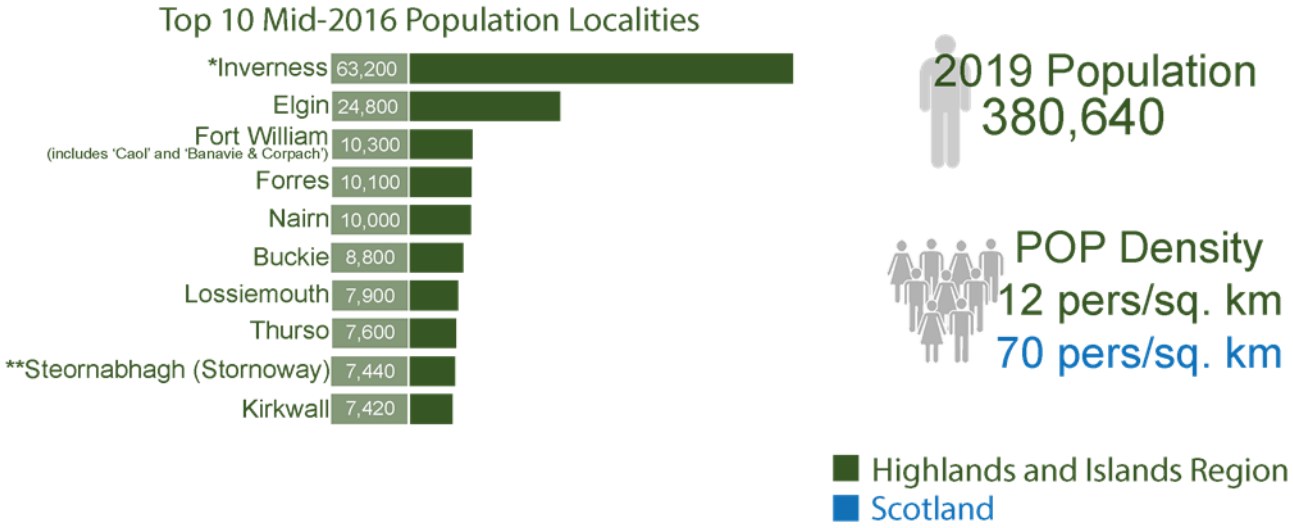


Figure 5: Highlands and Islands Largest Settlements by Populations 2016, 2019 Population and Population Density

Figure 5 presents the top 10 settlements by population. The most populated settlement in the Highlands and Islands region is Inverness, with a population of around 63,000 in 2016. Of the other local authority areas in the region, the most populated settlements are Elgin (24,800), Stornoway (7,400) and Kirkwall (7,400)[20].

Of the top 10 most populous settlements in the region, 7 increased in population between 2012 and 2016. Thurso, Fort William and Stornoway reduced in population size. The largest population growth was Elgin (+8%) and the largest decline in Thurso (-2%) as shown in Figure 6[21]. The average growth across Scotland was 3.2% over this time period.

*Include Milton of Leys, Westhill, Smithton, culloden and Balloch
**Includes Steornabhagh (Stornoway) Newmarket, Lancasdal and Bruach Mairi (Laxdale and Marybank) and Sanndahaig (Sandwick)

[20] NRS, Mid-Year Population Estimates for Settlements and Localities in Scotland, 2016, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/settlements-and-localities

[21] NRS, Mid-Year Population Estimates for Settlements and Localities in Scotland, 2016, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/settlements-and-localities

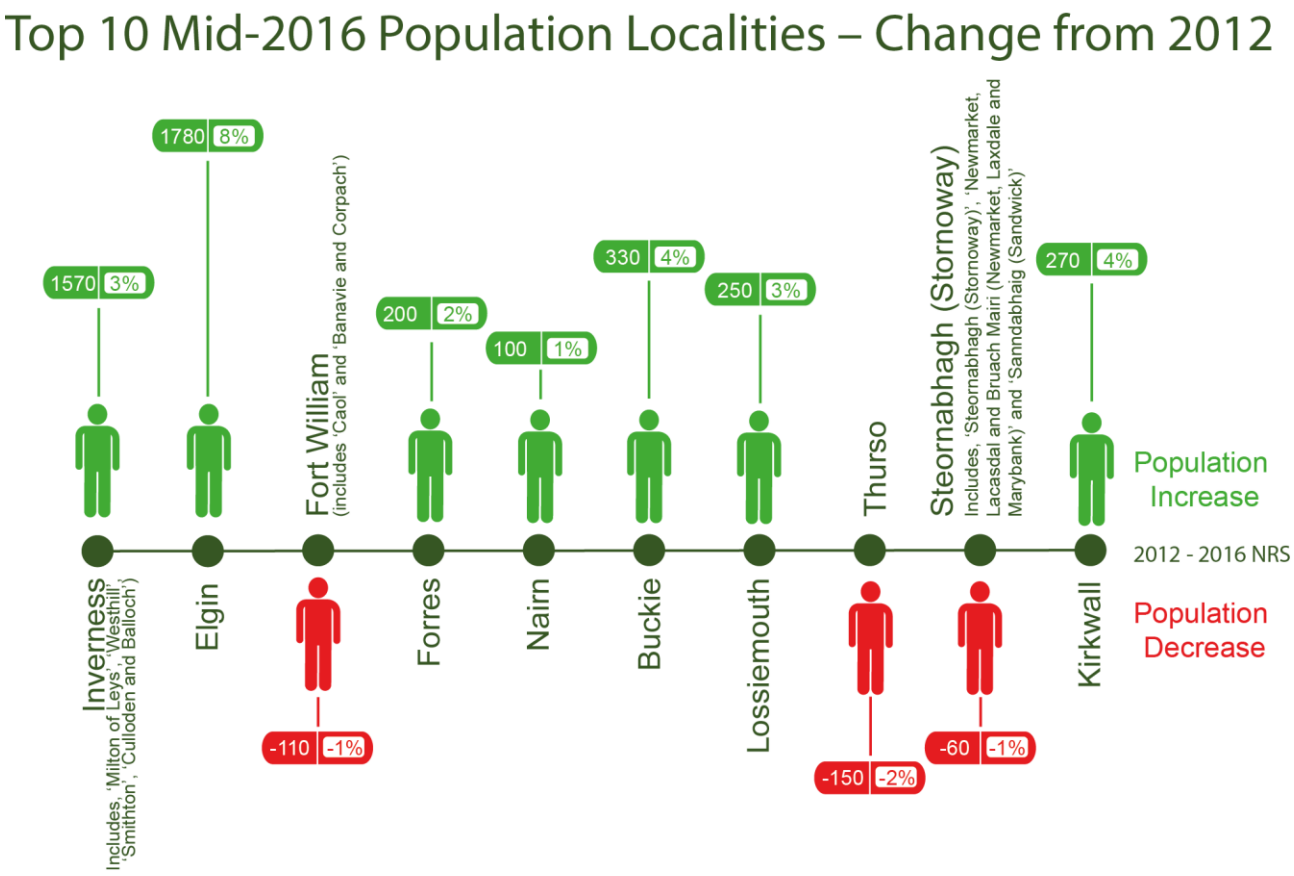


Figure 6: Top 10 Settlements Population Change

Within the more remote areas of the Highlands and Islands region, population decrease is regarded a major issue. Between 2011 and 2018 the population of Caithness and Sutherland (-3.9%) and Eilean Siar (-3.1%) both decreased[22].

Overall, the population in the region is slightly older than comparable rural areas[23]. Relative to the national average, the proportion of the population of working age is 3.2 percentage points lower (60.8% compared to 64.0%), while the proportion of the population aged 65+ is 3.5 percentage points higher (22.6% compared to 19.1%)[24]. The population aged 65+ in the region increased by 22.1 percentage points between 2011 and 2019[25].

While the extent of the increase in over 65s varied across the region, the most marked changes between 2011 and 2018 were in Orkney (+23%), Lochaber, Skye and Wester Ross (+21%), and the Inner Moray Firth (+21%). At the same time there has been a decline in the working age population, most apparent in the Eilean Siar (-8%) and

[22] HIE paper for the Convention for Highlands and Islands, Population Change Analysis.
[23] The 'Regional' Benchmark used for the purposes of comparison for the Highlands and Island region is based on the average of the representative rural local authorities of Perth & Kinross, Aberdeenshire, Highland, Scottish Borders, Dumfries & Galloway and Moray.
[24] NRS, Mid-year Population Estimates, 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates
[25] NRS, Mid Year Population Estimates, 2011 and 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

Caithness and Sutherland (-8%). In 2018, the working age population of the Eilean Siar (58%), Caithness and Sutherland (58%), Lochaber, Skye & Wester Ross (60%) and Orkney (60%) are all lower than the Highlands and Islands region (62%) and Scotland as a whole (65%)[26].

All local authorities in the region had a positive net migration ranging from 0.5% in The Highland Council and Orkney Islands Council areas to 0.2% experienced in Moray[27].

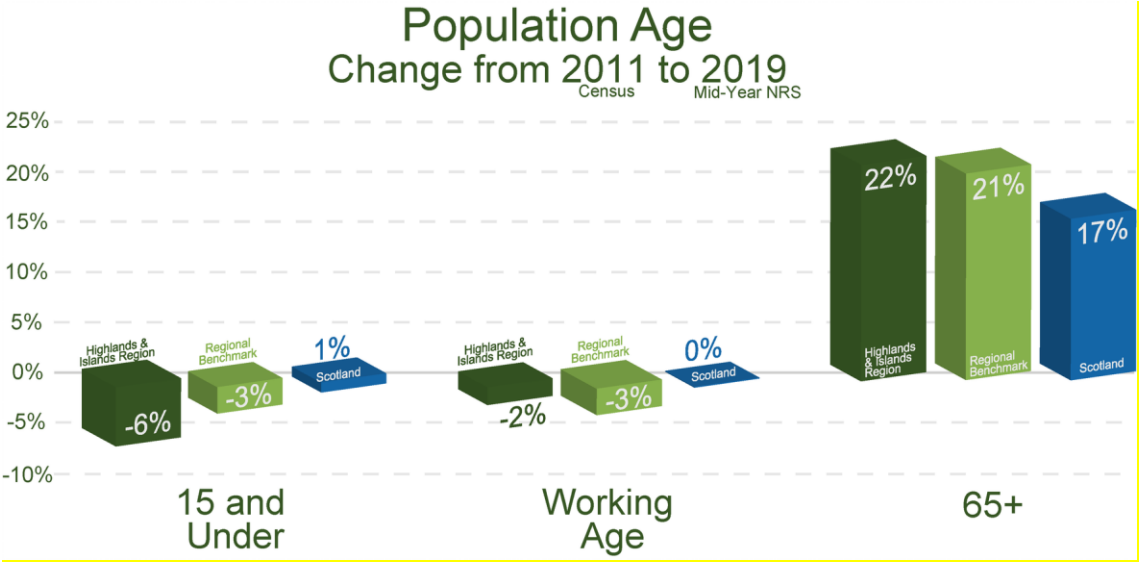


Figure 7: Population Age Structure Comparison – 2011 to 2019

A comparison of the region's population by age in 2011 and 2019[28] is presented in Figure 7. The figure demonstrates that the working age population is decreasing in the Highlands and 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 increase in those aged 65 and over. This shows the ageing population in the region and indicates that the working age population is set to decrease further in the future.

Further analysis was undertaken to investigate the change in the population age structure in the main urban centres within each local authoirty to determine if the population demographic change aligns with the region as a whole. Inverness, Elgin, Kirkwall and Stornoway were identified as the main urban centres within each local authority area and the results for each settlement are presented in Table 1.

The results varied between each location and demographic category. Inverness and Elgin show a lower reduction in the 15 and under category compared to the regional average, whereas Kirkwall and Stornoway have a slightly higher reduction in ths category, compared to the regional average. It is noted that the percentage reduction in the working age population in all the urban centres is greater than the regional average, with the exception of Elgin, where the working age population has remained stable since 2011, which is in line with the rest of Scotland. The percentage change in the over 65 category is

[26] Commission for Highlands and Islands, Population Change Analysis.
[27] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/
[28] NRS, Mid Year Population Estimates, 2011 and 2019, https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

not as great in Inverness and Stornoway as the regional or national averages. Within Elgin, the increase in the over 65 category is slightly higher than the national trend but is 4 percentage points lower than the regional average and Kirkwall is 3 percentage points higher than the national average and 2 percentage points lower than the regional average.

This indicates that, with the exception of Kirkwall, the population is generally younger within the main urban centres, and whilst those aged 65 and over are increasing, they are not increasing at the same rate as the region as a whole. As a result, the main urban centres will not feel the impacts of the aging population and the implications this can have on the transport network as acutely as the more rural areas of the region.

Table 1: Population Age Structure Comparison – 2011 to 2019 in Main Urban Centres

Settlement	Percentage Change		
	15 and Under	Working Age	65+
Inverness	-2%	-3%	14%
Elgin	-1%	0%	18%
Kirkwall	-9%	-5%	20%
Stornoway	-8%	-12%	10%
Regional Average	-6%	-2%	22%
Scottish Average	1%	0%	17%

2.3.3. *Travel to Work – Mode Share*

In the Highlands and Islands region, a high proportion of people work from home (15%)[29], this is 4 percentage points higher than the national average. Levels of walking and cycling are also higher than the national average, as shown in Figure 8, overleaf, which may be linked to a higher proportion of the people living within 2km of their work place compared to the national average. Levels of commuting trips made by car are in line with national average at 62% although rates of car availability are higher within the region.

[29] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/

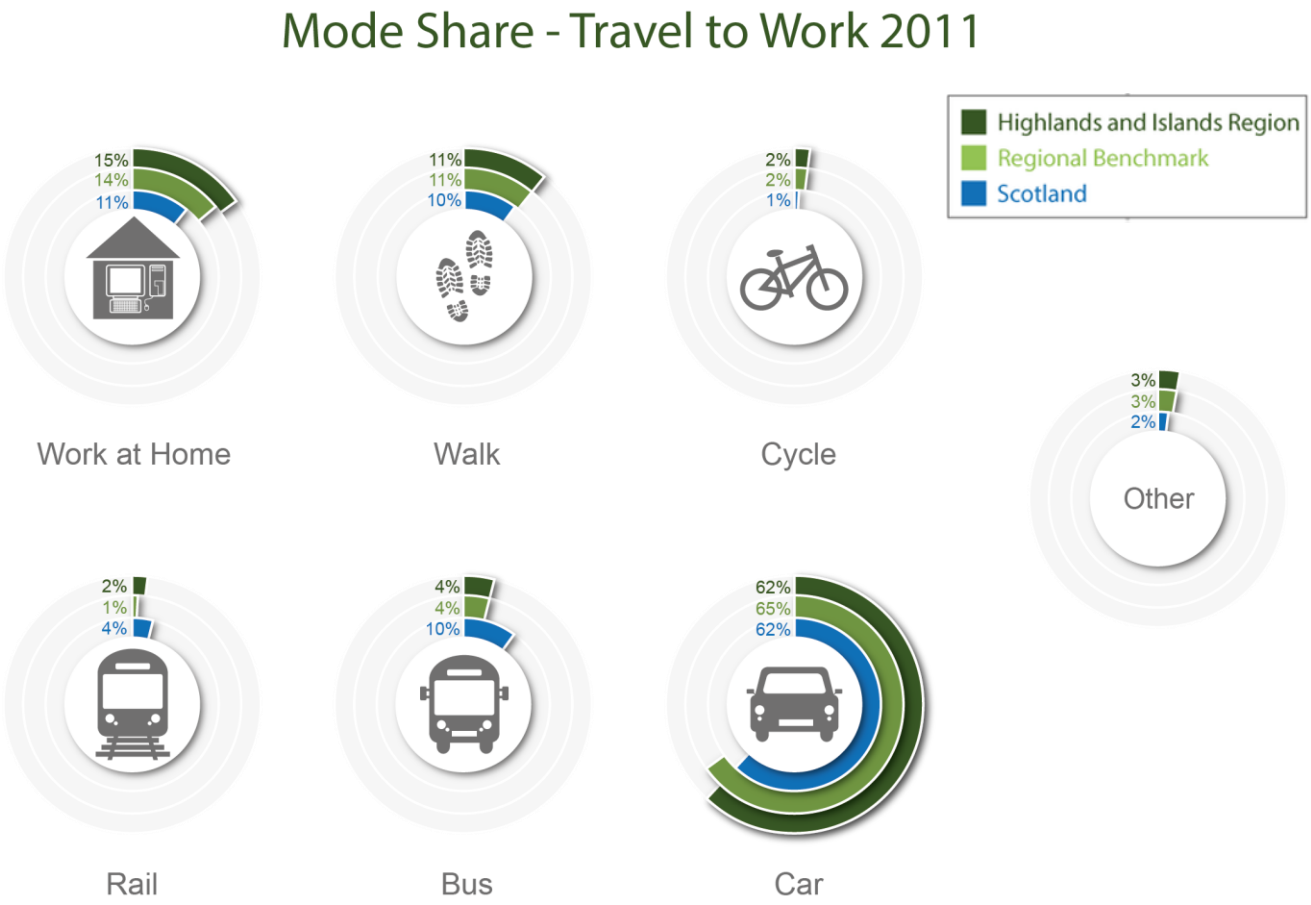


Figure 8: Travel to Work Mode Share29

Figure 9, overleaf, shows that 80% of households have access to 1 or more cars, compared to 69% nationally[30]. This reflects the rurality of the region and the longer travel distances required to access key services, such as medical facilities and for social and leisure purposes, thereby increasing the need to own a vehicle.

[30] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/

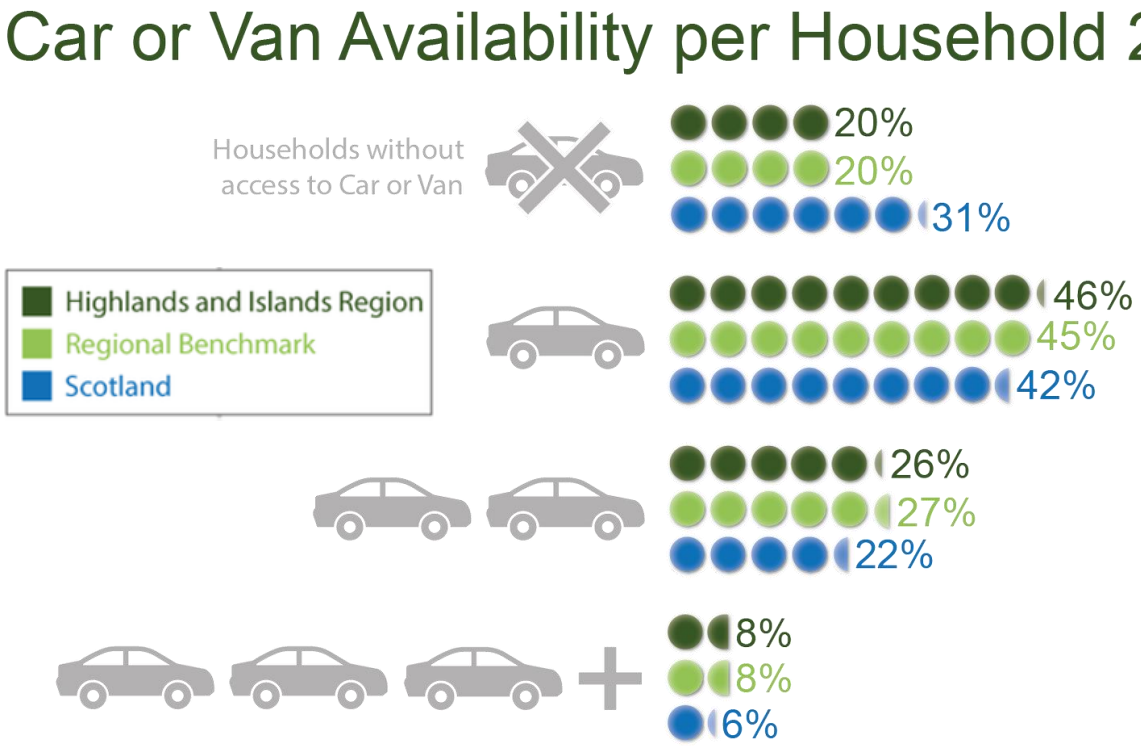


Figure 9: Car Availability

2.3.4. Travel to Work – Distance Travelled

The proportion of people who travel less than 2km to work in the region is approximately 5 percentage points higher than the national average. This may be a contributing factor in the higher proportion of people who travel to work by active modes. In addition, the proportion of people who travel to work between 2km and 5km, 5km and 10km, and 10km and 20km was significantly lower than the national average; 3.6%, 7.2% and 2.2% respectively. Travel to work distances of 20km to 30km, 30km to 40km, and 40km to 60km in the region are comparable with the national average, at 0.3 percentage points lower, 0.7 percentage points higher, and 0.5 percentage points higher respectively. Very long travel to work distances of more than 60km made up a higher proportion for the Highlands and Islands region at 13.3% compared to the national average at 10.9%, as shown in Figure 10[31].

[31] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/

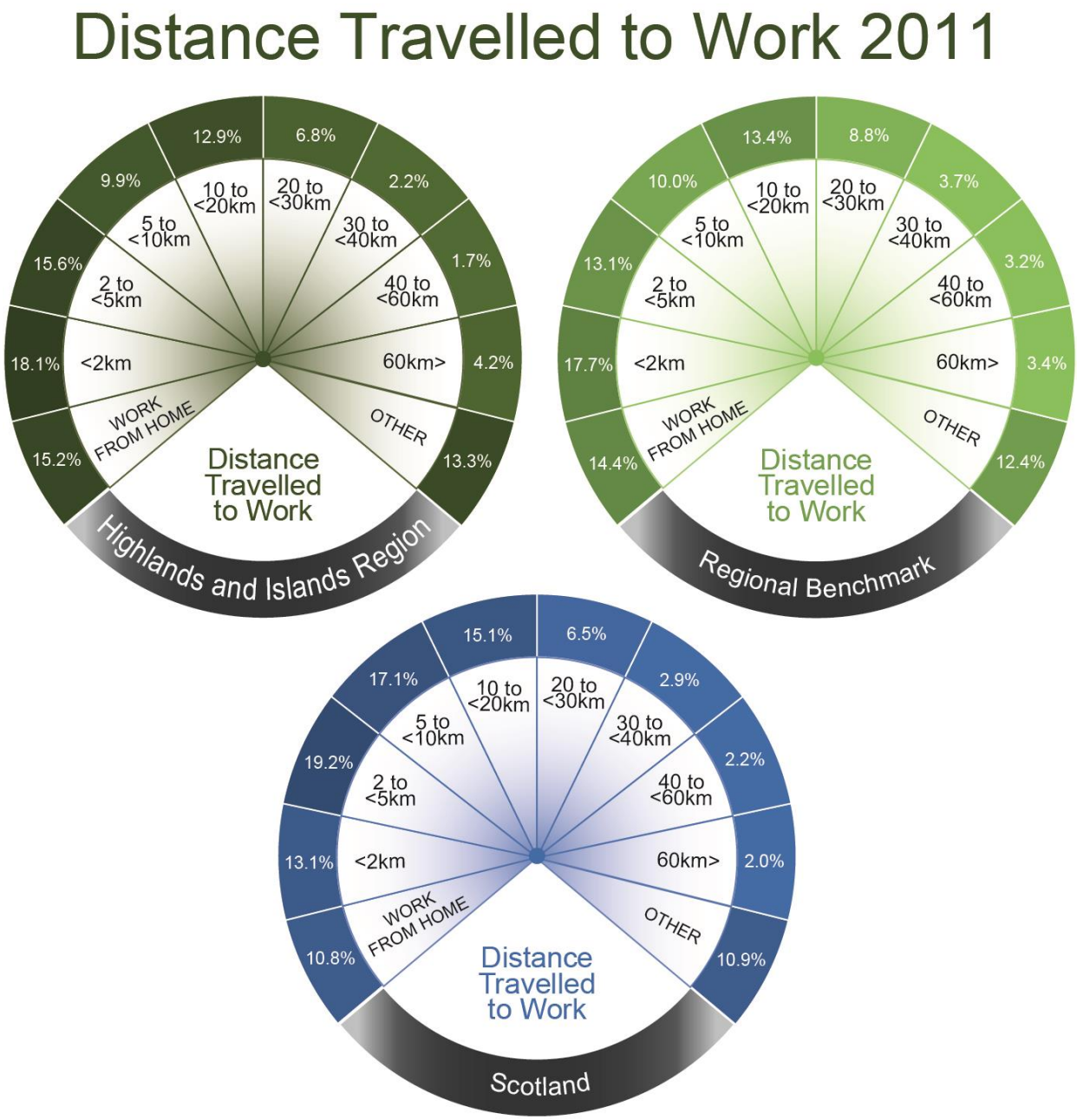


Figure 10: Distance Travelled to Work

2.3.5. *Economic Activity*

In terms of percentage change in GVA, between 2009 and 2016, the Highlands[32] economy grew at a faster rate than the Scottish economy as a whole, as shown in Figure 11[33]. Whilst the percentage change in GVA continued to increase across the Scottish economy between 2016 and 2017, there was a reduction in the GVA output over this year within the region. As a result, the ten year growth (between 2008 and 2018) for the region is in line with Scotland as a whole. However, the growth profiles are distinctly different for the region when compared to Scotland as a whole, illustrating the differing economic sectors at play. For example, the importance of tourism to the economy within The Highland Council area is reflected by the high proportion of employment within the Accommodation & Food sector, as shown in Figure 12. Similarly, Manufacturing and Human Health and social work are also prominent sectors within the Highland economy with levels of employment in these sectors higher than the national average.

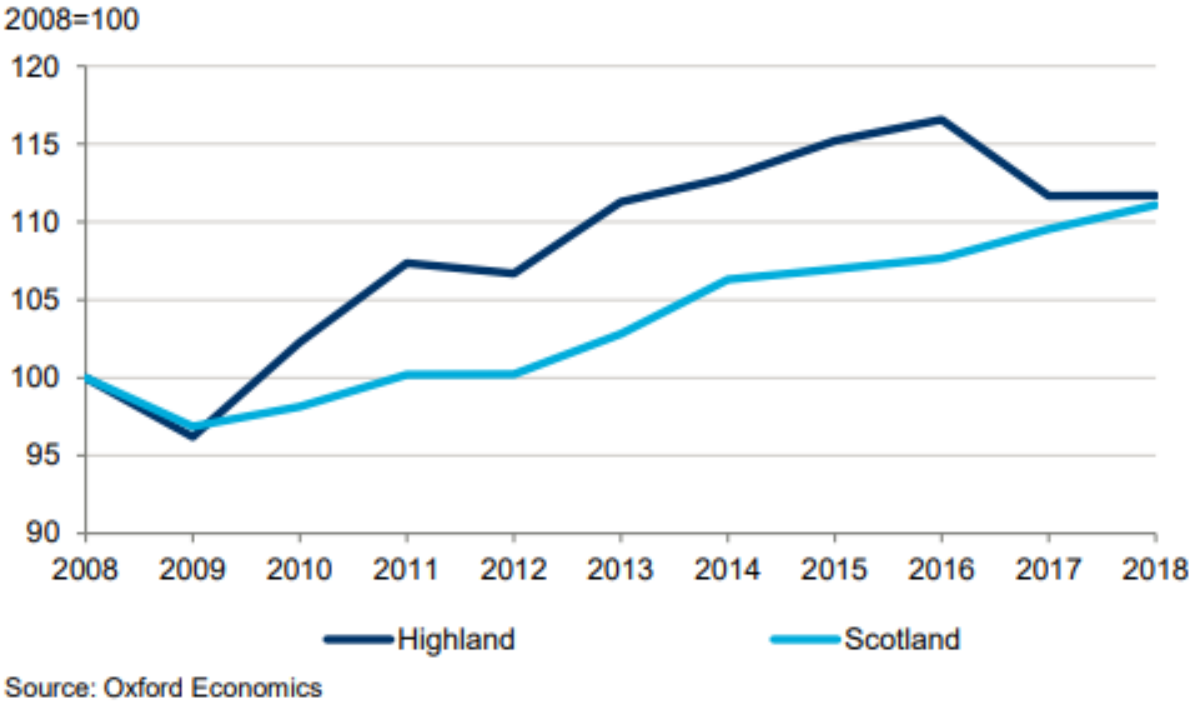


Figure 11: Index of GVA, Highland Council and Scotland, 2008-2018

[32] The Oxford Economics' report "International research on regional economic. Implications for delivering inclusive growth in Scotland" reports on Highland, the Islands and Moray separately therefore assuming Highland Council area.

[33] Oxford Economics, International Research on Regional Economies - Implications for Delivering Inclusive Growth in Scotland, May 2019, https://www.scottishfuturestrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf

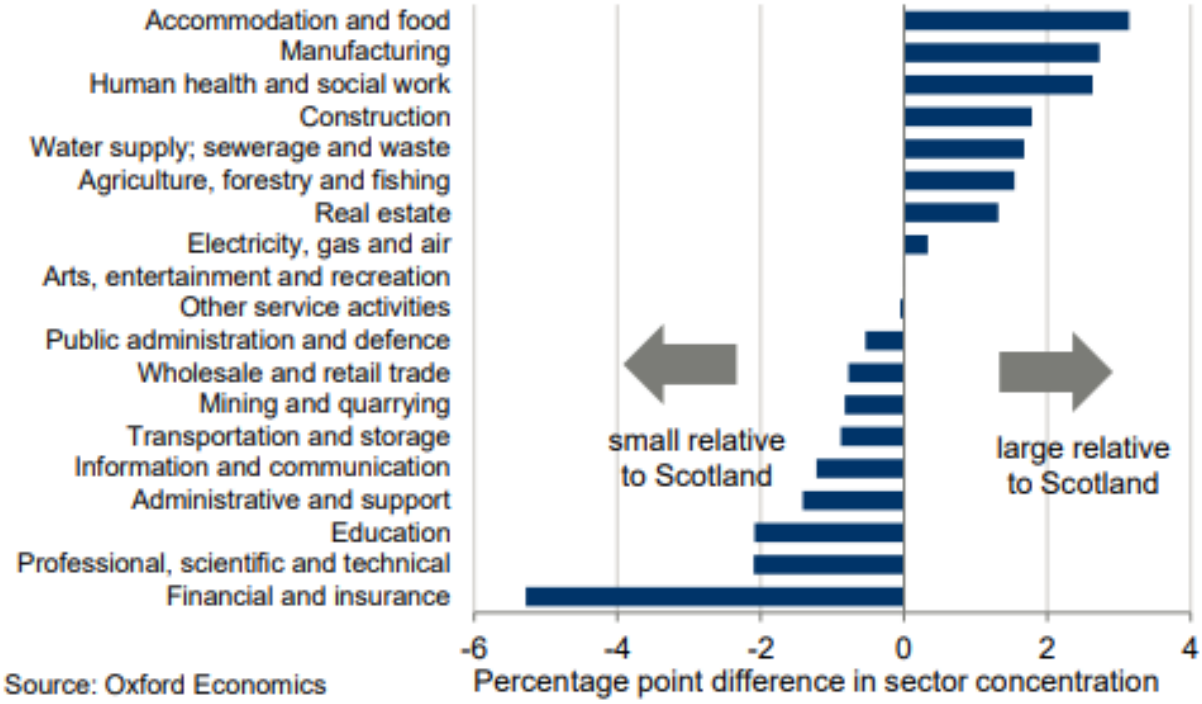
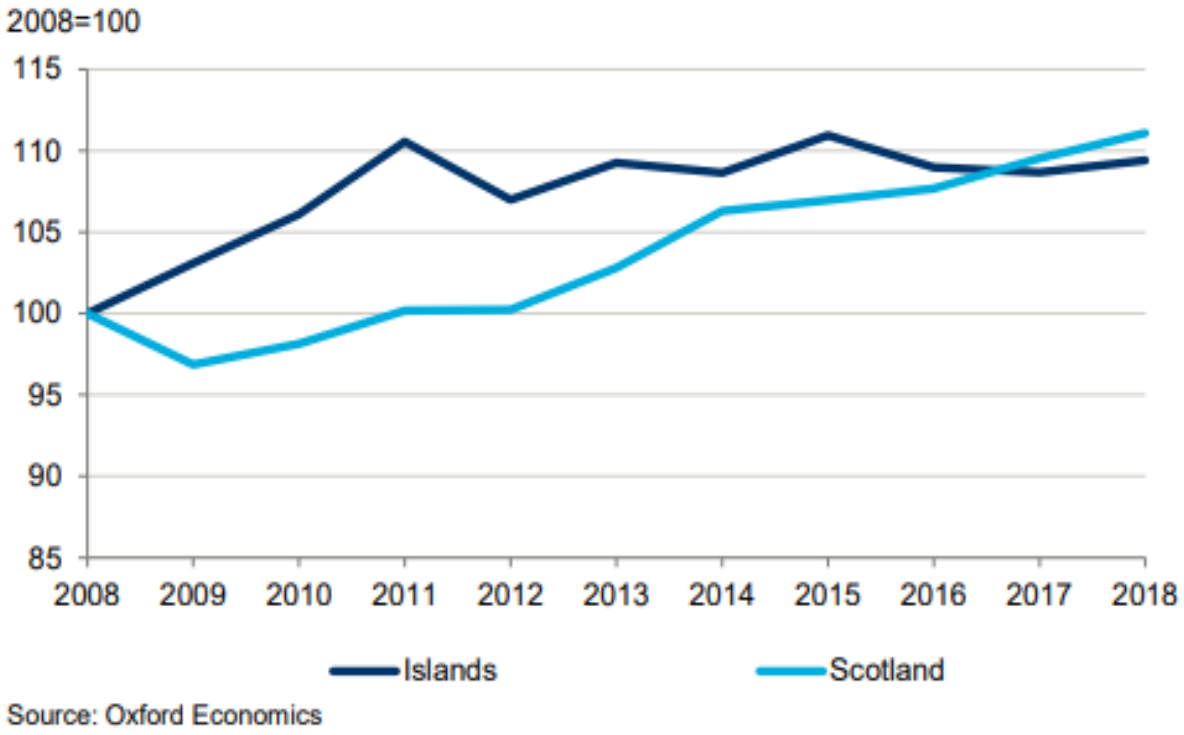


Figure 12: Sector GVA Share Highland Council vs Scotland 2018

The economies of Eilean Siar, Orkney Islands and Shetland Islands tend not to mirror overall economic trends at a national level. As shown in Figure 13, the Islands are the only region that did not see a contraction in economic output during the 2008-09 recession. However, overall GVA on the Islands' has fallen in 4 out of 7 years since 2011, despite steady growth across Scotland[34].

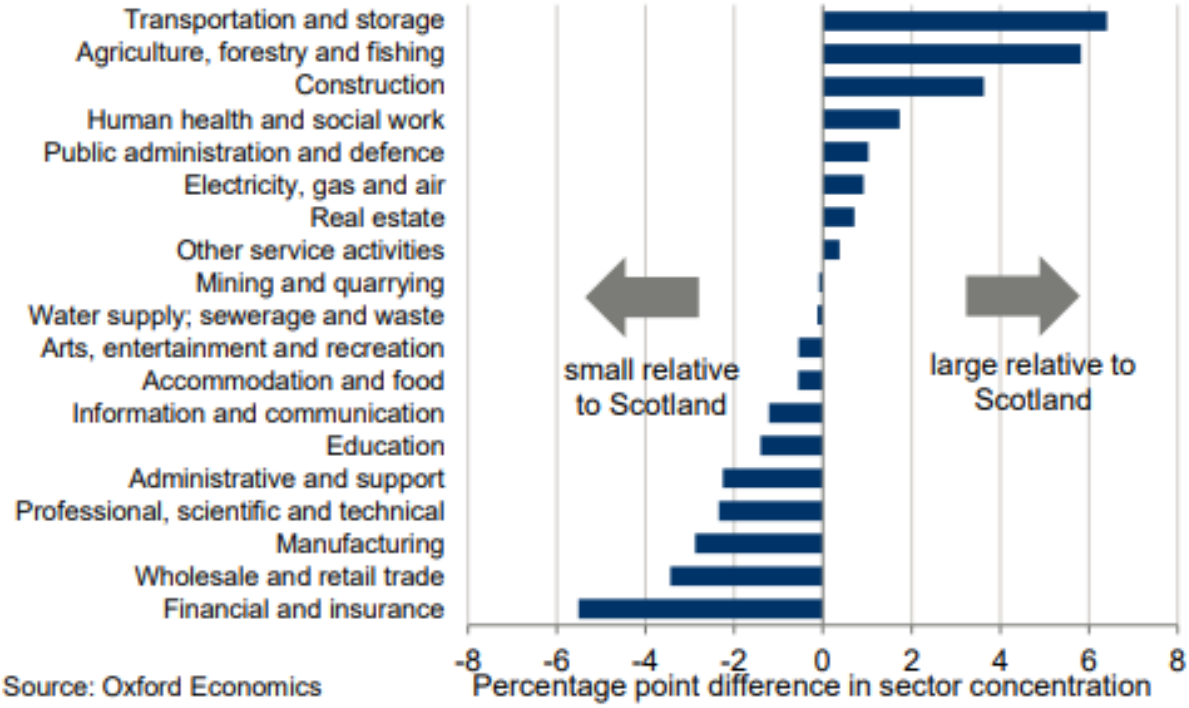
The Orkney Islands have seen employment growth of 1.3%, almost double the national average of 0.7% whilst Eilean Siar has experienced a nominal workplace employment expansion of 0.1%.

[34] Oxford Economics, International Research on Regional Economies - Implications for Delivering Inclusive Growth in Scotland, May 2019, https://www.scottishfuturestrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf



Source: Oxford Economics

Figure 13: Index of GVA, Islands and Scotland, 2008-2018



Source: Oxford Economics

Figure 14 shows Transportation & Storage is the Island's second largest sector, accounting for 11% GVA, over twice the Scottish equivalent[34]. Agriculture, Forestry & Fishing is also well represented across the Islands (including Shetland); in contrast Financial & Insurance and Wholesale & Retail Trade – 2 of Scotland's larger and most successful sectors, are both under-represented on the islands.

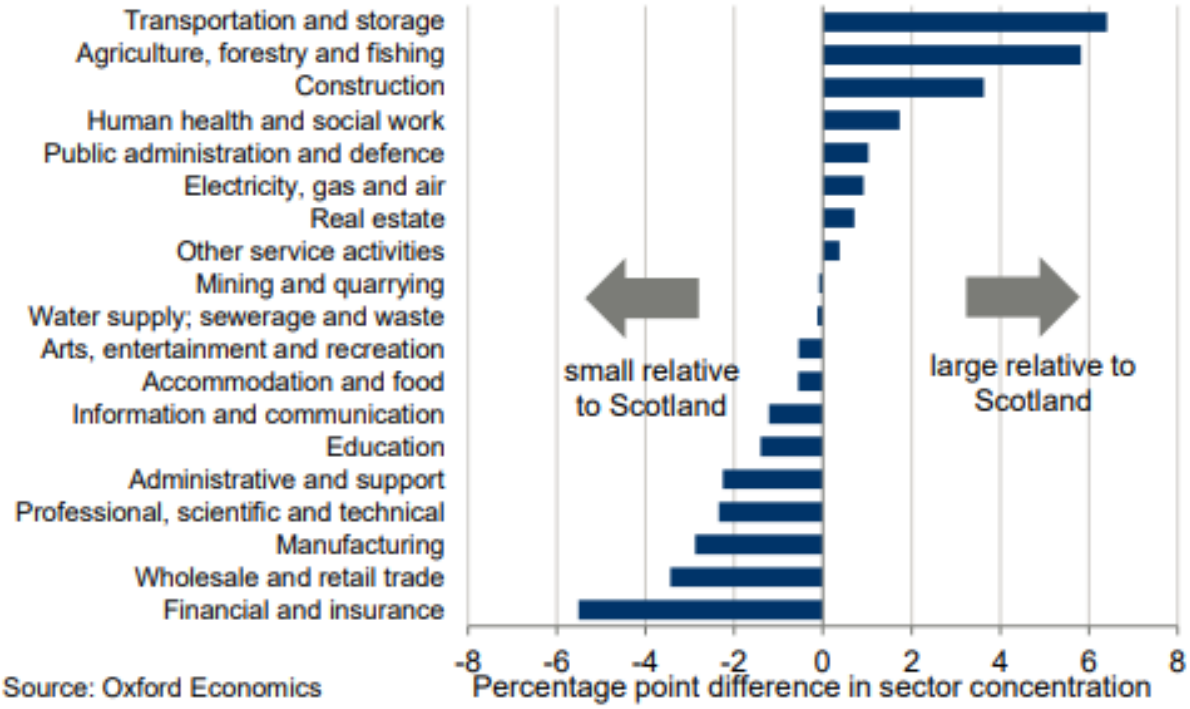
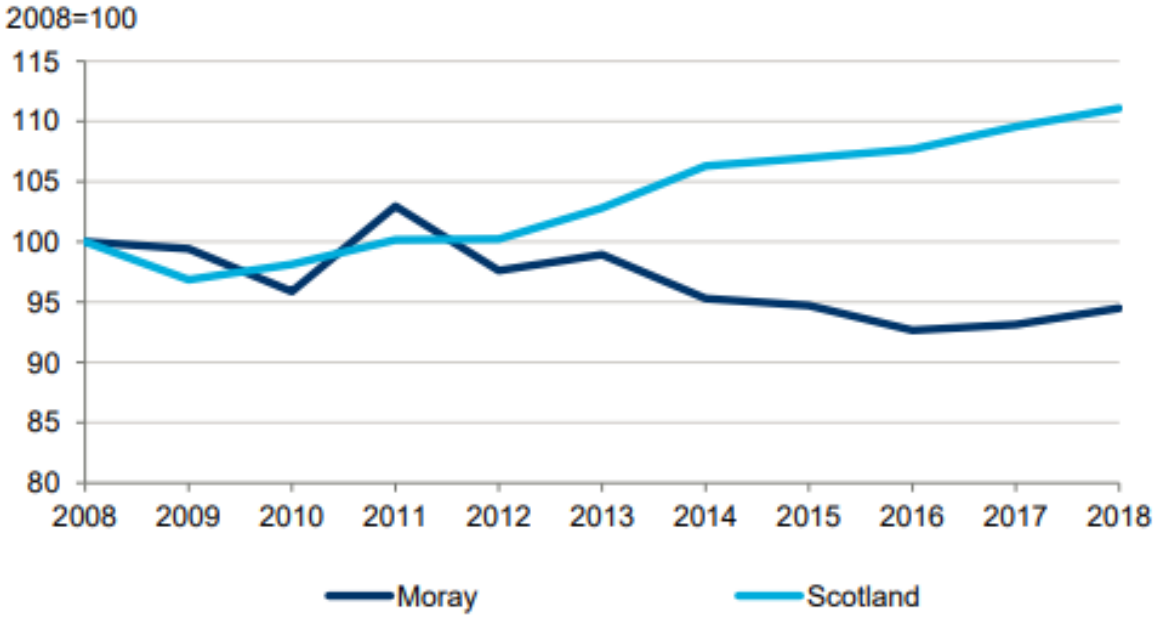


Figure 14: Sector GVA Share Islands vs Scotland 2018

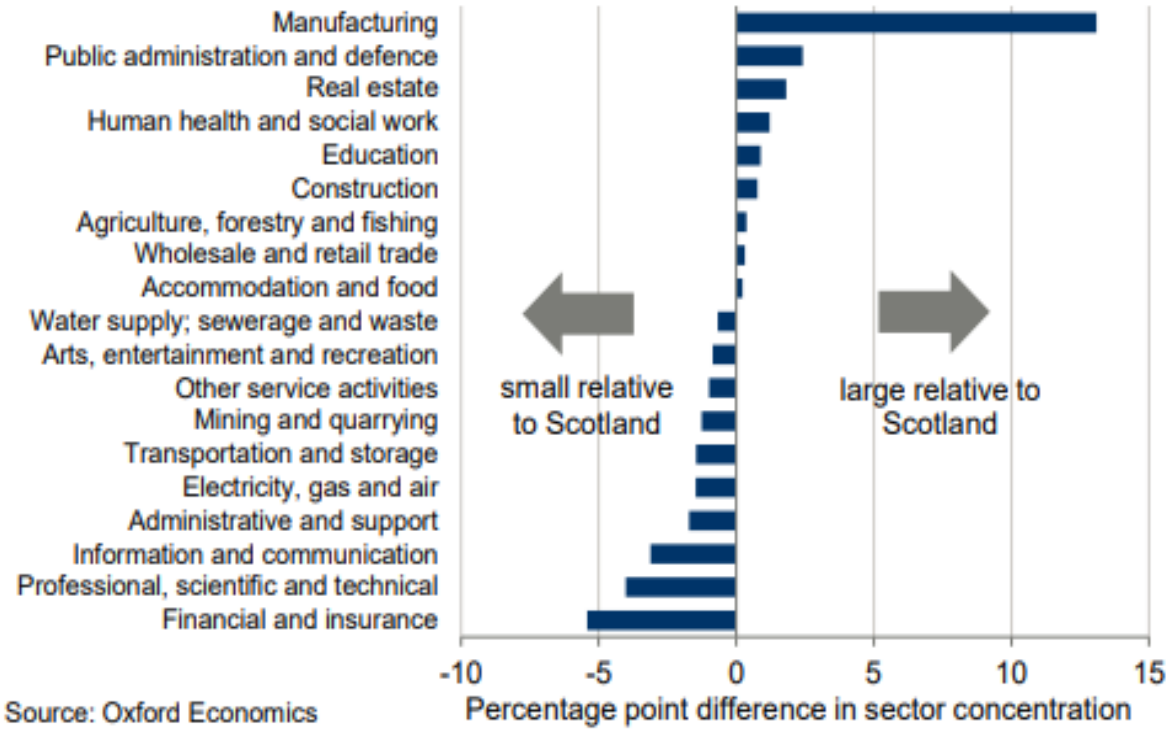
Moray Council's economic performance has diverged from the national trend over the previous decade, as shown in Figure 15[35]. While Scotland has experienced fairly consistent growth from 2011 onwards, Moray Council's economy contracted until 2016. Whilst there has been an increase in the percentage of GVA output since between 2016 and 2018, overall, in the decade between 2008 and 2018, the economy of the region has contracted.

[35] Oxford Economics, International Research on Regional Economies - Implications for Delivering Inclusive Growth in Scotland, May 2019, https://www.scottishfuturestrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf



Source: Oxford Economics

Figure 15: Index of GVA, Moray and Scotland, 2008-2018



Source: Oxford Economics

Figure 16: Sector GVA Share Moray and Scotland, 2008-2018

Figure 16 shows that in 2018, GVA per head for the Highlands and Islands region (£25,808) is slightly lower than the Scottish average (£26,134). Orkney had the highest GVA per head in the region at £28,571, followed by Highland at £27,265, both higher than

the Scottish average. Na h-Eileanan an Iar had the lowest GVA per head in the region at £21,133, followed by Moray at £22,885, both lower than the Scottish average[36].

Figure 17, overleaf, shows within the Highlands and Islands region, the largest industry employer (in 2018) was Human Health & Social Work, which employed 15.5% of the regional working population, followed by Wholesale & Retail Trade at 13.3%. Mining and quarrying employed the lowest percentage of the working population (0.4%) within the region[37].

[36] ONS, Regional gross value added (balanced) by industry: local authorities by NUTS1 region: UKM Scotland current prices, 2018, https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedbalancedlocalauthoritiesbynuts1region

[37] ONS, NOMIS Business Register and Employment Survey (BRES), 2018, https://www.ons.gov.uk/surveys/informationforbusinesses/businesssurveys/businessregisterandemploymentsurvey

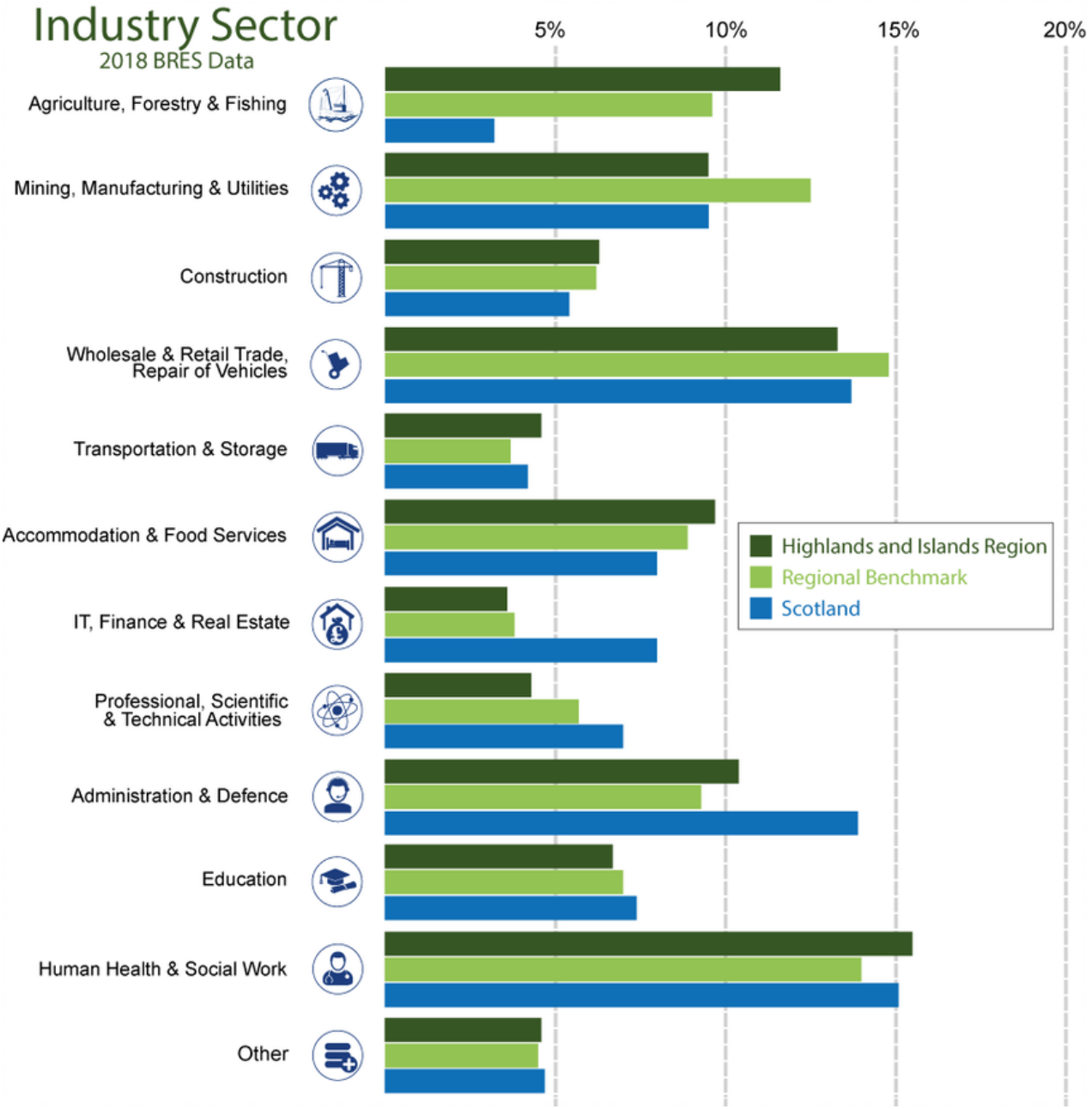


Figure 17: Percentage of People Working in Each Industry Sector for Highlands and Islands Region

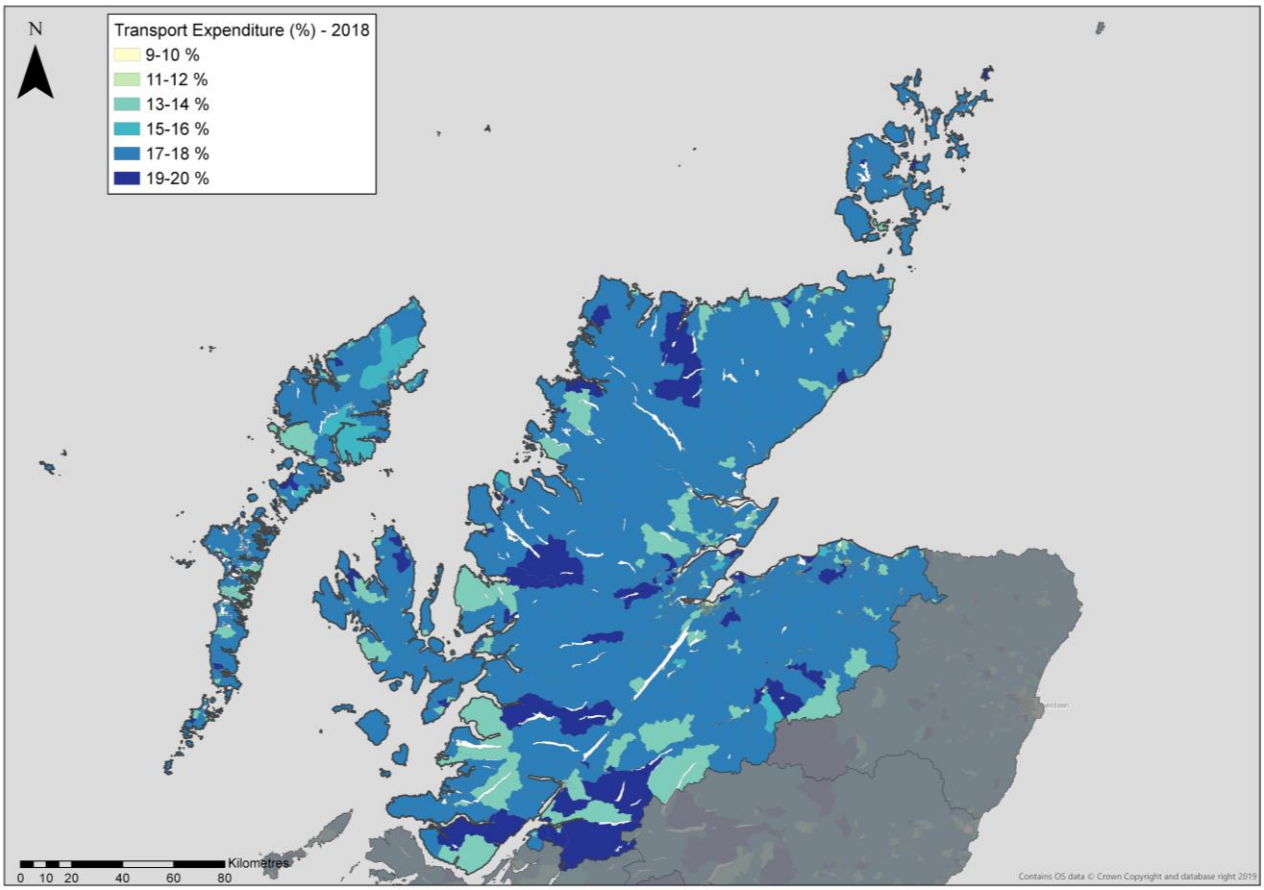


Figure 18: Transport Expenditure (%) relative to Household Budgets[38]

(Click image to enlarge figure)

Despite the lower proportion of people of working age in the region, economic activity is high at 80.9%; 3.4 percentage points higher than the national average. Earnings however are lower, with the average annual pay (£24,809) below the national average of £28,955. Orkney has the lowest average annual pay at £23,950[39]. In terms of transport expenditure[40], the rural nature of the region and long travel distances mean that transport costs can comprise a large proportion of income for residents in the region, shown in Figure 18. Linked to this, there are large parts of the region which experience transport

[38] Transport Expenditure is a calculation based on the average weekly household expenditure dedicated to transport as a percentage of the total average weekly household expenditure. ONS, Expenditure, FYE 2018, https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure

[39] ONS, NOMIS Official Labour Market Statistics, 2019, https://www.nomisweb.co.uk/

[40] Transport Expenditure is a calculation based on the average weekly household expenditure dedicated to transport as a percentage of the total average weekly household expenditure. ONS, Expenditure, FYE 2018, https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure

poverty[41]; as 58% of data zones in the region are classified as being at high risk of transport poverty, which is considerably higher than the national figure (38%). There are also a number of individuals within the region that have multiple occupations, and require to travel between their workplaces, which increases the percentage of earnings spent on transport. A more detailed consideration of the impact of high transport costs in the region is presented in Section 3.

2.3.6. Access to Employment

Figure 19 illustrates the accessibility in the region to key employment centres by public transport on a typical weekday morning. For the purpose of the analysis, the top 10 employment locations within the region were identified using BRES data. These sites are located in Inverness, Elgin, Dingwall, Fort William, Caithness and Stornoway. The image indicates that the majority of the region cannot access a key employment centre within 2 hours travel time on public transport on a typical weekday between 06:00 and 10:00. However, those living within the vicinity of the road or rail network and close to Thurso, Stornoway, Fort William, Inverness and Elgin can access the key employment centres by public transport within the two-hour threshold.

What is evident from the figure is the lack of access from the southern half of Eilean Siar with residents south of Tarbet on the Isle of Harris having no access to Stornoway by public transport within the time threshold. There are also significant areas in the North and West Highlands that have no access to key centres of employment by public transport; note no access is shown for Orkney as Kirkwall is not one of the top 10 employment centres in the region.

Around Inverness and along the A96 corridor, access to key employment centres by public transport is significantly better, as shown in Figure 20 overleaf.

[41] Transport Poverty analysis is based on research which uses data on household income, car availability and access to the public transport network. Based on Sustrans, Transport Poverty in Scotland, 2016, https://www.sustrans.org.uk/media/2880/transport_poverty_in_scotland_2016.pdf

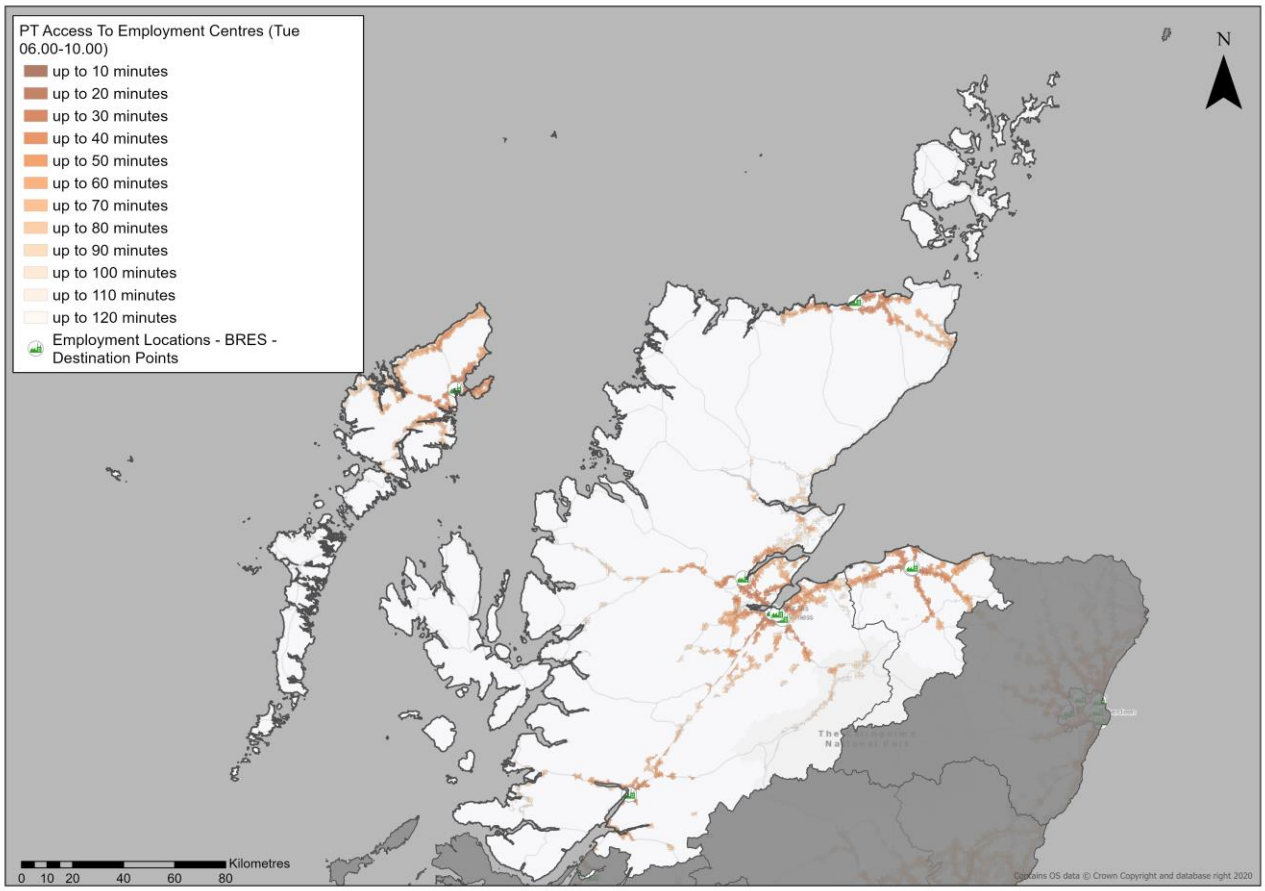


Figure 19: Access to Key Employment Centres by Public Transport

(Click image to enlarge figure)

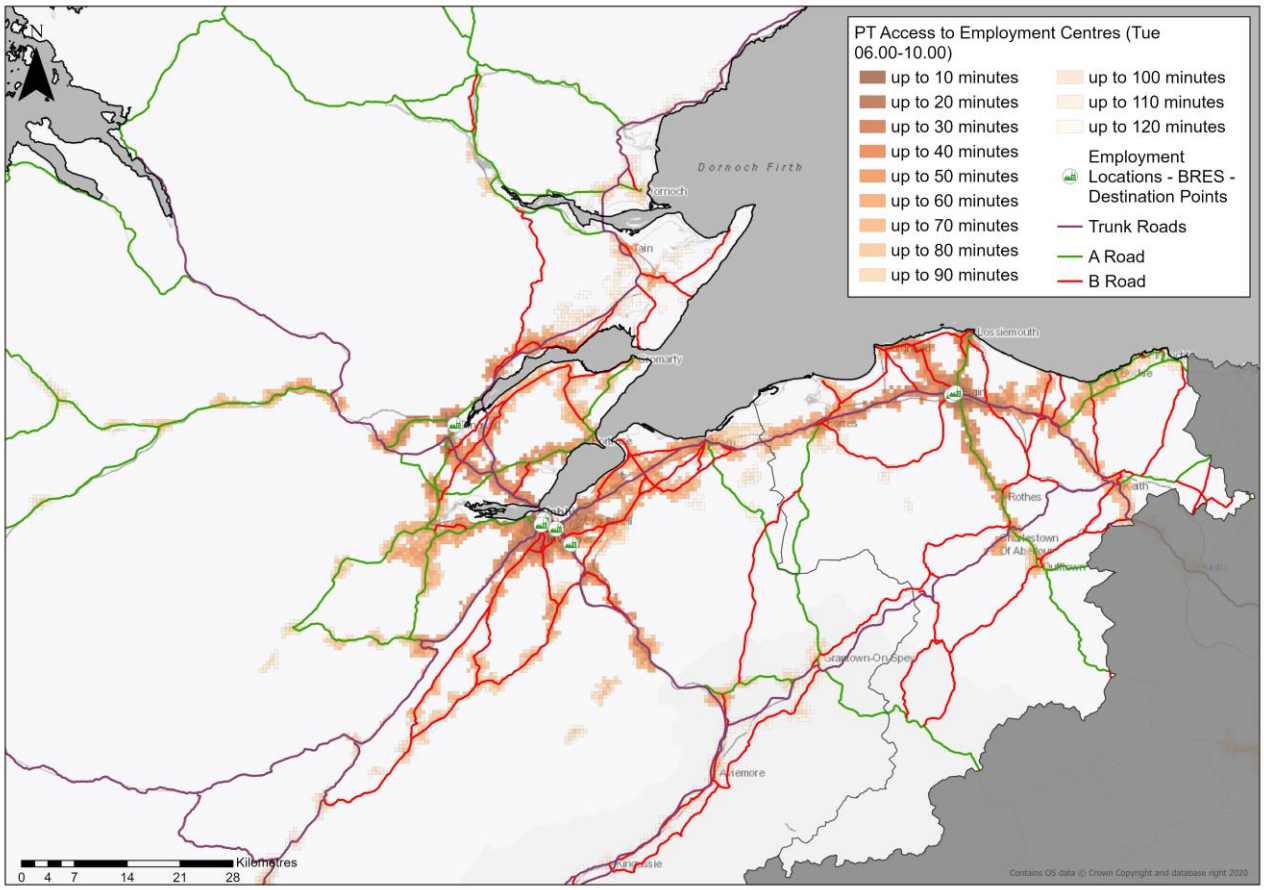


Figure 20: Access to Employment Centres by Public Transport in Central Highland and Moray

(Click image to enlarge figure)

2.3.7. Deprivation

The Scottish Index of Multiple Deprivation (SIMD) further demonstrates the socio-economic issues experienced in the region. As shown in Figure 21 overleaf, Eilean Siar and areas in the north of the Highlands show higher levels of deprivation compared to other data zones in the region. There are fewer healthcare services that are generally available in major settlements in the North West Highlands and therefore access to healthcare and services is limited, contributing to the low SIMD score for accessibility. However, accessibility is not the only factor of deprivation as there are deprived data zones found within Elgin and Inverness as shown in Figure 22 and Figure 23[42], respectively.

[42] 2020 SIMD Data has been used to prepare this report

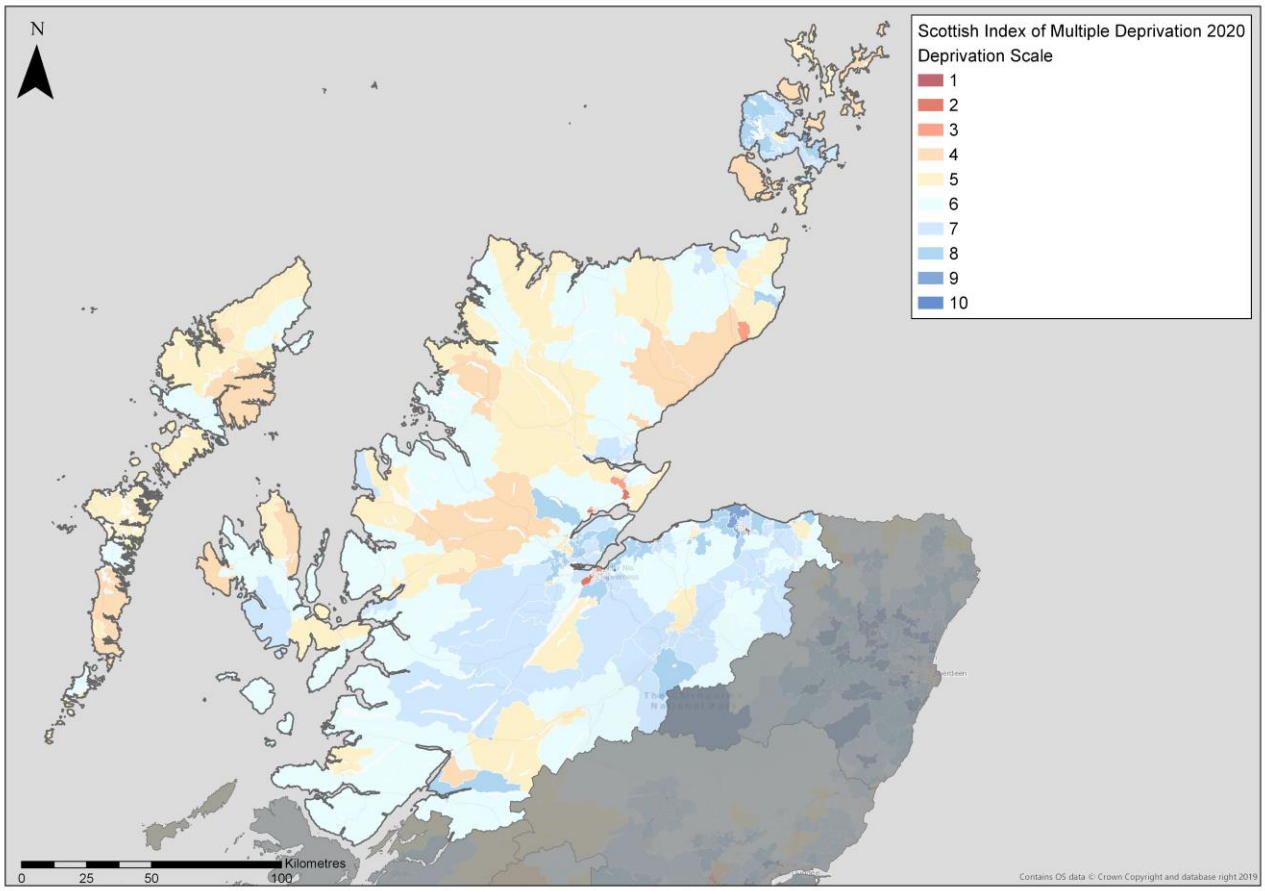


Figure 21: Highland and Islands Region – Scottish Index of Multiple Deprivation[43]

(Click image to enlarge figure)

[43] The SIMD Deprivation Scale is measured from 1 (Most Deprived) to 10 (Least Deprived)

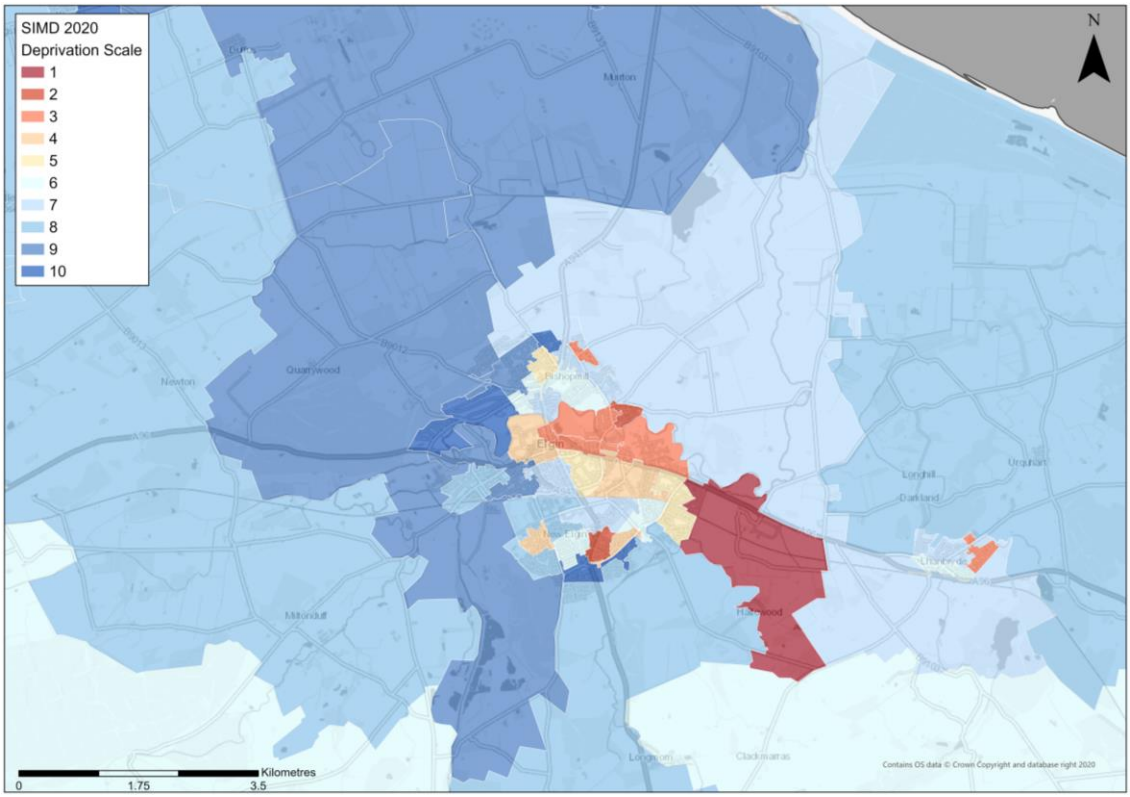


Figure 22: Elgin Overall SIMD[43]

(Click image to enlarge figure)

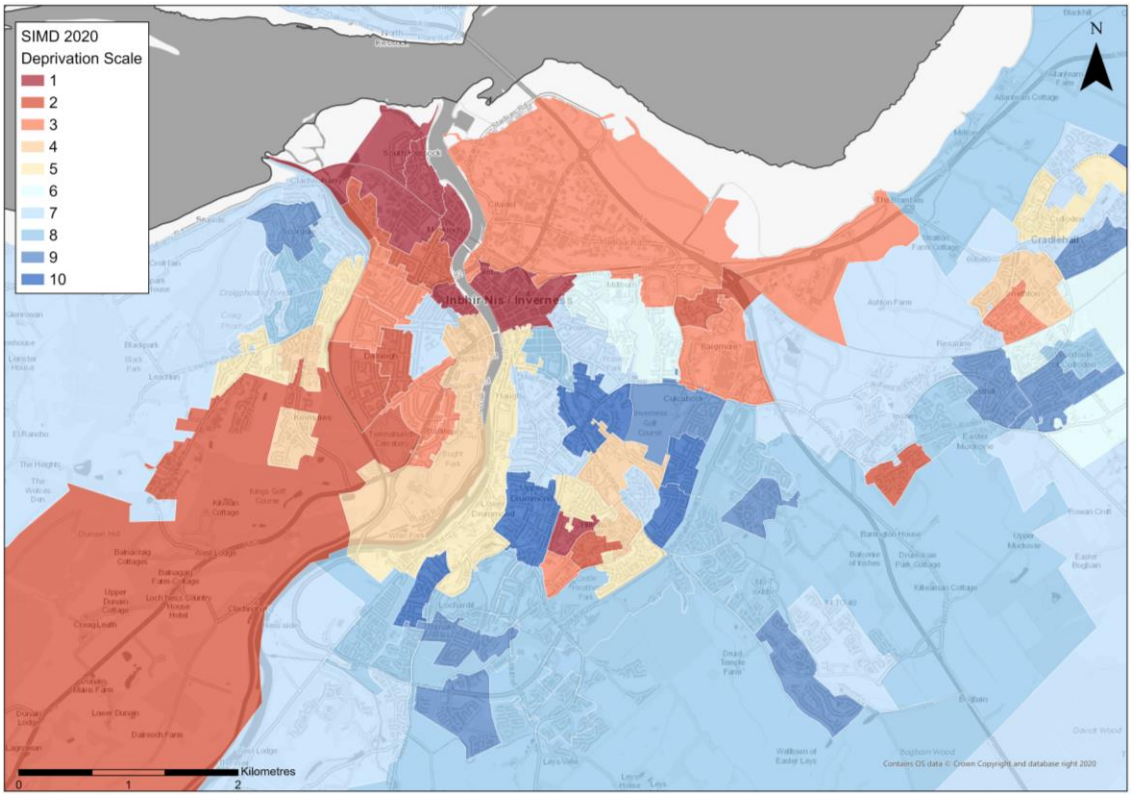


Figure 23: Inverness Overall SIMD[43]

(Click image to enlarge figure)

2.3.8. Health

In terms of health, the proportion of adults in the Highlands and Islands region with a long term physical or mental health condition is generally higher than the Scottish average of 30%. As shown in Figure 24, all regions aside from Na h-Eileanan Siar recorded a higher proportion than Scotland, in particular Orkney, where 36% of the area's residents experienced a long term physical or mental condition[44].

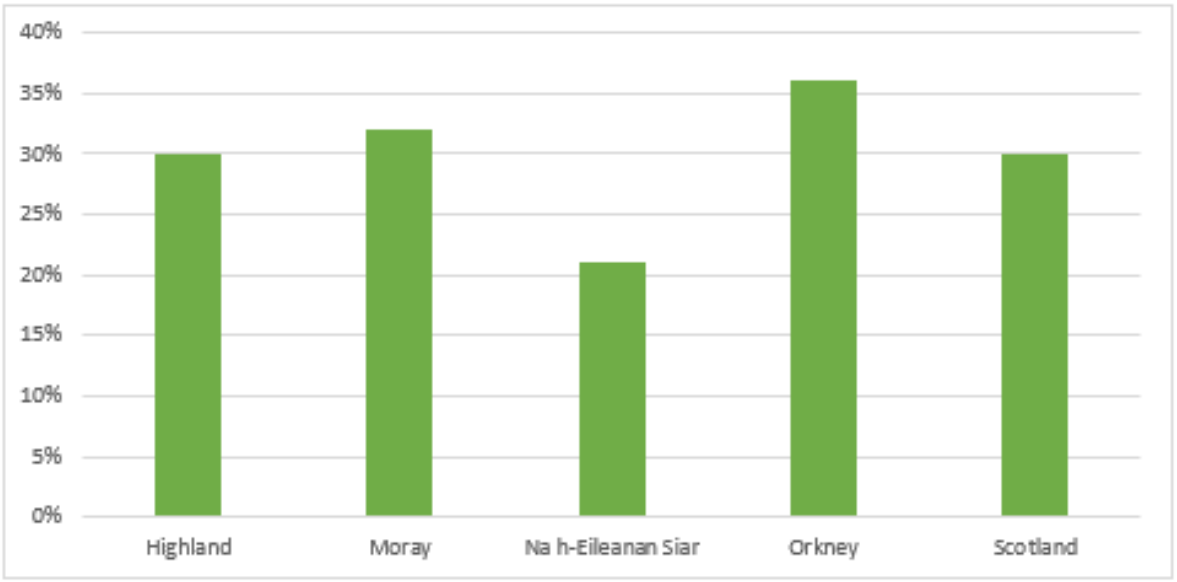


Figure 24: Proportion of Population with a Long Term Physical or Mental Health Condition for the Highlands and Islands Region

[44] Scottish Government, Scottish Household Survey, 2018, https://www.gov.scot/publications/scottish-household-survey-key-findings-2018/

2.4. Environmental Context

Within the Highlands and Islands region, there are many areas classified as environmentally sensitive, with varying levels of statutory protection. Environmental designations within the region include the following biodiversity, landscape and heritage designations, which fall either wholly or partly within the region:

- 481 Sites of Special Scientific Interest (SSSI)
- 81 Special Protection Areas (SPA)
- 116 Special Areas of Conservation (SAC)
- 19 Ramsar sites
- 14 Nature Conservation Marine Protected Areas
- 1 Demonstration and Research Marine Protected Area (MPA)
- 16 Marine Consultation Areas
- 22 National Nature Reserves (NNR)
- 5 Local Nature Reserves (LNR)
- 35 Royal Society for the Protection of Birds (RSPB) Reserves
- 20 National Scenic Areas (NSA)
- 1 National Park (The Cairngorms National Park is within the southern area of the region)
- 58 Gardens and designed landscapes
- 58 Conservation Areas
- 2 World Heritage Sites
- 10 Battlefield Sites
- 1,934 Scheduled Monuments
- 4 Heritage Marine Protected Areas (MPA).

An environmental constraints mapping exercise has been undertaken, as presented in Figure 25[45]. As can be seen, the designated environmental sites are located throughout the region, with particularly high concentrations on the coastal areas and the islands.

In addition, the region contains a significant number of historic assets, including two designated World Heritage Sites (St. Kilda in the Hebridean Islands and The Heart of Neolithic Orkney) and 7,362 Category A-C Listed buildings; with high concentrations of listed buildings in and around Inverness and on the north-east coast.

[45] Contains SNH information licensed under the Open Government Licence v3.0.

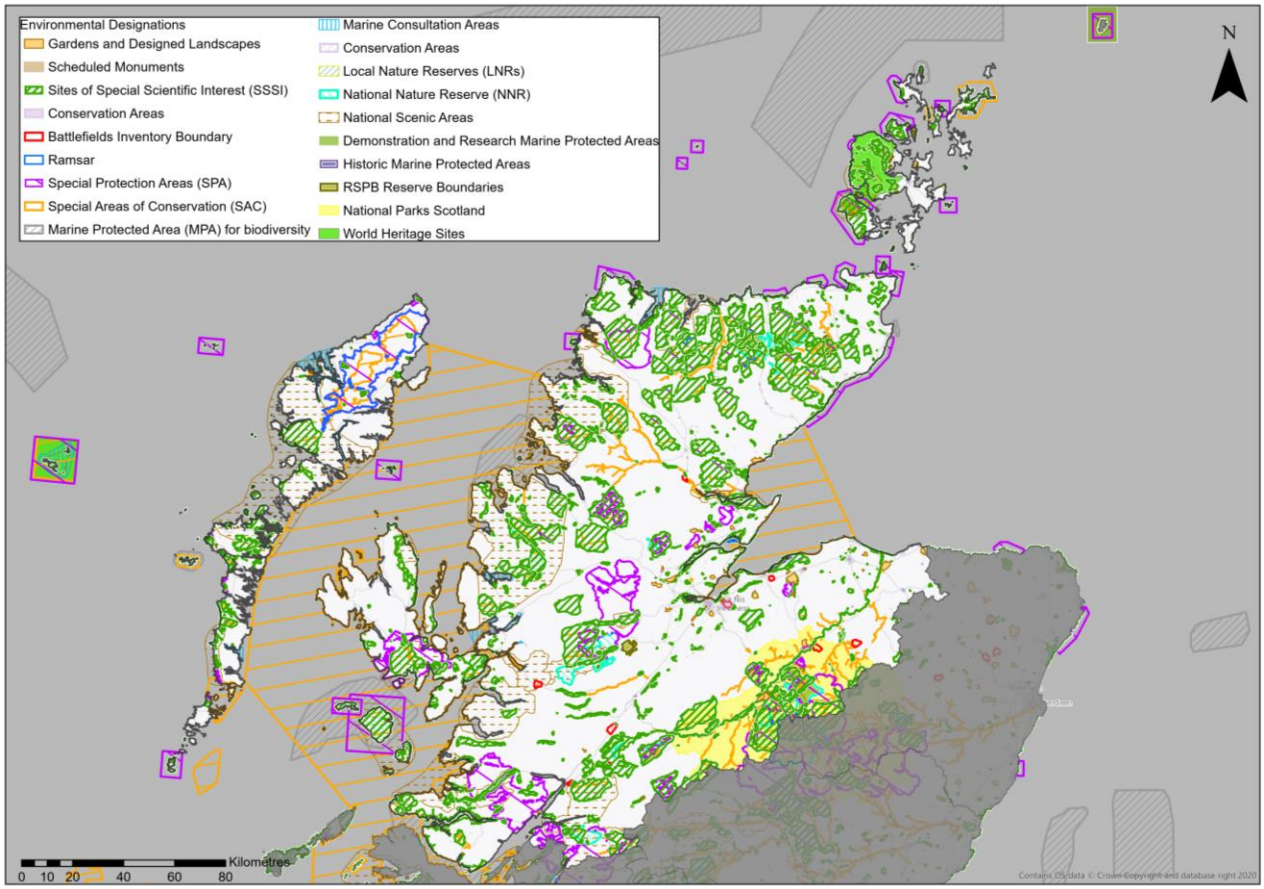


Figure 25: Environmental Designations for Highlands and Islands Region

(Click image to enlarge figure)

Scotland's noise map illustrates noise exposure from rail, road, air traffic and industry sources in response to the European Parliament and Council Directive for Assessment and Management of Environmental Noise 2002/49/EC. Scotland's strategic noise mapping represents step one in the process for managing environmental noise; with step two requiring competent authorities to prepare noise action plans in response. The latest mapping (Round 3 data[46]) mapped the following noise sources throughout Scotland: *"roads with more than 3,000,000 (three million) vehicle passages per year; major railways with more than 30,000 (thirty thousand) train passages a year; major airports with more than 50,000 (fifty thousand) movements; and transport sources and industry in qualifying agglomerations (urban areas with populations in excess of 100,000 (two hundred and fifty thousand): Aberdeen, Dundee, Edinburgh and Glasgow)"*[47].

Figure 26 illustrates the noise levels above 55 decibels (dB)[48] at specific points from modelled noise sources for the region, based on consolidated noise sources for the average day (Lday), evening (Levening) and night (Lnight) metric (referred to as Lden). 55

[46] The noise mapping data is reviewed on a five year rolling programme. Round 3 is the latest 5 year update.

[47] Scottish Government, Scotland's Noise, 2017, https://noise.environment.gov.scot/index.html

[48] Only modelled noise levels above 55 dB have been included on the figure, in order to depict those noise levels with the greatest potential to cause annoyance to the population.

dB Lden is the EU indicator threshold for noise exposure defined in the Environmental Noise Directive (Directive 2002/49/EC)[49]. Figure 26 shows limited modelled noise sources in the region due to its rural nature, with the only notable noise levels located in the east of the region, primarily associated with the the strategic road corridors into Inverness (i.e. the A82, A9 and A96); together with the rail corridor through Inverness, as shown in Figure 27. Noise emissions from airports and industry have not been modelled for this area as they do not meet the criteria set out above.

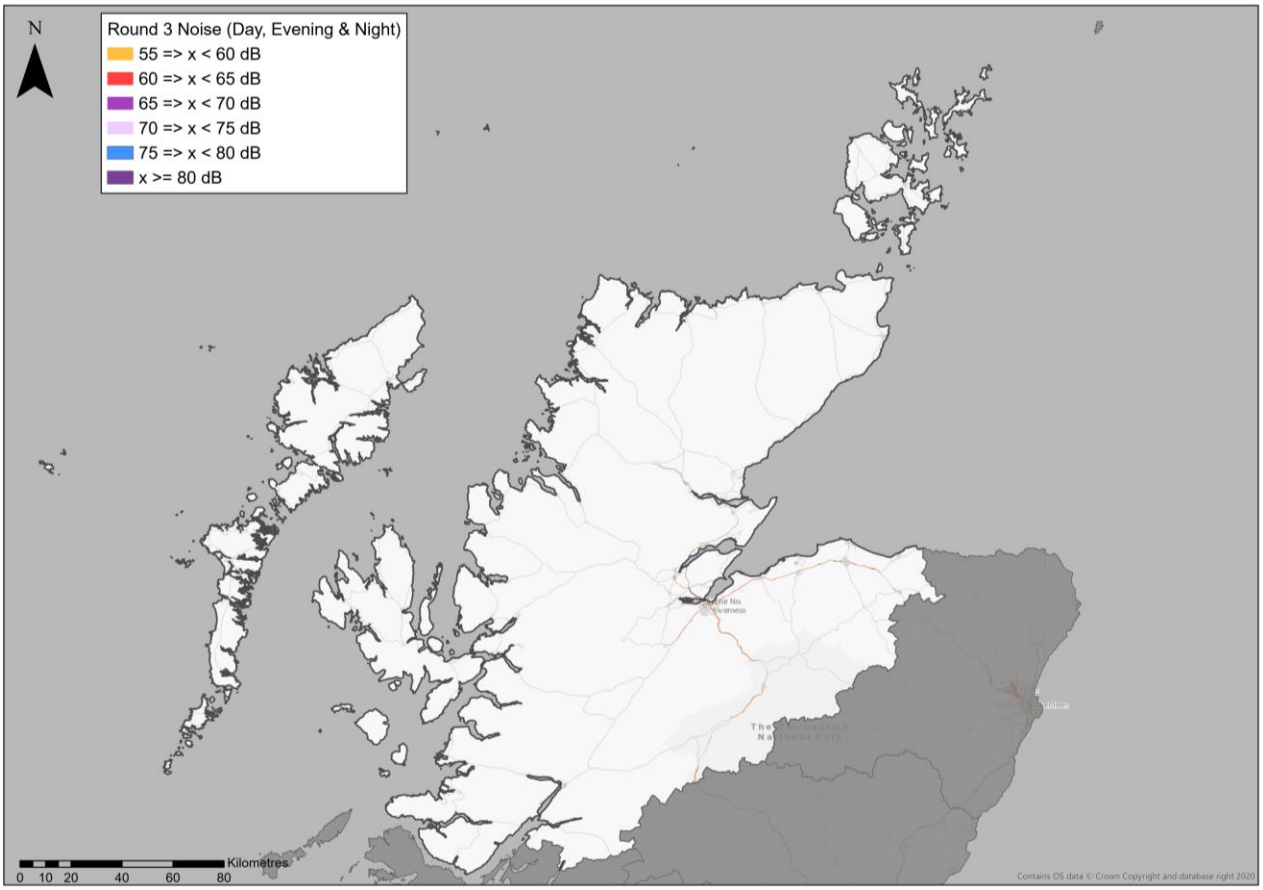


Figure 26: Noise Mapping for Highlands and Islands region[50]

(Click image to enlarge figure)

[49]The European Noise Directive (END), Directive 2002/49/EC of the European Parliament and of the Council https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002L0049&from=EN

[50] Scottish Government, Scotland's Noise, 2017, https://noise.environment.gov.scot/index.html

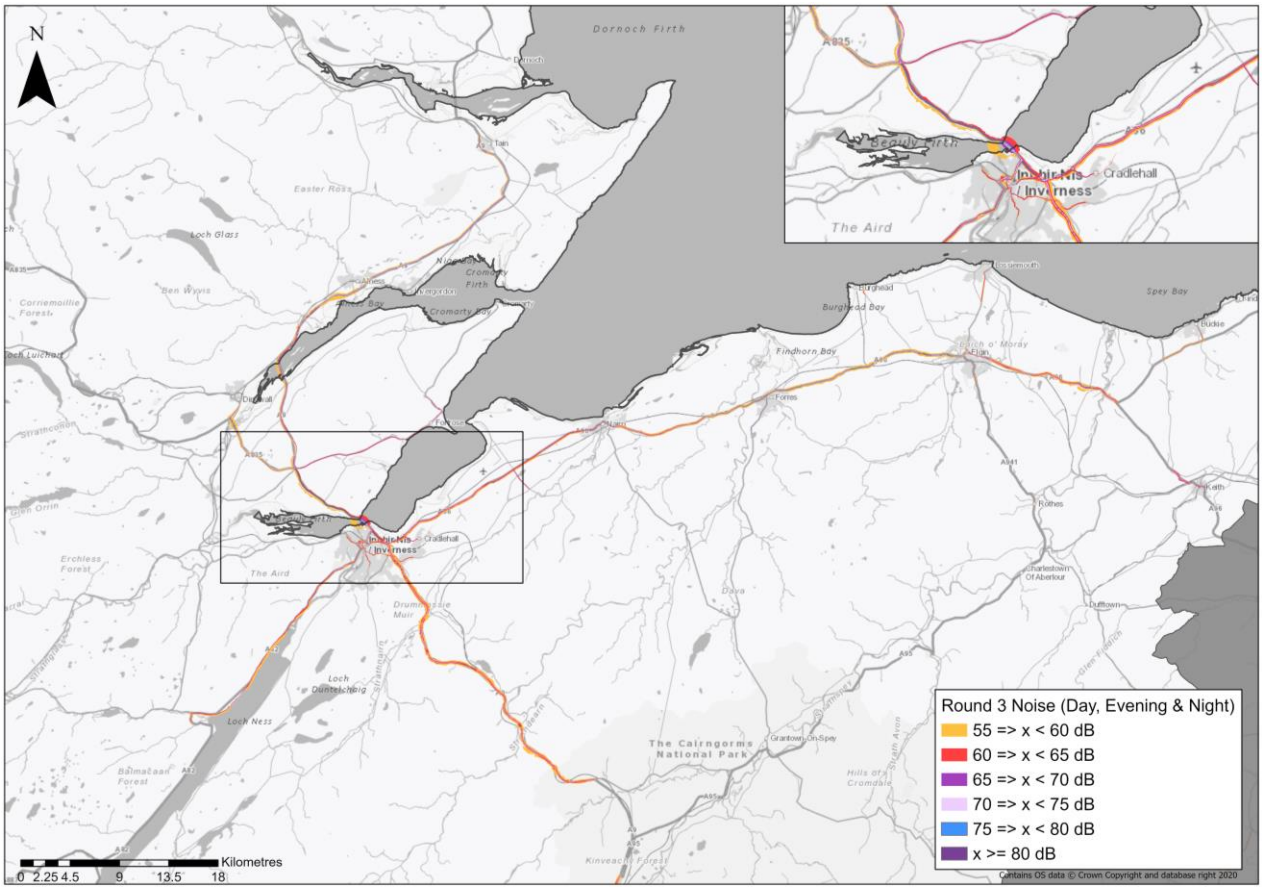


Figure 27: Noise Mapping around Inverness

(Click image to enlarge figure)

The region holds the UK's highest proportion of freshwater resources and there has been considerable hydro-electric development of watercourses in the region. There are a total of 1,370 surface water features in the Highlands and Islands region, which includes rivers, lochs and coastal waterbodies.

The Scottish Environmental Protection Agency (SEPA) flood mapping[51] (Figure 28) identifies flood risk from river and coastal flooding at medium (1 in 200 year) and high (1 in 10 year) likelihood of flooding within the region.

There are high number of areas at risk of coastal flooding throughout the region. Mainland settlements at greatest risk of coastal flooding include Inverness, Nairn, Cromarty, Golspie, Thurso, Lochinver and Fort William, in addition to Wick Airport. Coastal island communities are also affected including the northern coast of Isle of Skye and communities within the Outer Hebrides and Orkney.

Areas at the highest risk of river flooding within the region is from rivers within the catchments of River Thurso, River Alness, River Ewe, River Peffery and Mill Lade (Wick Coastal). The main receptors at risk of river flooding in region include the settlements of Thurso, Alness, Kinlochewe, Wick and Dingwall and the surrounding rural areas.

[51] SEPA (2021) https://map.sepa.org.uk/floodmap/map.htm, accessed 20/01/21

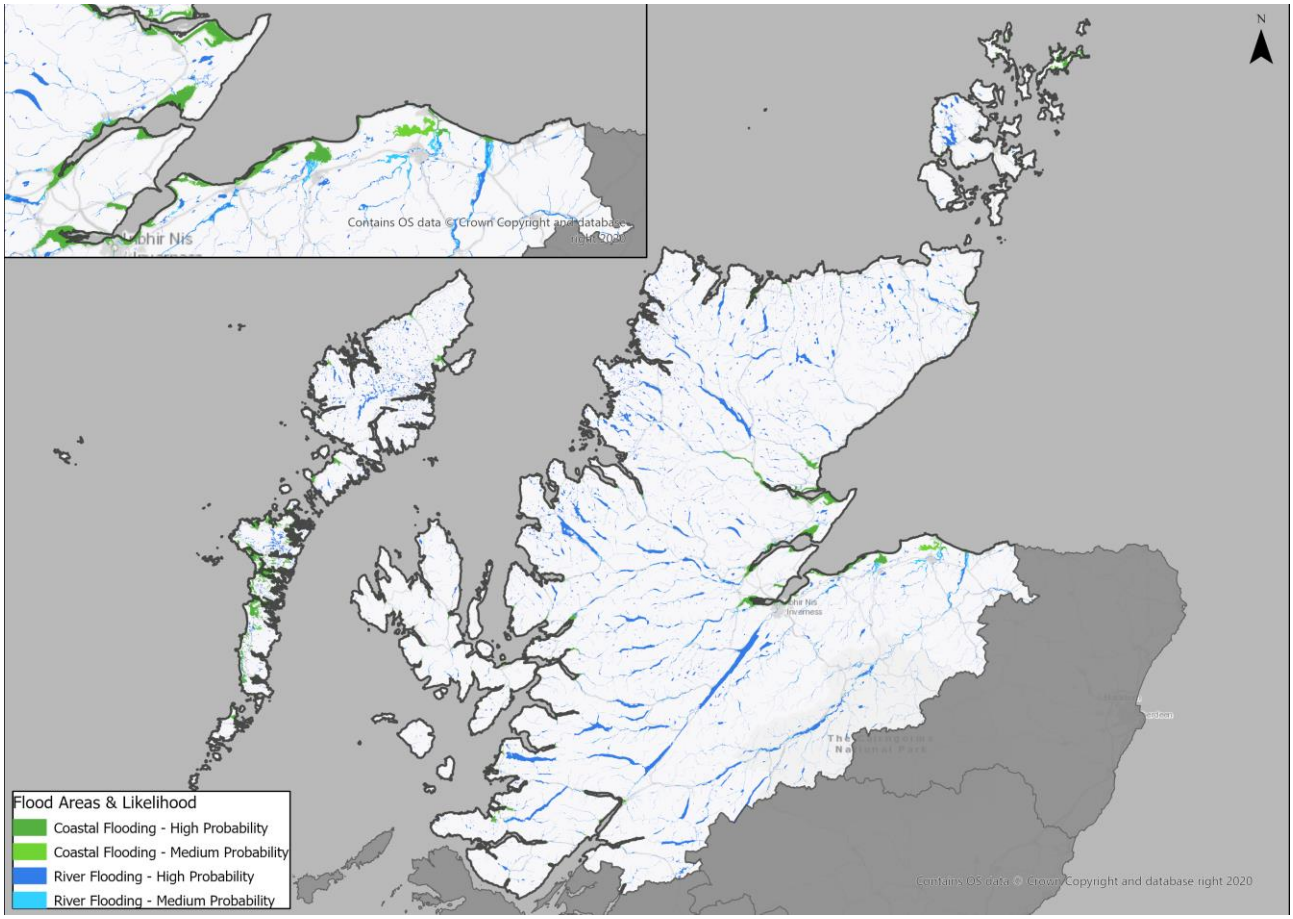


Figure 28: Flood Mapping for Highlands and Islands Region

(Click image to enlarge figure)

Buried peats are an important carbon sink. More than 20% of Scotland is covered by peat soil; with soils representing over half of Scotland's terrestrial store of carbon[52]. The region has significant peatland reserves, particularly in the north and west of the region. Figure 29 illustrates the distribution of carbon and peatland classes for soils across the region. Classes 1 and 2 represent nationally important carbon-rich soils, deep peat and priority peatland habitat; Class 3 represents occasional peatland habitats with carbon-rich soils and some areas of deep peat; Class 4 represents predominantly mineral soils, unlikely to include carbon-rich soils; and Class 5 represents areas where no peatland habitat is recorded however soils are carbon rich and deep peat.[53]

[52] NatureScot, Managing nature for carbon capture, 2020, https://www.nature.scot/professional-advice/land-and-sea-management/carbon-management/managing-nature-carbon-capture

[53] Scottish Government, Scotland's Soils, 2016, https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/

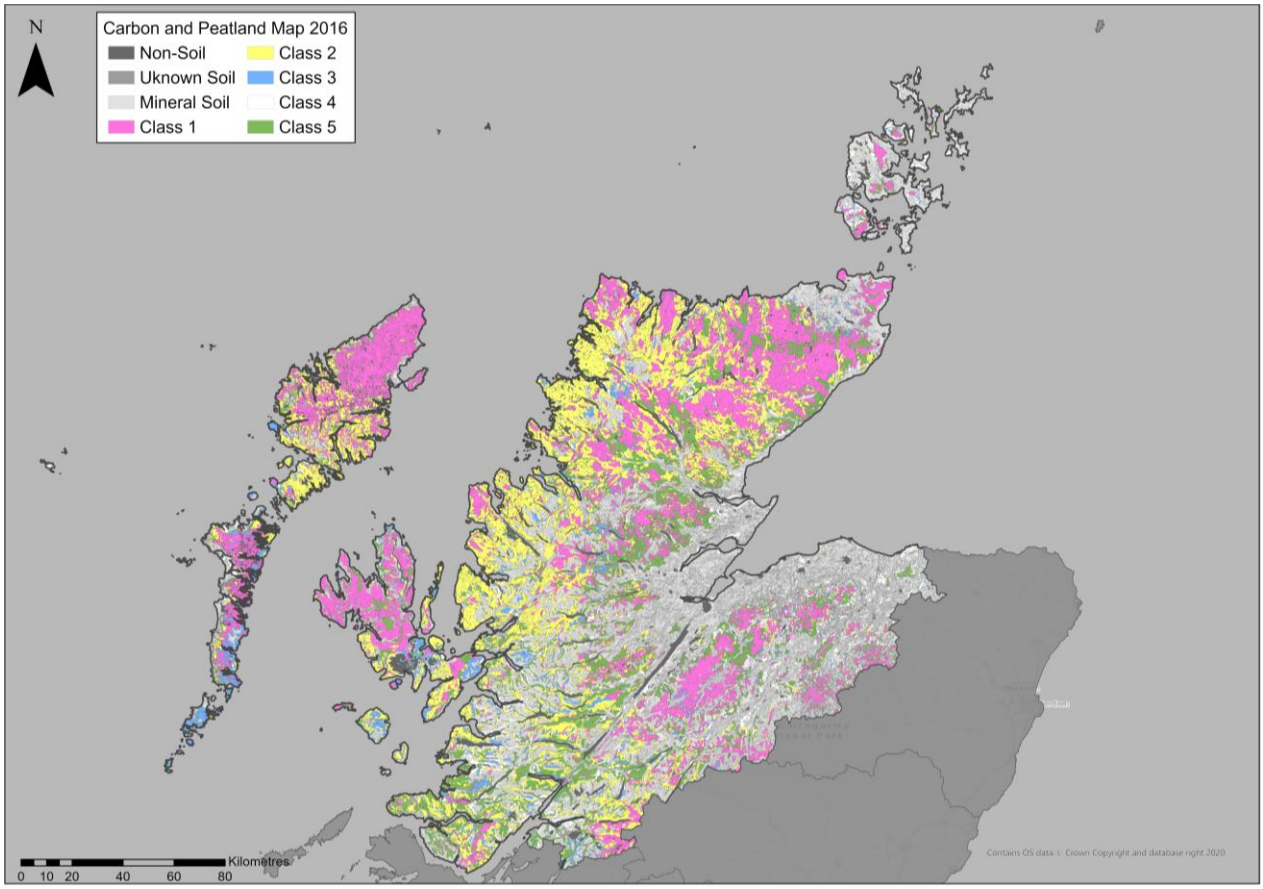


Figure 29: Carbon and Peatland Map for Highlands and Islands region[54]

(Click image to enlarge figure)

Due to the rural nature of the region, air quality is not considered an environmental issue, except in Inverness city centre, where a short area covering sections of Academy Street, Queensgate and Strothers Lanes[55] is the only declared Air Quality Management Area (AQMA) within the Highlands and Islands region.

In 2018[56], The Highland Council recorded higher CO2 emissions from transport per capita relative to the other authority areas within the region; whilst Orkney Islands recorded the lowest per capita in the region, as shown in Table 2. Within the region, the highest proportion of Scotland's total CO2 emissions from transport were from the Highland Council authority area in 2018. The Orkney Islands authority area recorded the lowest proportion of emissions from transport in the region.

Table 2 shows that the total CO_2 emissions from transport within the Highlands and Islands region equated to 7.8% of Scotland's total transport emissions overall.

[54] Scottish Government, Scotland's Soils, 2016, https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/
[55] DEFRA, AQMA Details, https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1580
[56] UK Government, UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018, 2020, https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018

Table 2: CO_2 Emissions Per Capita and Percentage of Transport-Related Emissions[57]

Area	Per Capita Emissions, 2017 (t) CO_2	% of total emissions from transport
Eilean Siar	1.8	0.4%
The Highland Council	2.6	5.6%
The Moray Council	1.7	1.5%
Orkney Islands	1.4	0.3%
Highlands and Islands region	2.3	7.8%
Scotland average	2.0	-

2.5. Transport Context

Figure 31 shows the key transport networks in the region, including the National Cycle Network (NCN), rail lines and stations, and the trunk road network, as well as airports and ferry terminals. It shows that the Highlands and Islands region has a wide-ranging transport network with airports and ferry connections to and between the islands.

[57] UK Government, UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018, 2020, https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018

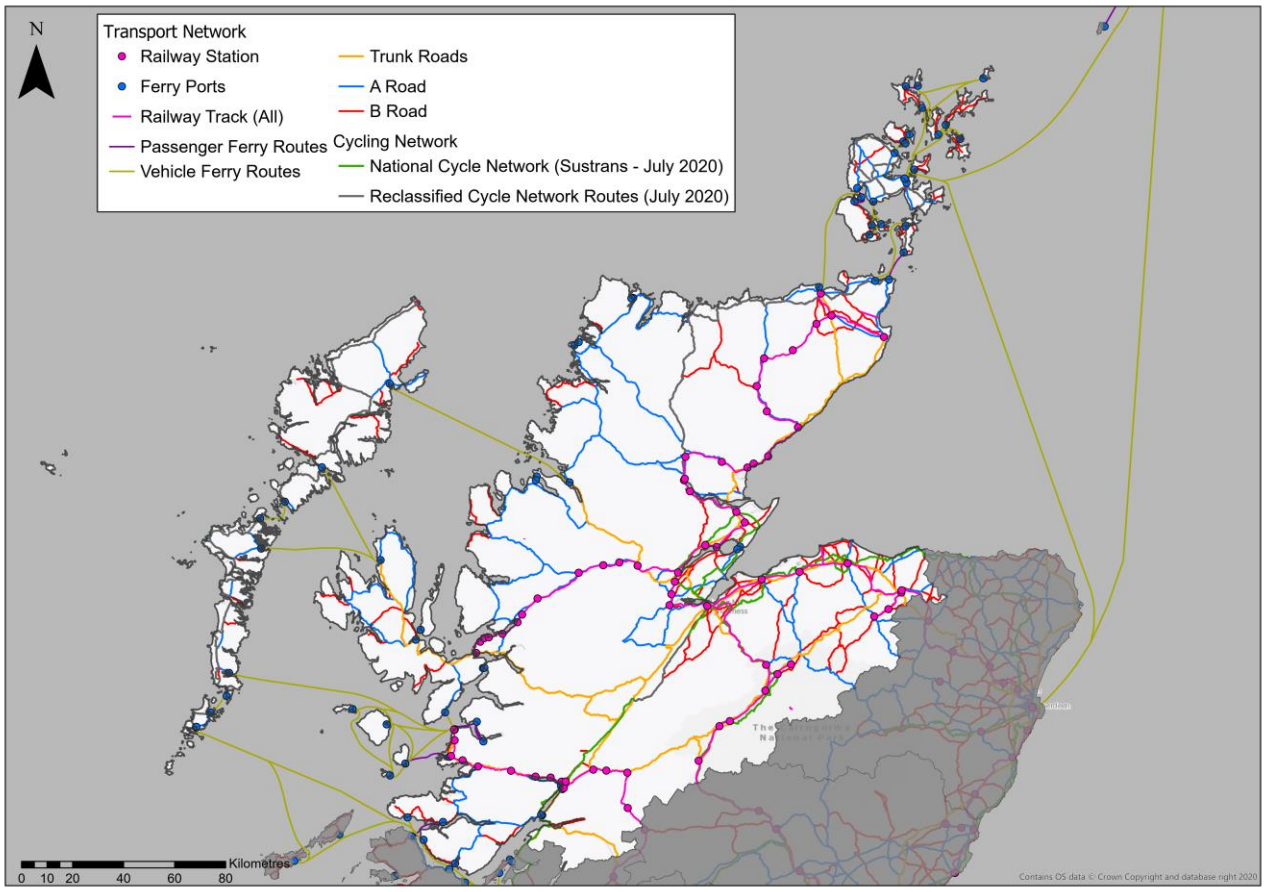


Figure 30: Highlands and Islands Transport Network

(Click image to enlarge figure)

2.5.1. Active Travel

There are several on and off-road walking and cycling corridors in the region many being local networks, alongside a network of long-distance cycle routes that form part of the NCN. These are:

- NCN 7; which follows the A9 from Kilmahog all the way to just south east of Inverness
- NCN 1; Aberdeen to Orkney via Inverness (part of the North Sea Cycle Route)
- NCN 78; Campbeltown to Inverness via Fort William

The Hebridean Way (NCN 780) has recently been removed from the national cycle network. Whilst it remains on the NCN map, it is now classified as an on-road route not on the National Cycle Network. The same applies for sections of NCN 1, 7 and 78.

As well as long distance cycling, there are several official way marked long-distance walking routes including the West Highland Way, the Great Glen Way and Moray Coast Trail. These are in addition to the multitude of unofficial long distance walking routes in the region (e.g. the Cape Wrath Trail, Skye Trail, East Highland Way, Speyside Way, Dava Way, Affric Kintail Way, Loch Ness 360, John O'Groats Way and the Hebridean Way). The above routes complement the core path network in the region.

2.5.2. Bus Network

While there are a number of commercial bus services in the region, the regional bus network is primarily underpinned by supported public and school transport services run by Stagecoach alongside a number of smaller operators. Community transport and demand

responsive transport services also operate within each of the local authorities although coverage is limited, with membership often required. Frequency of services depend on time of day and location, although a strong message from stakeholder engagement has been that service frequency, reliability and operating hours mean that public transport is not regarded as a feasible alternative to the private car for many communities in the region.

Although the Highlands and Islands region has experienced absolute growth in the number of people travelling by bus 4 or more days per week (between 2007-2008 and 2017), there are several factors that might be suppressing further growth; including bus connectivity, bus fares and bus quality. In the 5 years to 2015-16, bus service kilometres in the Highlands and Islands (including Shetland) for example have fallen by 11%, compared to a 5% reduction across Scotland as a whole[58].

2.5.3. Rail Network

There are 62 rail stations in the Highlands and Islands region situated on 5 rail lines, with 59 stations in the Highland Council area and 3 in the Moray Council area. There are a number of other stations located on the West Highland Mainline that are located within the Scottish Highlands, however these are situated within other STPR2 regions.

A new station at Dalcross is due to be completed by the end of Network Rail's current control period (CP6), which is 2024. There is no rail infrastructure on the Orkney Islands or Eilean Siar. Ferries from Barra and South Uist have connections to rail at their Scottish mainland destinations of Oban and Mallaig, with ferries to Skye connecting to the rail network at Kyle of Lochalsh. There are no rail connections from other ferry ports on the West coast of Scotland.

In terms of station utilisation, patronage in the region has been largely stable, however there are some lines showing an increase in use while others have seen a decline, as shown in Table 3.

Table 3: Total Entries & Exits (000s) and Percentage Change between 2013-14 and 2018-19[59]

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% Change
Aberdeen – Inverness (A2I)	672	703	703	653	620	631	-6.1%
Far North Line (FNL)	365	338	324	315	319	324	-11.3%
Kyle Line	207	188	182	173	183	172	-16.9%

[58] HITRANS, Draft Updated Regional Transport Strategy, May 2017, https://hitrans.org.uk/Strategy/Regional_Transport_Strategy

[59] ORR, Annual estimates of the number of entries/exits and interchanges at each station in Great Britain Table 1415, 2018/2019, https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	% Change
(KLL)							
Perth – Inverness (HML)	1,481	1,514	1,520	1,467	1,450	1,439	-2.8%
West Highland Line (WHL)	290	289	286	279	314	321	10.6%

Table 4 shows the 5 busiest stations in each local authority by patronage and the top 5 stations by growth between 2007-08 and 2018-19.

Table 4: Highlands and Islands Top 5 Rail Stations by 2018-19 Patronage and Top 5 Stations by 10-Year Growth (000s) 2008-09 to 2018-19[60]

Top 5 stations by 2018-19 Patronage		Top 5 stations by 10-year growth (2008-09 - 2018-19)	
Inverness	1,243	*Inverness*	200 (19%)
Elgin	306	*Elgin*	45(17%)
Fort William	160	*Nairn*	42 (56%)
Aviemore	138	*Fort William*	38 (32%)
Forres	126	*Mallaig*	32 (49%)

2.5.4. Maritime

There are 70 ports in the region. Twenty four vehicle ferry routes and 8 passenger-only ferry routes operate to and/or from ports in the region. Ten are provided with subsidies from Local Authorities, and 12 are subsidised by the Scottish Government. These are listed in Table 5. For many on the islands, ferries are the most frequently used mode of public transport and often provide a lifeline service.

[60] ORR, Annual estimates of the number of entries/exits and interchanges at each station in Great Britain Table 1415, 2018/2019, https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage

Table 5: Highlands and Islands Ferry Services

Ardaurchan Charters:	**John O'Groats Ferries:**
Ardnamurchan - Morvern – Mull	John O' Groats - South Ronaldsay
Arisaig Marine:	**Knoydart Seabridge:**
Arisaig - Eigg - Muck – Rum	Mallaig - Inverie – Tarbet
CalMac Ferries*:	**Northlink Ferries*:**
Barra - Eriskay	Aberdeen - Kirkwall - Lerwick
Lochaline - Mull	Scrabster – Stromness
Mallaig - Eigg - Muck - Rum - Canna	**Orkney Ferries**:**
Mallaig - Skye	Houton - Hoy - Flotta - South Walls
Mallaig - South Uist	Kirkwall - North Ronaldsay - Papa Westray
North Uist - Harris	Kirkwall - Sanday - Eday - Stronsay
Oban - Barra	Kirkwall - Shapinsay
Skye - Harris	Kirkwall - Westray - Papa Westray
Skye - North Uist	Stromness - Hoy - Graemsay
Skye - Raasay	Tingwall - Rousay - Egilsay - Wyre
Tobermory - Kilchoan	Westray - Papa Westray
Ullapool – Lewis	**Pentland Ferries:**
Highland Council:**	Gill's Bay - South Ronaldsay
Nether Lochaber – Ardgour (Corran ferry)	**Scoraig Ferry:**
Highland Ferries:	Scoraig – Badluarach
Cromarty - Nigg	**Skye Ferry CIC:**
Fort William – Camusnagaul	Skye – Glenelg

**Operated on behalf of Scottish Government*

***Operated by or on behalf of the Local Authority*

Passenger numbers on ferries have been increasing since the introduction of the Road Equivalent Tariff (RET) on Calmac's ferry network which, following initial pilot in 2008, had completed its roll-out across the Clyde and Hebridean Ferry (CHFS) Network by 2015. In general, RET has increased the number of passenger and car journeys to/from the islands, particularly during the summer, and this is evident for the majority of the CHFS routes within the region. Increasing demand has resulted in capacity pressures, particularly for vehicular travel, for island residents and other users on peak services. It should be noted that RET is not available for the services between Orkney and mainland

Scotland or for the inter-island services within Orkney.

2.5.5. Road Network

The size of the region is reflected in the 11,545 kms (7,174 miles) of road. A detailed breakdown is shown in Table 6.

Table 6: Length of the Highlands and Islands Road Network by Type[61]

Authority	Trunk Roads	Public road lengths (km) by Local Authority and Class, 2018-19				
	A	A	B	C	U	Total (incl. trunk roads)
Highland	960	1,400	970	1,440	2,942	6,752 (7,712)
Moray	98	157	296	366	739	1,559(1,657)
Orkney Islands	-	161	205	160	459	985
Eilean Siar	-	340	177	189	486	1,191

Transport Scotland are responsible for the operation and maintenance of the trunk road network, which consists of the following routes; it is noted that no roads are classified as trunk roads in the Orkney Islands or Eilean Siar:

- A82 (Dalnottar to Inverness)
- A86 (Spean Bridge to Kingussie)
- A87 (Invergarry to Kyle of Lochalsh, Borve, Uig)
- A830 (Fort William to Mallaig)
- A835 (Tore to Ullapool)
- A889 (Dalwhinnie to Laggan Bridge)
- A893 (Ullapool (Shore Street))
- A9 (Stirling to Thurso)
- A95 (Granish to Keith)
- A96 (Aberdeen to Inverness)
- A99 (Latheron to Wick)

The operation and maintenance of all other public roads within the region are the responsibility for the relevant local authority.

[61] Transport Scotland, Scottish Transport Statistics No. 38, 2019, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/

2.5.6. Air

The region has 6 airports that are operated and managed by Highlands and Islands Airports Limited (HIAL) and supported by subsidies provided by the Scottish Government. There are 6 other airports that operate air services. The air services provided by the 6 HIAL airports are all internal/domestic flights with the exception of Inverness Airport that provides international flights to destinations across Europe, and Kirkwall which provides an air link to Norway. The domestic air services connecting the Islands to the Scottish mainland are shown in Figure 31, with winter and summer flight frequency listed in Table 7.

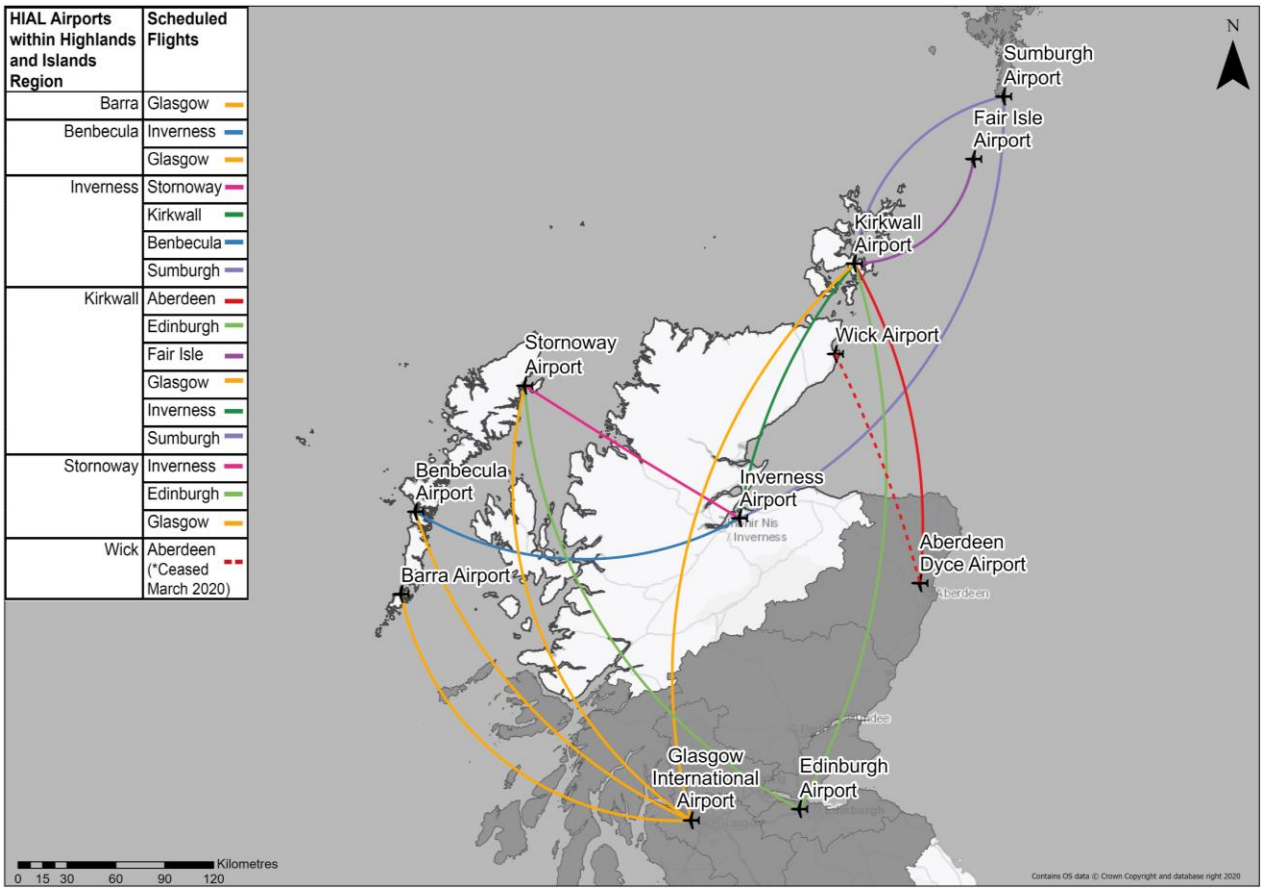


Figure 31: HIAL Airport Network within Highlands & Islands[62]

(Click image to enlarge figure)

62 Highlands and Island Airports Limited (HIAL), accessed: 16 November 2020, https://www.hial.co.uk/

Table 7: HIAL Airport Network Weekly and Daily Flight Frequency

Origin	Destination	Weekly Frequency		Number of Fights per day	
		Winter[63]	Summer[64]	Winter	Summer
Inverness	Stornoway	Sunday to Friday	Daily	1	1-3
	Kirkwall	Sunday Only	Daily	1	1
	Benbecula	Weekdays Only	Weekdays Only	1	1
	Sumburgh	Thursday & Sunday Only	Daily	1	1
Benbecula	Inverness	Weekdays Only	Weekdays Only	1	1
	Glasgow	Daily	Daily	1-2	1-2
	Stornoway	Weekdays Only	Weekdays Only	1	1-2
Kirkwall	Sumburgh	Daily	Daily	1	1
	Fair Isle[65] (Summer Only)	-	2 days	-	1
	Inverness	Sunday Only	Daily	1	1
	Aberdeen	Daily	Daily	1-3	1-3
	Edinburgh	Daily	Daily	1-2	1-3
	Glasgow	Daily	Daily	2	1-2
Barra	Glasgow	Daily	Daily	1-2	1-2
Stornoway	Benbecula	Weekdays Only	Weekdays Only	1	1-2
	Inverness	Sunday to Friday	Daily	1	1-3
	Edinburgh	Sunday Only	Daily	1	1
	Glasgow	Daily	Daily	2	1-3

[63] Loganair (with the exception of Fair Isle): Winter Flights between 08/03/21 and 15/03/21, accessed: 12 January 2021, https://www.loganair.co.uk/
[64] Loganair (with the exception of Fair Isle): Summer Flights between 09/08/21 and 16/08/21, accessed: 12 January 2021, https://www.loganair.co.uk/
[65] Fair Isles, accessed: 12 January 2021, https://www.fairisle.org.uk/travel.html

Orkney Islands Council also subsidise air services using a Public Service Obligation (PSO) Contract. The services serve the six outer islands of Eday, North Ronaldsay, Papa Westry, Sanday, Stronsay and Westray and are operated by Loganair from Kirkwall Airport as shown in Figure 32, with winter and summer flight frequency listed in Table 8.

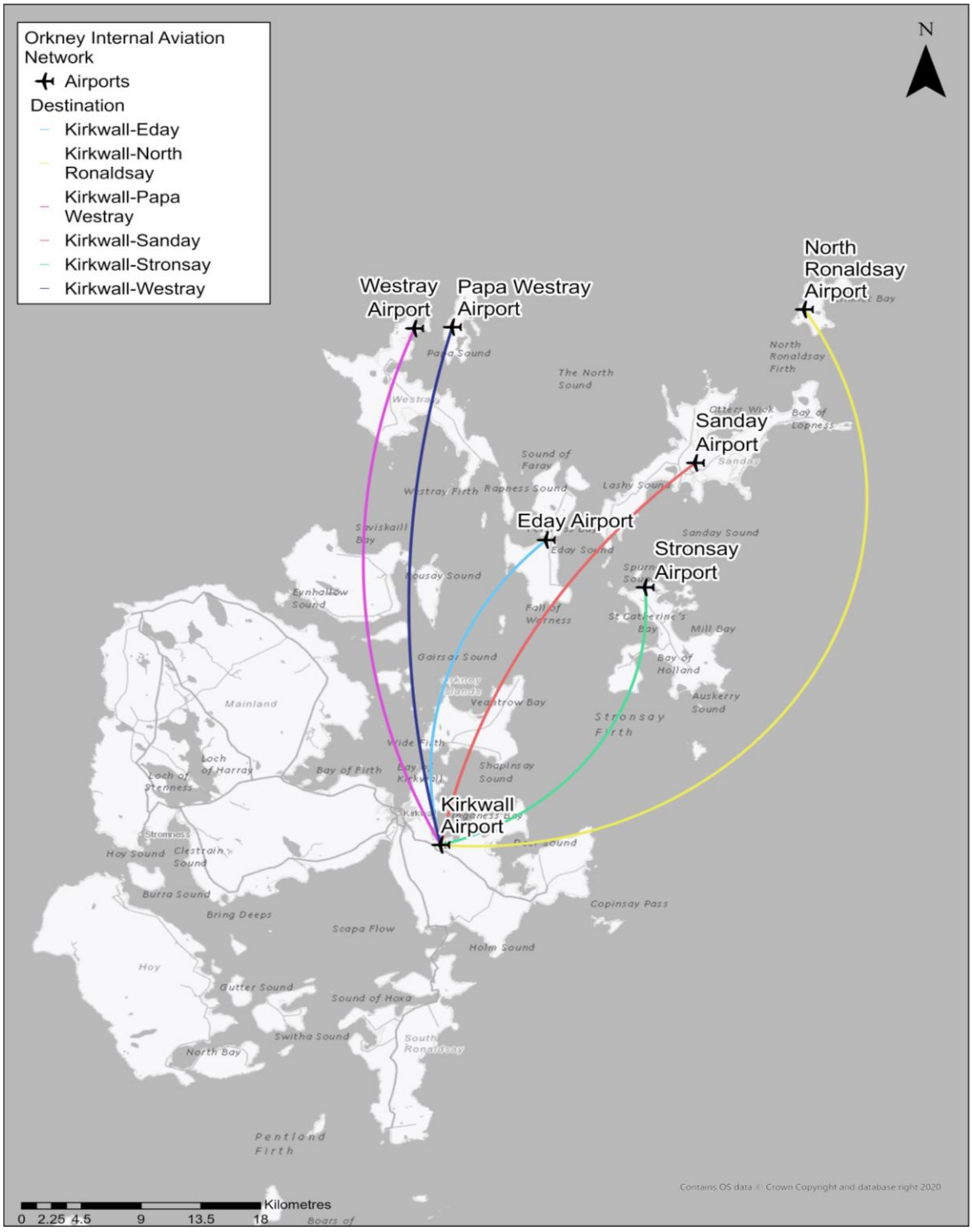


Figure 32: Internal Orkney Air Network62

(Click image to enlarge figure)

Table 8: Orkney Islands Weekly and Daily Internal Flight Frequency

Origin	Destination	Weekly Frequency		Number of Fights per day	
		Winter[63]	Summer[64]	Winter	Summer
Kirkwall	Eday	Monday & Wednesday Only	Monday & Wednesday Only	1-2	1-3
	North Ronaldsay	Daily	Daily	1-3	1-3
	Papa Westray	Daily	Daily	1-3	1-3
	Sanday	Daily	Daily	1-2	1-2
	Stronsay	Daily	Daily	1-2	1-2
	Westray	Daily	Daily	1-2	1-2

In addition to the air services between the Western Isles and mainland Scotland, where services connect Stornoway to Glasgow, Edinburgh and Inverness and Barra and Benbecula to Glasgow, there is also an internal air service between Benbecula and Stornoway (Figure 33). This service is provided by Loganair via a PSO Contract with Comhairle nan Eilean Siar.

Where routes are not served by a PSO, the Air Discount Scheme (ADS) provides a discount of 50% of the core airfare for eligible passengers[66] in the region.

[66] Air Discount Scheme for the Highlands and Islands, www.airdiscountscheme.com/

Figure 33: Internal Western Isles Air Network62

(Click image to enlarge figure)

With the exception of Wick, passenger numbers at the airports[67] have increased between 2012-13 and 2018-19 as shown in Figure 34. Inverness in particular has seen a 49% increase, as shown in Figure 35; this is considered to be due to the wider choice of destinations from Inverness, with services to the rest of the UK, including London Gatwick, and international destinations.

[67] Highlands and Islands Airports Limited (HIAL), Annual Reports, 2012-13 to 2018-19, http://www.hial.co.uk/hial-group/about-us/annual-report-board-minutes/

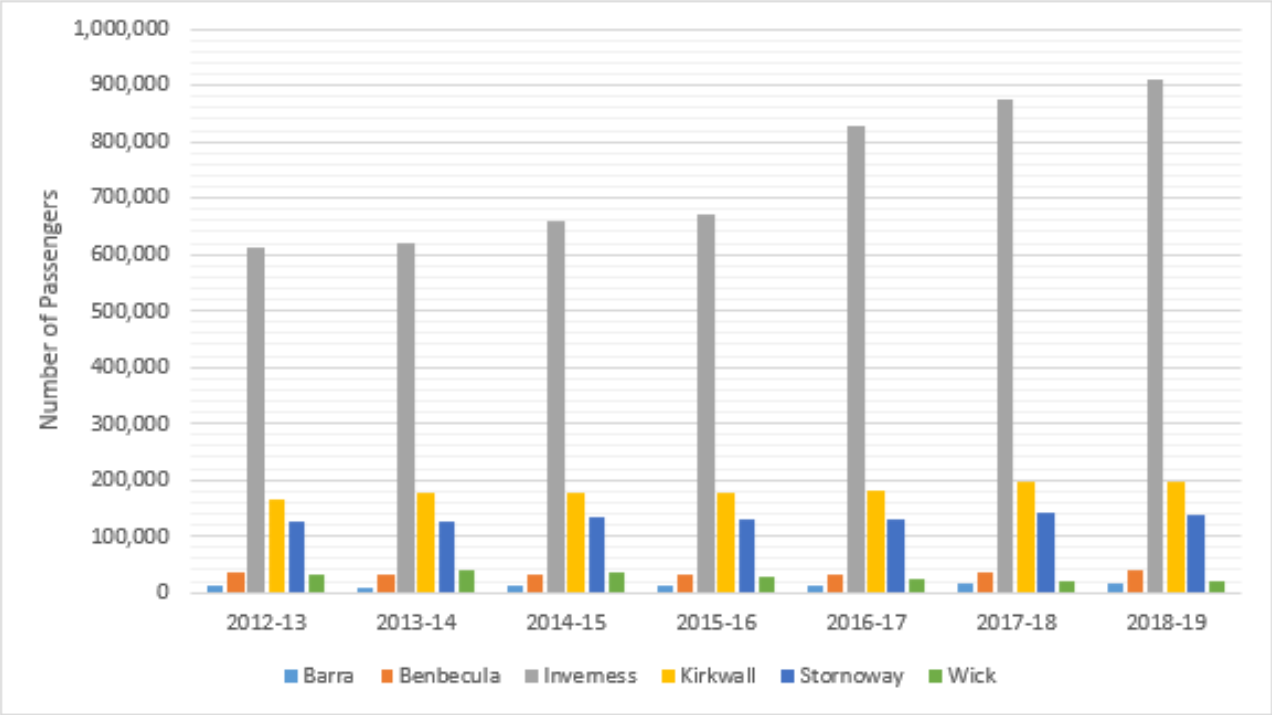


Figure 34: Annual Passenger Number Change at Highlands and Islands Airports since 2012

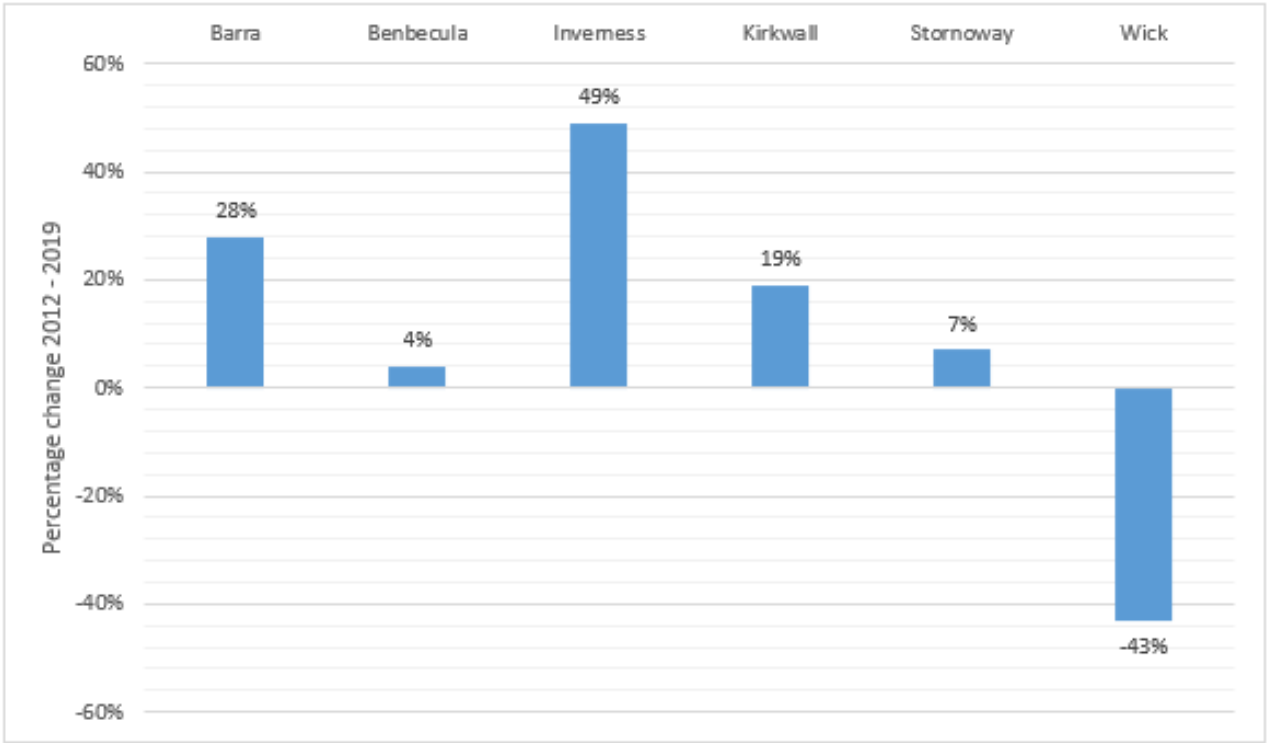


Figure 35: Highlands and Islands Airports - Passenger percentage change 2012-2019

2.6. Context Summary

- Over the last decade, the region has generally performed better than Scotland in economic terms. Deprivation is generally low in the region however accessibility scores are very low for many data zones especially the North West Highlands, Eilean Siar and the Orkney Islands.
- The region experienced population growth between 2011 – 2019, however sustaining and increasing a working age population is a significant challenge, particularly for rural and island communities.
- Car availability in the region is higher than the Scottish average. This is as a result of having to travel long distances due to the region's geography and the centralisation of key services. However, the proportion of commuters who travel to work by car is similar to the national average and the proportion that travel by active travel modes is higher than the national average.
- The region experiences a higher percentage of residents travelling 60+ km to work than the national average, reflective of the region's geography. Remote working is also more common in the region with a higher percentage of people working from home than the national average, which again is reflective of the region's geography and nature of employment.
- The region has a high level of economic activity at 80.9%, however the average annual salary is lower than the national average. The economy of the Highlands has grown in line with Scotland in recent years and the economies of Eilean Siar, Orkney Islands and Shetland Islands outstripped growth in the rest of Scotland until 2015, before reducing slightly. In Moray, the economy has contracted since 2008, with year on year decline between 2011 and 2016, which is in contrast to the economic growth experienced at a national level; this may be a result of the economic sectors for the Moray region, which is dominated by the manufacturing sector. There has however been a slight increase in GVA output for the region between 2016 and 2018.
- Given the lower than average salaries and longer distanced travelled, transport expenditure is generally high in the region. There is also a high risk of transport poverty in large areas of the region, with availability, cost and frequency of public transport being identified as an issue.
- The bus network in the area includes a mixture of supported public, school transport and commercial bus services with community transport and demand responsive services also playing an important role. Service frequency and coverage does vary greatly however, depending on the time of day and where you are in the region.
- There is approximately 1000km of trunk road in the region, however the majority of the road network is managed by the local authorities, including all roads on Eilean Siar and Orkney Islands.
- The islands within the region are reliant on ferry and air services to provide connectivity both between islands and from islands to mainland Scotland. There has been significant growth in patronage in the majority of the region's airports since 2012.
- Key documents and policies considered within the context of STPR2 generally have a strong focus on tackling the climate emergency, strengthening connectivity and promoting tourism as drivers for economic growth.

3. Problems & Opportunities

3.1. Approach to Problem & Opportunity 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 transport network in the Highlands and Islands region and details the approach to their identification.

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

3.1.1. *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 those 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 as Scottish Household Survey[68], Transport and Travel Scotland[69], mobile phone and sat-nav data[70] for journey times, accident data, public transport provision, 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 of problems and opportunities. For the Highlands and Islands region this has consisted of:

[68] Scottish Government, Scottish Household Survey, 2018, https://www.gov.scot/publications/scottish-household-survey-key-findings-2018/
[69] Transport Scotland, Transport and Travel in Scotland, 2019, https://www.transport.gov.scot/our-approach/statistics/#42764
[70] Data supplied by INRIX via Transport Scotland.

- **Problems and Opportunities workshops** held in Elgin, Inverness, Kirkwall, Thurso, Stornoway and Fort William with regional stakeholders in June 2019.
- **Option Generation workshops** held in Inverness, Elgin, Kirkwall, Stornoway and Fort William in November and December 2019 to identify potential options to address the identified problems and opportunities.
- **Structured interviews** with senior officers across the local authorities and other organisations in the region.
- **Elected Members Briefings** held in January and February 2020 in Inverness, Kirkwall and Stornoway.
- An **Online Survey** carried out 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.
- **Regional Transport Working Group** meetings, which included representatives from the constituent Councils, the Regional Transport Partnership HITRANS and other key stakeholders.
- **Schools Engagement** has been undertaken across the country, with 2 primary schools (both in Highland) involved in undertaking an exercise to consider the transport problems and opportunities in their area and to develop this into a transport plan setting out what is required.

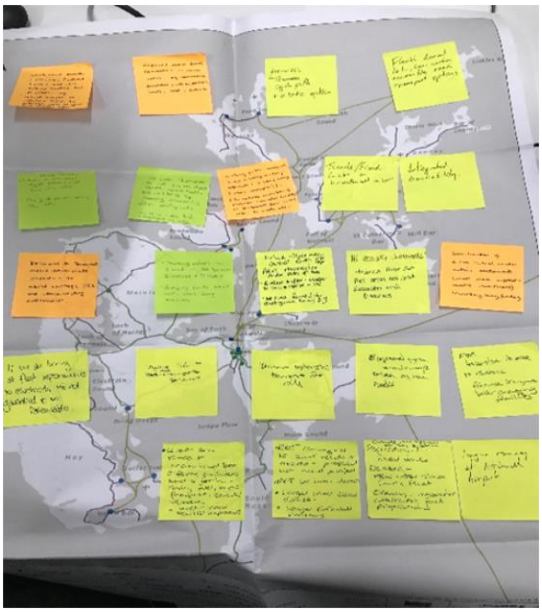


Figure 36: Stakeholder Engagement

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

3.2. Problems & Opportunities

Based on the activities described above, the following transport-related problems and opportunities have been identified for the Highlands and Islands region. Evidence from which these themes have emerged is provided in this section.

- Connectivity
- Transport Poverty
- Capacity Constraints
- Journey Times
- Resilience
- Public Transport Frequency and Integration
- Dependence on Private Car

3.2.1. Problems

It is recognised that inter-dependencies between the identified problems exist and as such, these should not be read in isolation.

CONNECTIVITY

The issue of poor connectivity both within the Highlands and Islands region and from the region to the rest of Scotland has been frequently raised throughout stakeholder engagement for this study.

Within the region, data from the Scottish Index of Multiple Deprivation (SIMD) shows that one third of data zones in the region are ranked amongst the lowest 10% in Scotland in terms of accessibility[71], and that 47% of data zones rank amongst the lowest 20% for accessibility[72]. This is exemplified in Figure 37 below.

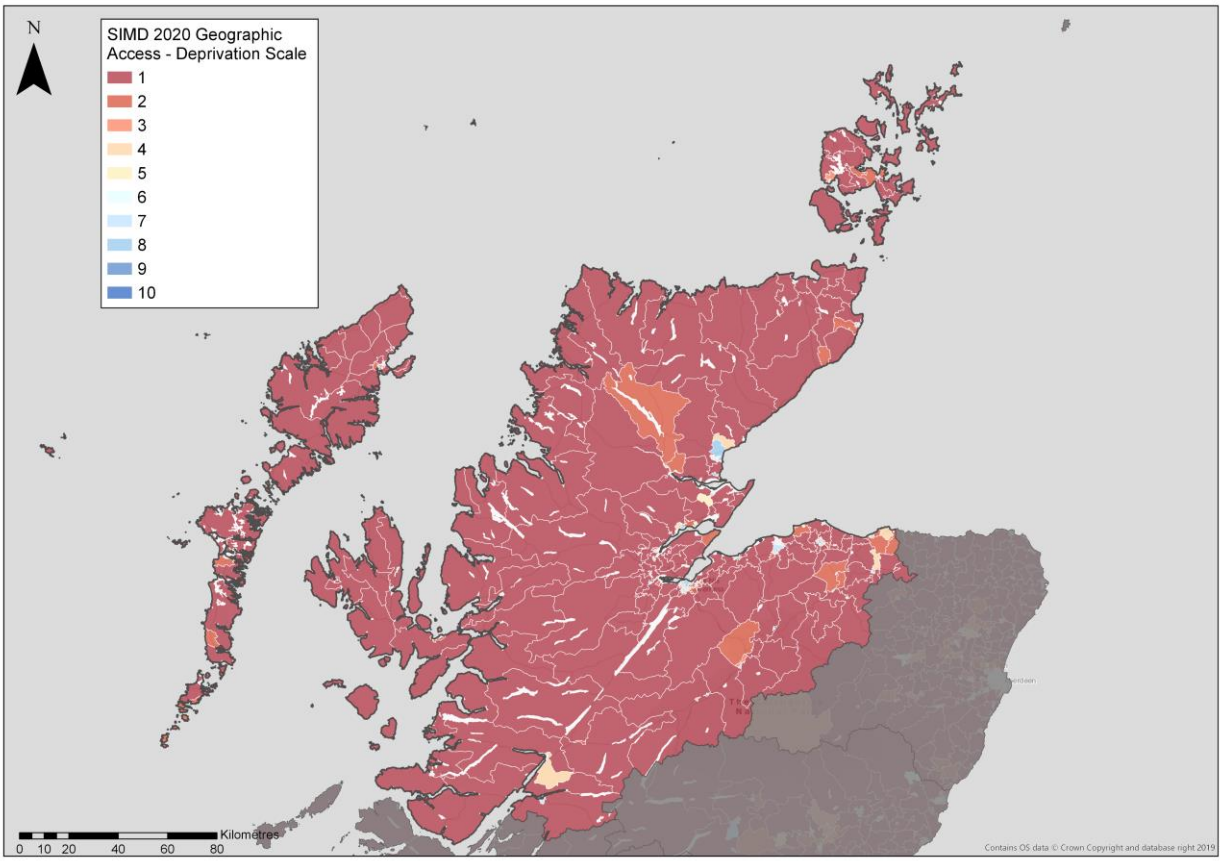


Figure 37: Highlands and Islands Region SIMD - Access Deprivation

(Click image to enlarge figure)

[71] The SIMD 2020 Geographic Access domain models the ability of Scottish citizens to reach a number of key services. The geographic access indicator is based on the average drive time to a petrol station, a GP surgery, a post office, a primary school, a secondary school and a retail centre. This is combined with public transport travel time to a GP surgery, a post office and a retail centre to give an overall access score

[72] Scottish Government, Scottish Index of Multiple Deprivation (SIMD), 2020, https://simd.scot/

With services being located in key settlements, residents in the region outside of these settlements will typically have to travel longer distances to reach key services. Linked to this, a common concern raised during stakeholder engagement focused on the centralisation of services, in particular medical services, which leaves those living outwith urban centres feeling isolated.

Connections to Cities

The difficulties of completing a viable and affordable working day in Glasgow, Edinburgh, Aberdeen and Inverness was another problem highlighted during stakeholder engagement, with the availability and timing of public transport services said to reduce connectivity and the resulting opportunities for those living and working in the region. Table 9 indicates whether it is possible to travel from a number of the key settlements in the region to Glasgow, Edinburgh, Inverness and Aberdeen for a 6 hour working day, starting at 10:00, by public transport or plane[73].

Table 9: Viable Working Day (10:00 - 16:00) in Scottish Cities from Various Settlements using Public Transport[73]

	Glasgow	Edinburgh	Inverness	Aberdeen
Fort William	×	×	✔	×
Stornoway	✔	×	✔	×
Kirkwall	×	✔	×	✔
Thurso	×	×	×	×
Elgin	×	✔	✔	✔
Ullapool	×	×	×	×
Inverness	✔	✔	N/A	✔

As shown in Table 9, connectivity to the stated cities is a problem for the Scottish mainland, Eilean Siar and Orkney Islands residents in the region, for example:

- Travelling from Fort William, it is only possible to travel by public transport to Inverness for a full working day, while from Ullapool and Thurso it is not possible to reach any of the cities assessed;
- Travelling from Elgin, it is possible to arrive in Edinburgh at 09:30 and Glasgow at 10:10, however each of these journeys require a train departure time of 05:30 and would mean an arrival time back in Elgin at 21:15;
- Travelling from Inverness, it is possible to arrive in Edinburgh at 09:22 and Glasgow at 09:11, however each of these journeys require a train departure time of 05:36 and would mean an arrival time back in Inverness after 20:00. It should also be noted that the earliest a traveller can arrive in Inverness from the central belt by train is 10:28;
- Travelling from Portree, it is only possible to travel by public transport for part of the way to Inverness for a full working day. A train departs Kyle of Lochalsh at 6:11

[73] Analysis based on data taken from Traveline and Loganair based on mid-February 2020 timetables, reviewed in February 2020.

which arrives in Inverness at 08:50, however this would require a drive of between 45 minutes and an hour from Portree. The return journey departs Inverness at 17:54 and arrive in Kyle of Lochalsh at 20:31, meanings arrival in Portree around 21:30

Air services offer good connectivity from the islands to the Scottish mainland but only where flights are available at the times required. Multiple examples were provided during stakeholder engagement where a trip to the Central Belt or Inverness for a 2-hour meeting would entail 2 overnight stays. From Stornoway, the only cities where a full working day can be completed is Glasgow or Inverness as services to Edinburgh and Aberdeen either do not exist or are not frequent enough to provide flexibility for travellers. From Kirkwall, services allow for a working day in Edinburgh and Aberdeen but not Inverness or Glasgow, depending on the time of year.

To an extent, these services limit the opportunities for residents and businesses to do business, attend meetings/courses, or participate in other activities across Scotland. It should also be noted that opportunities will vary by season as the winter timetable does not provide the same availability.

Cost of Travel

In addition to the availability of services, the cost of travel to the Scottish Mainland from the island communities was regarded by a number of stakeholders as prohibitive and is acting as a barrier to travel; particularly by air. Stakeholders highlighted that the cost of travel to/from the islands deters people from basing themselves in the region, contributes to a premium in the cost of goods and can deter tourists. A high-level fares review[74] shows for instance that, for a family of 4, flights range in cost from £515 - £1,220 for travel between Edinburgh-Kirkwall (return) and between £730 - £1,200 for Edinburgh-Stornoway (return) journeys.

TRANSPORT POVERTY

Transport Expenditure

Overall, households within the Highlands and Islands region spend a high proportion of their household budget on transport expenditure. As shown in Figure 38, overleaf, the majority of data zones spend between 17-18%[75] of their budget on transport, compared to the national average of 14%.

[74] Loganair; cost range provided covers for trips in February 2020 and July 2020, with fares correct at February 2020.

[75] Transport Expenditure is a calculation based on the average weekly household expenditure dedicated to transport as a percentage of the total average weekly household expenditure. ONS, Expenditure, FYE 2018, https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure

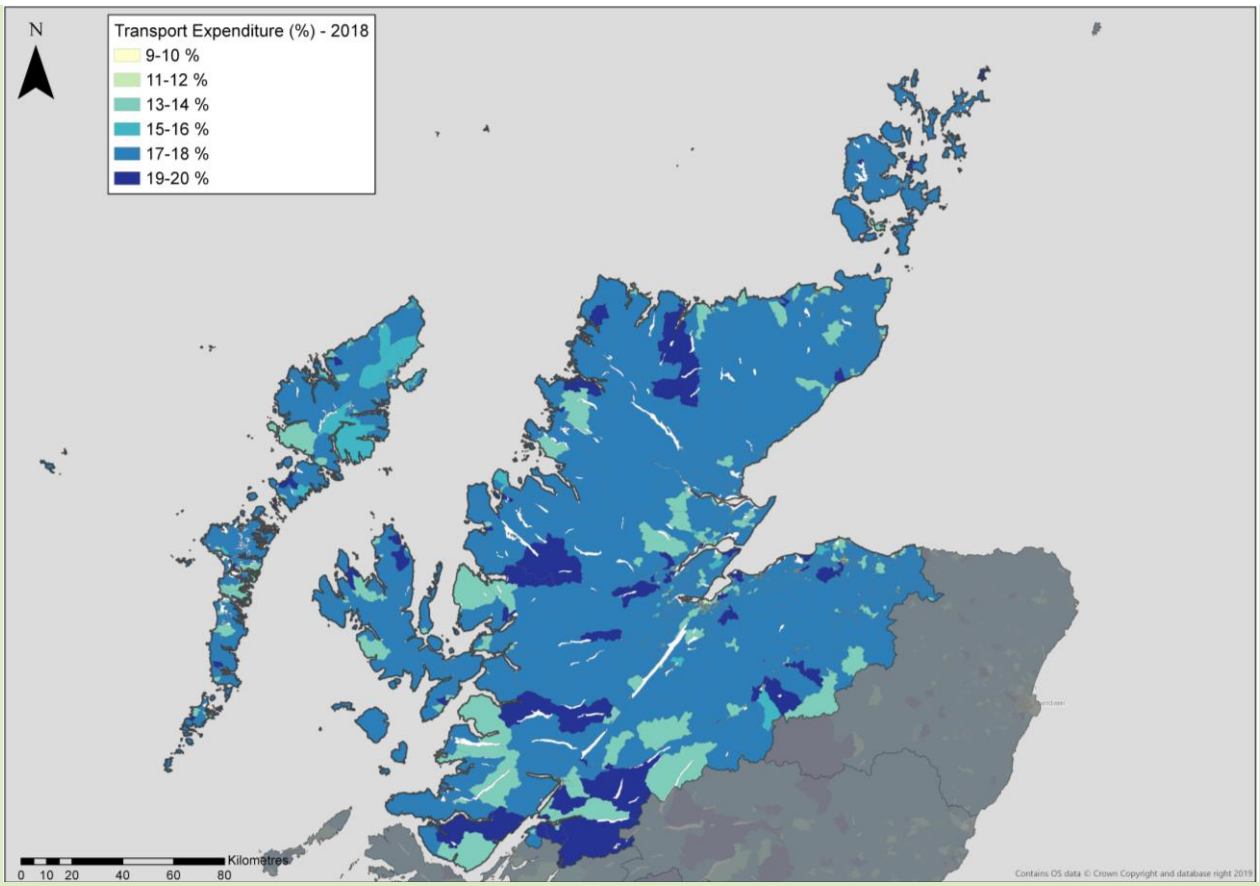


Figure 38: Transport Expenditure (%) relative to Household Budgets for the Highlands and Islands Region[76]

(Click image to enlarge figure)

Households in rural areas spend the highest proportion of their budget on transport costs, with the proportion of expenditure lower within the main settlements of Inverness, Nairn, Forres, Elgin, Thurso, Fort William, Stornoway and Kirkwall. This is partly due to the longer distances travelled and the higher costs of fuel in the region. For example, the average price per litre of petrol, in February 2020, was £1.19 in Elgin, in other parts of the region, it was recorded to be considerably higher (e.g. Thurso: £1.26, Stornoway: £1.29 and Kirkwall: £1.32[77]).

Transport Poverty

Transport Poverty indicates how likely those living in each data zone are to have a lack

[76] Transport Expenditure is a calculation based on the average weekly household expenditure dedicated to transport as a percentage of the total average weekly household expenditure. ONS, Expenditure, FYE 2018, https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure

[77] Confused.com, Petrol Prices, https://www.confused.com/on-the-road/petrol-prices

of affordable transport options to access essential services or work[78]. Figure 39 presents a map of transport poverty for the Highlands and Islands region and demonstrates that 58% of data zones are classified as being at high risk of transport poverty compared to 38% in Scotland. A further 38% of data zones were classified as medium risk (41% national average) and 4% were classified as low risk (21% national average).

Transport poverty is a particular issue on Eilean Siar and in rural parts of the Scottish mainland. Only 3 data zones on either Eilean Siar or Orkney Islands were classified as being at low risk of experiencing transport poverty, all of which are on the Orkney Mainland. Of the Scottish mainland data zones classified as low, each data zone is located in an urban area.

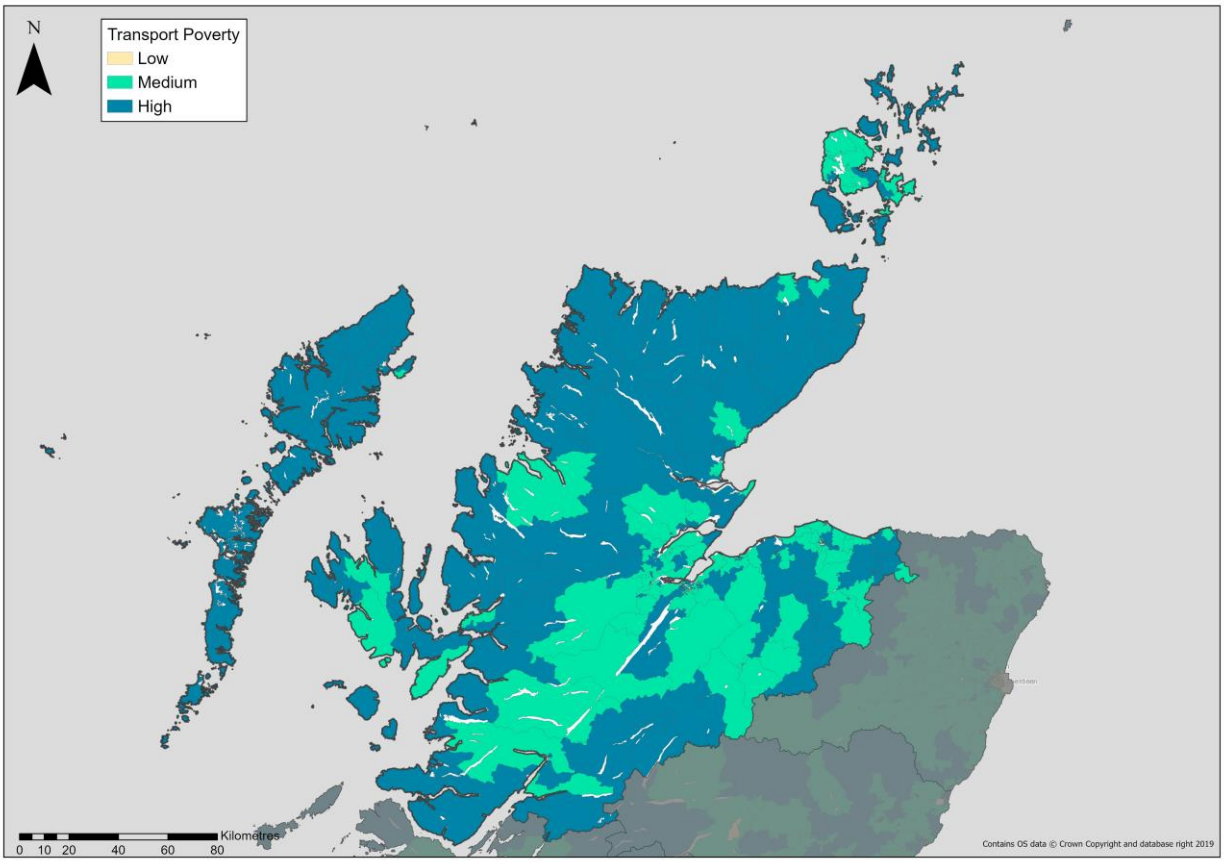


Figure 39: Transport poverty in the Highlands and Islands Region

(Click image to enlarge figure)

As transport poverty is a combination of high transport costs combined with low household incomes, young people can be at particular risk, as has been highlighted in a

[78] Transport Poverty analysis is based on research which uses data on household income, car availability and access to the public transport network. Based on Sustrans, Transport Poverty in Scotland, 2016, https://www.sustrans.org.uk/media/2880/transport_poverty_in_scotland_2016.pdf

number of other studies. For example, research[79] undertaken by HIE identified that "transport is the factor where most young people perceive compromise as necessary, with almost 80% of young people acknowledging that transport and travel is more difficult and expensive in the Highlands and Islands." The same study identified that "around a third of young people (31%) see lack of transport (or lack of affordable transport) as a barrier to study and 12% as a barrier to employment", concluding that "difficult and expensive travel is of disproportionate significance for young people in more rural communities". Furthermore, 26% of young people who responded to a recent survey[80] in the region said that, in an average week, they spend more than £9 on travel to medical and/or other appointments, which is nearly double the percentage of young people who pay more than £9 nationally (14.1%).

The cost of rail journeys in the region has also been highlighted as an issue for both everyday journeys and for longer distance journeys, for example to the Central Belt. An exercise has been undertaken to compare the cost of rail journeys in the Highlands and Islands region against other regions in Scotland, as shown in Table 10. This indicates that the average journey fare in the region is £31.99, the highest out of all regions, although the region has one of the lowest average fares per mile at £0.22[81]. It should be noted that whilst the average fare per mile is low in the region, some short distance journeys can be comparatively expensive.

[79] HIE, Young People and the Highlands and Islands: Maximising Opportunities, 2018, https://www.hie.co.uk/research-and-reports/our-reports/2018/may/31/yp-research/

[80] Scottish Youth Parliament, All aboard: Young People's views and experiences of public transport in Scotland - HITRANS Region Summary, January 2019, https://syp.org.uk/wp-content/uploads/2019/09/All-Aboard-final-report-no-bleeds.pdf

[81] Data sourced from MOIRA 2.2.

Table 10: Local and Regional Rail Fares

Region	Local		Regional		Fare per mile Ratio (Reg/Loc) [82]
	Average Journey Fare	Average Fare Per Mile	Average Journey Fare	Average Fare Per Mile	
Argyll and Bute	£3.62	£0.23	£10.52	£0.21	93%
Ayrshire and Arran	£3.39	£0.30	£6.79	£0.20	67%
Edinburgh and South East Scotland (incl. South Fife)	£4.63	£0.31	£10.91	£0.23	74%
Forth Valley	£3.15	£0.41	£7.37	£0.24	58%
Glasgow City	£2.98	£0.34	£8.46	£0.23	66%
Highlands and Islands	£6.42	£0.20	£31.99	£0.22	111%
North East of Scotland	£4.26	£0.28	£28.36	£0.26	93%
Scottish Borders	£1.83	£0.44	£10.87	£0.21	48%
South of Scotland (incl. Scottish Borders and Dumfries & Galloway)	£3.16	£0.28	£12.68	£0.19	66%
Tay Cities (incl. North Fife)	£5.55	£0.30	£16.17	£0.25	85%
South West of Scotland (Dumfries & Galloway)	£5.06	£0.24	£14.21	£0.17	72%

Concessionary Travel

During stakeholder engagement, a number of stakeholders also highlighted the view that the bus concessionary travel scheme was not equitable, particularly for island residents where travel by bus is more limited. It has been said that a person with a concessionary pass in Edinburgh could travel across Scotland for free, but a person eligible for the concessionary fare scheme living in Orkney are limited to those available to them on their Islands.

CAPACITY CONSTRAINTS

During the extensive stakeholder engagement undertaken across the region, a wide range of multi-modal capacity constraints have been highlighted.

Island Connections

Passenger numbers on ferries have been increasing since the introduction of the RET in

[82] The ratio of the average regional fare per mile to the average local fare per mile.

the Eilean Siar. As shown in Figure 40[83], there has been a large increase in passenger numbers and particularly vehicle numbers on the Ullapool-Stornoway ferry. As the vessel operates 2 passenger services during the day and a freight service at night, there is limited resilience should the vessel break down or be delayed, with consultation highlighting that it is becoming very difficult for residents and businesses in Eilean Siar to book spaces for vehicles on the vessels throughout the busy summer period. Whilst there have been benefits of RET, with increased tourism on the Western Isles[84], concerns have been raised in particular around the impacts of increased campervan numbers since its introduction given that they take up a larger amount of deck space and reduce availability for other users. RET is not currently available on routes to the Orkney Islands or for internal ferries within Orkney.

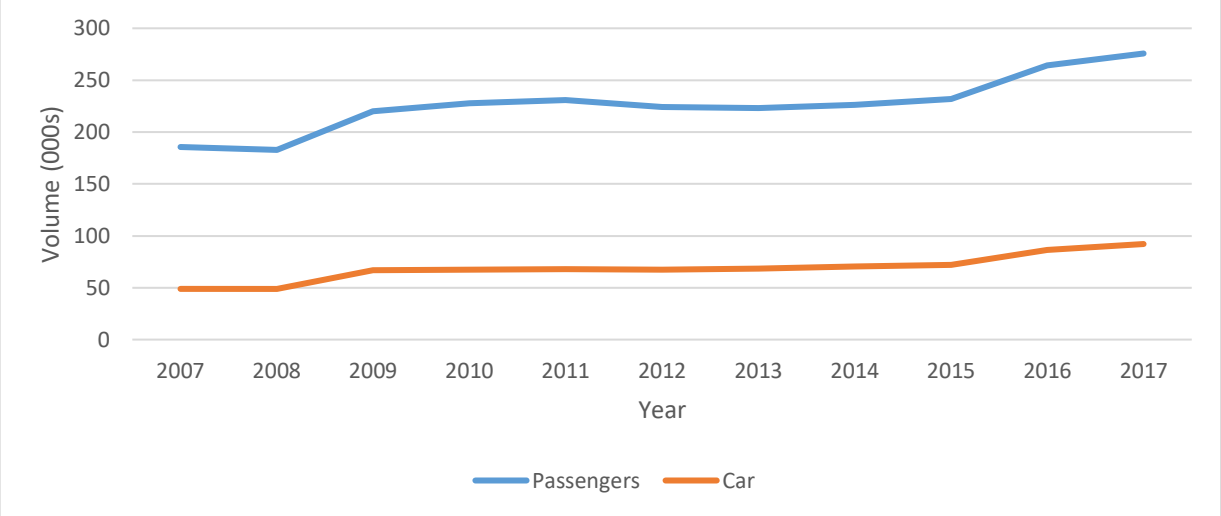


Figure 40: Passenger and Car numbers of Ullapool to Stornoway Route by year

Other capacity-related issues associated with ferry services in the region highlighted during stakeholder engagement included issues for residents and businesses wishing to travel on the NorthLink services all year round, as well as capacity issues for freight, particularly given the increasing demand from aquaculture and fishing sectors in Shetland. Anecdotally it has been reported that containers are being left at the pier side due to capacity issues. With regards to the inter-isles ferry service in Orkney, it has also been reported by stakeholders that Westray residents and businesses struggle to book vehicles on their service as it is operating at capacity.

Air services, particularly from Orkney, were also said to be at capacity during stakeholder engagement, and there has been a 19% increase in passenger numbers since 2012[85], as shown earlier in section 2.5.

Road Capacity

A perceived lack of safe overtaking opportunities on sections of the trunk road network,

[83] Transport Scotland, Scottish Transport Statistics No. 38, 2019, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/
[84] Comhairle nan Eilean Siar, Outer Hebrides Local Development Plan, November 2018, https://www.cne-siar.gov.uk/media/12598/ohldp-adopted-plan.pdf
[85] Highlands and Islands Airports Limited (HIAL), Annual Reports, 2012-13 to 2018-19, http://www.hial.co.uk/hial-group/about-us/annual-report-board-minutes/

including, for example, the A95 and the A82, have been identified during engagement. These are associated with the standard of carriageway and the mix and composition of vehicles, including HGVs as well as agricultural traffic which can lead to increased journey times and driver frustration that can lead to risky overtaking manoeuvres.

The road network in the region is particularly susceptible to seasonal congestion and delay associated with increased visitor numbers, particularly during the summer months, holiday weekends and at times of major events. This is noted as being a particular problem in Fort William on the A82 and A830, where journey times can increase significantly, particularly southbound, as a result of congestion at certain points in the peak tourist seasons. Journey time analysis[86] has shown that there are higher levels of travel time variability for south/westbound journeys compared to north/eastbound journeys. Journey times also illustrate that seasonal variability is most pronounced in the south/westbound direction, with variability of 20 minutes for southbound travel times on the approach to the A830 Roundabout shown for August 2017. These effects are greatest during the period from late morning through to early evening. In addition, there is a lack of resilience in the road network.

While tourism brings significant benefits to the region, consultation highlighted concerns regarding the potential impacts on road quality and condition. A marked example of the changes in traffic volumes and visitor numbers can be found from the success of the North Coast 500 (NC500) route which has been marketed as a scenic road trip round the Highlands using both local and trunk roads. A report into the impact of the NC500 in the North Highlands undertaken by HIE[87] states the following:

- The route attracted 29,000 additional visitors and £9 million additional spend in its first year.
- There had been an average increase of 26% in visitor numbers along the route since it opened in 2015.

Traffic data has shown that annual traffic volumes along the route increased by 10%.

JOURNEY TIMES

Journey times by road, bus and rail have been described as long by stakeholders. This is partly due to the longer distances between origins and destinations but also due to constraints in the transport network. Stakeholders have reported that frustration arises where the length of the journey prevents meaningful visits to services especially where services have been centralised. During stakeholder engagement there was an acknowledgement that people living in rural areas accept that distances to access employment and services are greater relative to those in urban areas. However, stakeholders felt that journey times could be improved.

Across the region it is commonplace to have to spend a disproportionate amount of time travelling by car per miles driven compared to other parts of the country. Elgin to Inverness is a 38 mile long journey but takes 61 minutes. Thurso to Inverness is a 111 mile journey but takes 147 minutes. The miles driven per minute is lower for journeys from the region's towns to Inverness (average of 0.72 miles per minute) than the journey from Inverness to the Central Belt (average of 0.84 miles per minute for travel from

[86] INRIX Journey Time analysis as part of the Fort William Pre-Appraisal Study.
[87] HIE, Impact of the NC500, July 2017, https://www.hie.co.uk/latest-news/2017/june/19/impact-of-north-coast-500-route/

Inverness to Edinburgh, Glasgow, Perth and Stirling). The average miles per minute for travel from Fort William to the Central Belt is 0.72, which is lower than from Inverness. Journey times by road on Eilean Siar were also highlighted as an issue during stakeholder engagement, particularly during the tourist season associated with the high proportion of single track roads.

Journey times by rail have also been highlighted as a problem, with rail generally considered to be an unattractive alternative to the car. The Far North Line (FNL) in particular has been noted as having very slow journey times, as have journeys from Elgin to the Central Belt, with stakeholders highlighting that journey times between Edinburgh and London (4 hours 20 minutes) by train, which is twice as far away, take approximately the same time[88] (Elgin to Edinburgh journey time is 3 hours 56 minutes)[89].

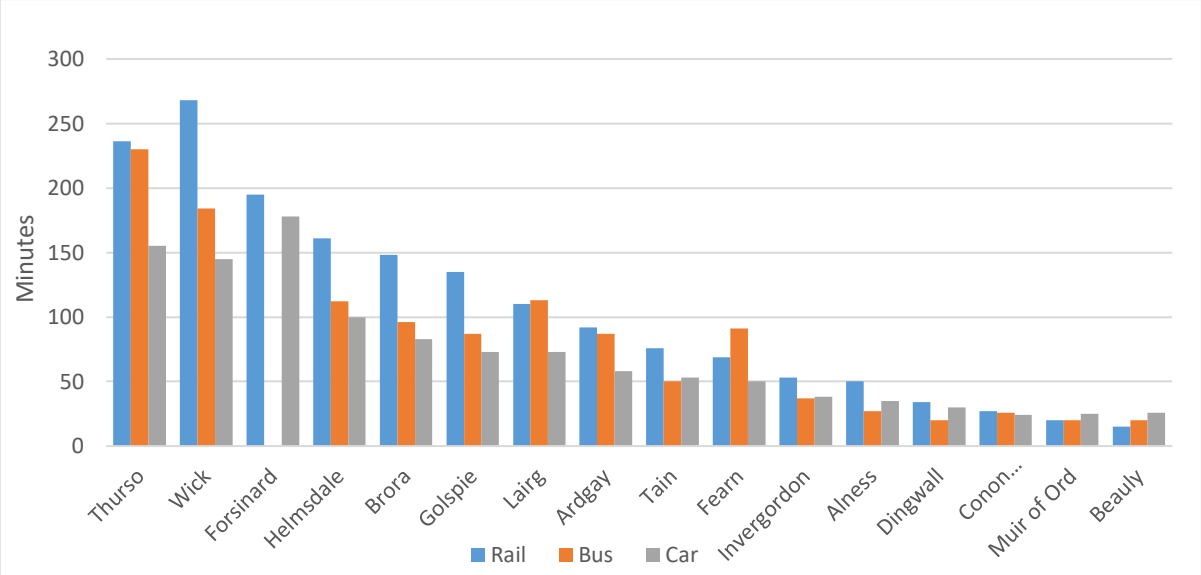


Figure 41: Far North Line (FNL) Journey Times to Inverness

Figure 41[89] shows the average journey times by car, bus and train from stations on the Far North Line (FNL) to Inverness. This highlights that all journeys are quicker by road, and particularly car in most cases, as far south as Dingwall, where journey times start to even out, before rail becomes the quicker option at Muir of Ord. Average journey times from Thurso to Inverness by car are around 2 and a half hours compared to between 3 and a half and 4 hours by bus or rail.

A comparison of rail journey times for bus and car for other lines in the region has also been undertaken, with key findings summarised below:

- On the Kyle Line (KLL), journey times by road are generally faster than rail from Kyle of Lochalsh to Inverness. From Dingwall onwards, rail journey times start to become more competitive with that of the car, where the Kyle Line joins the Far North Line.

[88] Train times checked at national rail enquiries on February 2nd 2020. http://ojp.nationalrail.co.uk/service/timesandfares/EDB/London/130220/0700/dep

[89] Rail times calculated using ScotRail timetable. Bus times were calculated using Traveline. Drive times are based on a 1pm departure on a Wednesday, calculated using Google Maps. Journey times calculated February 2020

- On the West Highland Line (WHL), journey times between Fort William and Glasgow are considerable faster by road than rail. When travelling to Fort William from Mallaig, road is generally faster than rail. Rail journey times start to become more competitive with car around Corpach.
- On the Highland Mainline (HML), rail times are considerably faster than bus and faster than car from Perth to Inverness. This is due to higher line speeds, compared to other routes. Journey times by road will decrease with the dualling of the A9. Bus journey times are currently uncompetitive with rail on this route, which may be due to the number of stops and the routing of the services.
- The Aberdeen to Inverness Line (A2I) has more competitive journey times by rail, with rail being generally over 2 hours faster than bus and approximately 40 minutes faster than car. This is mainly due to slower journey times on the A96.

A review of travel times by rail, bus and car from Inverness to the Central Belt shows that journey times are generally comparable across all modes, however car is slightly faster to all destinations. Travelling to Glasgow is more competitive by rail than travelling to Edinburgh as train journey times between Perth and Glasgow are similar to those by car. Train journey times between Perth and Edinburgh are longer than those by car due to a less direct route.

With the exception of those who travel on the West Highland Mainline (WHL), those travelling to/from the Central Belt by rail from the majority of the region are required to change train in Inverness. As journey times from the North and West of the region to Inverness are disproportionately long by rail, and the fact passengers are required to change service in Inverness, journeys to the Central Belt become more competitive by car. The long journey times contribute to poor connectivity within the region, especially travelling to the Central Belt for a full working day.

Long journey times were also noted to be an issue that affects island communities and this was noted as a particular issue in Eilean Siar where journey times between the islands were said to be just as long as journey times to the Scottish mainland; for example travelling between Barra and Stornoway can typically take 6 hours. It was also highlighted that in Orkney, current levels of transport connectivity mean that Stronsay and Eday are often served together and therefore suffer from very long journey times – up to 3 hours – to get to Kirkwall. It was also reported that it is not always possible to make a day trip to the Outer Orkney Islands or to Orkney Mainland, which impacts on businesses located on the islands or suppliers travelling to the islands. There are also limited opportunities to make trips between the Outer Orkney Islands despite there being many family connections between the islands.

RESILIENCE

Strategic Trunk Road Network Resilience

The resilience of the strategic trunk road network, including routes such as the A82, A87 and A9 North of Inverness, was highlighted as a problem during stakeholder engagement due to the lack of alternative options which results in long diversion routes in the event of road closure. Any diversions or delay have an impact on the reliability of all journeys, including trips by private car, bus, and freight; the latter of which is heavily dependent on road to provide access to key destinations, including ports and harbours across the region.

Diversion route information is presented in Table 11 and illustrates the additional distance and journey time impact of route closures in the region; resilience is an issue particularly on the A82 and A87 with 4 of the longest diversion routes occurring on the A82 and the fifth longest diversion route occurring on the A87.

Table 11: Diversion Routes[90]

START POINT	END POINT	IMPACT	EXISTING ROUTE	DIVERSION ROUTE	DIFFERENCE
A82/A830 Fort William	A82/A86 Spean Bridge	Journey Time	12 mins	300 mins	278 mins
		Journey Distance	7 miles	194 miles	187 miles
A82/A828 Ballachulish	A82/A830 Fort William	Journey Time	30 mins	285 mins	255 mins
		Journey Distance	15 miles	187 miles	172 miles
A82/A828 Spean Bridge	A82/A87 Invergarry	Journey Time	25 mins	220 mins	195 mins
		Journey Distance	15 miles	136 miles	121 miles
A82/A887 Invermoriston	A82/A831 (Non-trunk road) Drumnadrochit	Journey Time	22 mins	200 mins	178 mins
		Journey Distance	13 miles	127 miles	114 miles
A87/A887 Bun Loyne	A87/A890 (Non-trunk road) Auchertyre	Journey Time	45 mins	190 mins	145 mins
		Journey Distance	31 miles	114 miles	83 miles

As shown, in the event of an incident that leads to road closure between Fort William and Spean Bridge, the diversionary route is 187 miles (just under 5 hours) longer than the original route.

Rail Network Resilience

With regards to the rail network, none of the rail stations in the region (included in the

[90] Journey times based on travel on a weekday at 1pm. Source: Scotland TranServ / BEAR Scotland Standard Incident Diversion Routes and Google Maps.

Train Time Reliability by station list[91]) recorded more than 81% of trains arriving on time, with only Mallaig (81%) and Fort William (78%) recording more than 69% of trains arriving on time. Aviemore had the lowest proportion of trains arriving on time, at only 39%, with Elgin (52%) also recording reliability issues.

In addition to reliability issues, a number of sections of the railway network are prone to closure during periods of adverse weather. In August 2019, for example, sections of the West Highland Mainline (WHL) around Crianlarich and Tyndrum were closed for around 2 weeks due to flooding and landslips. While replacement bus services are put into place during such incidents, journey times are adversely affected.

Resilience of the Island Connections

The impact of ferry and air service cancellations was frequently highlighted during stakeholder engagement as being an issue which affects island life, from limiting access to employment, healthcare and other services to adversely impacting the supply of goods and limiting economic development opportunities, including tourism. Specifically, a review of the average age of vessels deployed on the Orkney Inter-Isles ferry service indicates that the average age of vessels is over 30 years[92], with the ageing nature of the fleet in terms of service resilience and reliability highlighted as a concern during stakeholder engagement.

Poor transport links can threaten the short and long term outlook for economic and population growth. Many island-based firms have reported that transportation issues such as disruption to travel due to ferry cancellations have been factors that have caused their business to struggle[93]. When asked to consider risks to their business within the next year or 2, around two-thirds (65%) of panel respondents highlighted poor transport links.

PUBLIC TRANSPORT FREQUENCY AND INTEGRATION

The lack of and limited frequency of public transport, bus services in particular, is a problem particularly in rural areas. Routes around Wick and Caithness were specifically highlighted by stakeholders, however the problem exists across the region. Bus services do not operate at desired times such as early enough to make rail connections or late enough in the evenings to allow for activities to be undertaken after school/work or to access shift work. Local services in Elgin for example do not run early enough to access the early Elgin to Inverness train and then onward connections to the Central Belt. It was suggested by stakeholders that understanding demand is a challenge, and as a result there is a limited understanding of when services should be scheduled to operate.

Accessibility

To support an understanding of public transport accessibility to key services,

91 ScotRail, Performance Update, July/August 2020, https://www.scotrail.co.uk/sites/default/files/assets/download_ct/20200828/VTGmWQNDeZY01EQ6uiA6Bu7-8eoFSyvTA4TKw-d5RkM/performance_update_26july-22august.pdf

92 Orkney Ferries, The Fleet, http://www.orkneyferries.co.uk/the_fleet.php

93 HIE, Business Panel Survey Wave 8, 2017, https://www.hie.co.uk/media/3041/hieplusbusinessplusspanelplussurveyplus-plusjulyplus2017plus-plusreport.pdf

accessibility analysis using TRACC[94] has been undertaken. The TRACC analysis, presented in Section 2.3.5, shows that the majority of the Highlands and Islands region cannot access a key employment centre by public transport within 2 hours on a typical weekday morning. Large areas in the north and west of the region on the Scottish mainland and a high proportion of island residents are shown as having no access to the key employment centres selected for the analysis by public transport, within a 2 hour journey time. For example, in Eilean Siar, there is a lack of public transport access to Stornoway south of Tarbet on the Isle of Harris. This provides significant challenges to those within the region and increases the reliability on the private car, as there are no viable alternatives.

In terms of access to healthcare, the TRACC analysis shows that generally residents that live near the bus network or rail stations can access some form of healthcare at a GP or Hospital within 120 minutes by public transport. However, large parts of the region, distant from major settlements, cannot access healthcare services within 2 hours by public transport, and this is particularly the case when considering access to specialist healthcare, with access to certain types of healthcare from some areas in the region, particularly Eilean Siar and Orkney Islands, requiring access by air, which can be expensive. This is not only an issue for those accessing the healthcare services, but also those wishing to visited friends and relatives in hospital.

Integration

Integration of public transport services has also been highlighted as a problem, with examples including:

- A lack of public transport connections at Scrabster and Gills Bay; while it was noted that there used to be a bus linking Scrabster with Thurso rail station, passengers currently require to use a taxi to make this journey. It has also been noted that there have been issues with a lack of a bus service to meet the Pentland Ferries vessel at Gills Bay, leaving foot passengers stranded.
- Poor integration of rail and bus services between Mallaig and Inverness. Although the train runs straight from Mallaig to Glasgow, this takes over 5 hours, and buses between Mallaig and Fort William often do not connect with those between Fort William and Glasgow.
- Poor alignment of rail services from Invergordon to Inverness with cruise ship arrivals.

DEPENDENCE ON PRIVATE CAR

The geography of the area, the centralisation of key services, and the lack of frequent public transport access means that many in the region are dependent on cars and often dependent on more than one car per household.

94 TRACC - multimodal accessibility and journey time analysis tool.

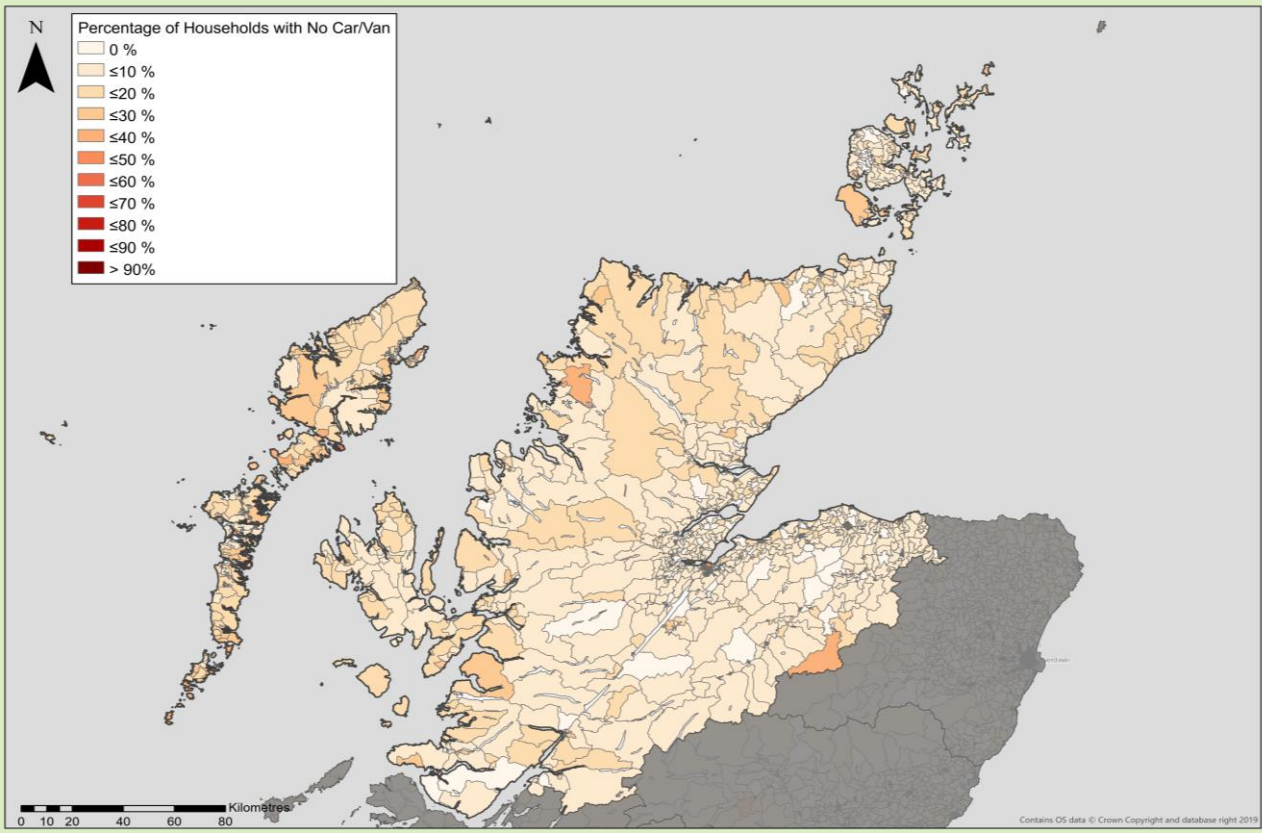


Figure 42: Percentage of Households with no car/van available in the Highlands and Islands

(Click image to enlarge figure)

Figure 42 shows the percentage of households with no car or van available. Most of the data zones (76%) have less than 30% (Scottish average) of households with no car or van available, highlighting the high car availability in the region[95].

Data zones with highest levels of no car availability can be found in urban areas such as Inverness city centre, Kirkwall and Thurso where services are physically closer and there are alternative modes of transport to reach them.

In order to reduce reliance on the private car, particularly for short journeys, potential opportunities to develop the active travel network were highlighted. However, during stakeholder consultation, it was noted that available funding for the scale of active travel projects desired to improve walking and cycling for communities across the region can present challenges. With many of the communities in this region being classified as remote rural, these linkages would be necessarily lengthy and costly when delivered to the standard necessary to secure funding support. Weather conditions and local topography could also increase the cost of walking and cycling infrastructure. Local Authorities have also highlighted that there are difficulties in providing the match funding often necessary to finance schemes due to competing pressures on Local Authority budgets.

[95] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/

3.2.2. Online Survey: Reported Problems in the Highlands and 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 transport issues and challenges. As part of the survey, respondents were asked to rank their top 3 priority problems.

Top ranking problems reported for the Highlands and Islands region included:

- **Roads - Quality of roads infrastructure**, which 62 respondents ranked as their top priority and 95 ranked within their top 3;
- **Cycling - Availability of safe cycling infrastructure**, which 54 respondents ranked as their top priority and 92 ranked within their top 3;
- **Bus - Frequency and reliability of bus services** which 37 respondents ranked as their top priority and 92 ranked within their top 3;

Other commonly raised areas of concern related to cost of rail travel, availability of safe walking/wheeling infrastructure, accessibility to key services by bus, and availability of funding to maintain existing transport assets.

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

3.2.3. *Opportunities*

This section provides a summary of key opportunity themes identified for the Highlands and Islands region.

ECONOMIC GROWTH

There are a number of strong growth sectors within the Highlands and Islands, with the region performing particularly well in terms of food and drink production, tourism, and energy production.

In terms of food and drink production, the agriculture, forestry and fishing industries made up more than 1 in 10 jobs in the region in 2017, with particular growth anticipated in the aquaculture industry, which is expected to grow 50% by 2035. Another important aspect of food and drink production for the region is the whisky trade. Whisky is a high value product, for which Scotland is globally renowned. Whisky production contributes significantly to the Scottish economy and that of the Highlands & Islands region. This is particularly true in Moray, where the popularity of Speyside whiskies has contributed to tourism in the area through the development of the region's Malt Whisky Trail, with Moray alone home to around 44% of all Malt Whisky distilleries in Scotland, supporting around 1,500 jobs[96].

Tourism is also a growth sector for the region. During 2018, The Highland Council area welcomed 521,000 international visitors, totalling just over 2 million bed nights and a spend of £195 million. This was around 15% in terms of volume and just under 9% in terms of value of total international tourism in Scotland for 2018[97]. In 2017, the Western Isles saw 148,641 visitors that spent just over £51 million over the year[98]. The Orkney Islands welcomed 174,273 visitors in total in 2017, who spent just under £50 million[99]. These figures do not include the many cruise line passengers who also chose to spend time on Orkney. The sustainable tourism sector employed 16,000 people in The Highland Council area and 3,000 in the Moray Council area in 2016 and brought in approximately £320 million GVA. This is clearly an important sector to both the regional and national economy. Both the number of visitors travelling from within the UK, and the number of international visitors to the region have increased over recent years. On average, visitors spent 4 days in the region; higher than the Scotland average of 3.3 days.

As part of the STPR2 engagement process, the opportunity to increase the number of tourists using more sustainable modes, including active travel, bus and rail was highlighted. This unmet demand for public transport amongst tourists could contribute to higher public transport usage, potentially improving the commercial viability/value for

[96] HIE, 2019-2022 Strategy, 2019, https://www.hie.co.uk/media/5006/strategyplusplanplus2019-2022-1.pdf

[97] Visit Scotland, Highland Factsheet, 2018, https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers-2/regional-factsheets/highland-factsheet-2018.pdf

[98] Comhairle nan Eilean Siar and Visit Scotland, The Outer Hebrides Visitor Survey, 2017, https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers/outer-hebrides-report---may-18.pdf

[99] Orkney Islands Council and Visit Scotland, Orkney Islands Visitor Survey, 2017, https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers/orkney-exec-summary---may-18.pdf

money of any public transport improvements to address transport problems in the area. This in turn would help to improve visitor experience, encouraging tourists to return to the region and recommend the region to others, helping to grow the tourism industry further.

Findings from HIE's regular Business Panel Surveys of at least 1,000 businesses and social enterprises in the Highlands and Islands highlight the critical role of transport infrastructure to the regional economy. When firms were asked about measures that might encourage them to make future investment, some 40% highlighted investment in transport infrastructure as an important enabler[100]. This suggests that economic growth would be stimulated where locations are made more attractive through transport improvements.

A six-week rail freight trial, transporting timber from Georgemas Junction in Caithness to the Millburn Yard in Inverness, was undertaken in the summer of 2020. The trial operated 2 to 3 trains per week and is estimated to have reduced the number of HGVs on the road by 250, resulting in a saving of 55,000 miles travelled by road[101]. Transferring freight to rail has a number of benefits to the region, including reducing the number of HGVs on the road, resulting in a positive impact on the environment. Providing an alternative mode of travel for freight also reduces the reliance on the road network to transport goods and materials from the region, improving the resilience of the sector.

PROGRESSION TOWARDS CARBON NEUTRALITY

Renewable Energy

Another growth sector for the region is the energy sector, with particular opportunities in renewable energy to draw on transferrable skills from the oil and gas sector, as renewable sources become more prevalent, securing future employment opportunities[102].

The Orkney Sustainable Energy Strategy 2017 – 2025[103] illustrates the commitment to developing and harnessing renewables in the region. The strategy outlines the progress that has been made; with it being noted for example that the Orkney Islands have the largest number of electric vehicles per capita in the UK, but also the opportunities for improvement.

Figure 43, overleaf, shows the average distance to electric vehicle charging points for the region, demonstrating that although some areas, including parts of Orkney, Elgin, and Wick, have good accessibility to charging points, there are large areas, particularly

[100] HIE, Business Panel Survey Wave 7, 2017, https://www.hie.co.uk/media/3043/hieplusbusinesspluspanelplussurveyplus-plusoctplus2017plus-plusreport.pdf
[101] Scottish Forestry, Timber rail trial on track, September 2020, https://forestry.gov.scot/news-releases/timber-rail-trial-on-track
[102] HIE, Investment in Energy, 2019, https://www.hie.co.uk/our-region/our-growth-sectors/energy/investment-in-energy/
[103] Energy of Orkney, Orkney Sustainable Energy Strategy 2017 - 2025, http://www.oref.co.uk/wp-content/uploads/2017/10/Orkney-Sustainable-Energy-Strategy-2017-2025.pdf

to the west of the region, where there is limited charging infrastructure[104].

The region has high rates of car availability[105], with only 20% of households without a car, compared to 31% in Scotland as a whole, and 33% with more than 1 car available, compared to 27% for Scotland as a whole. In 2018, CO_2 emissions per capita[106] for The Highland Council area were the fourth highest in Scotland at 2.6 tons per capita. In Comhairle nan Eilean Siar, CO_2 emissions per capita were recorded as 1.8ts, with CO_2 emissions in the Moray Council area slightly lower at 1.7 tons per capita. CO_2 emissions in the Orkney Council area were the lowest of the four council areas within the region and one of the lowest in Scotland at 1.4 tons per capita and a strategy has been developed focused on reducing the Orkney Island's carbon footprint further.

Low carbon bus initiatives have been launched in the Orkney and Highland areas, with low carbon ferries, operating on biofuels, also in operation within the HITRANs region[107]. Further decarbonising the transport fleet presents additional opportunities to move towards net zero, with alternative fuelled planes, trains and ferries offering an opportunity to reduce the area's carbon footprint, improve connectivity, and reduce the cost of providing transport services, making transport more affordable. The region is uniquely positioned to take advantage of some of the best renewable energy resources in Europe, from wind, wave and tidal, and by becoming a net exporter of energy can meet a proportion of the energy requirements of Scotland[108].

Modal Shift

Approximately 2% of trips to work in the region[109] are made by bike and 11% on foot, both of which are slightly higher than the national average. However, only 4% of trips are made by bus and 1% by rail (compared to the national averages of 10% and 4% respectively). Accessibility to public transport has been highlighted as a significant issue in the region and modal shift may be a particular issue in this region given its rural nature. Improving public transport could contribute to increasing access to employment opportunities within the region, particularly in rural areas. Additionally, there is a higher proportion of people working from home and travelling very short distances to work in the region[110] (under 2km), with 4.4 percentage points and 5 percentage points more than the national benchmarks respectively, presenting an opportunity for modal shift to active travel. The shorter travel distances associated with living on some island locations, supported by the renewable energy potential of island regions provides a clear opportunity to increase transport to more sustainable modes and modes with lower carbon energy sources. This can also be said for key rural towns and communities in the

[104] Department for Transport, Find and use data on public electric vehicle chargepoints, 2020, https://www.gov.uk/guidance/find-and-use-data-on-public-electric-vehicle-chargepoints#accessing-data-on-ncr
[105] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/
[106] UK Government, UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018, 2020, https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018
[107] HITRANS, Draft Updated Regional Transport Strategy, May 2017, *ibid*
[108] Convention of Highlands and Islands, 2016, https://news.gov.scot/news/renewables-could-boost-scottish-islands
[109] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/
[110] NRS, Census 2011 (Scotland), 2011, https://scotlandscensus.gov.uk/

region such as Elgin, Lossiemouth, Fochabers, Keith and Fort William particularly where they are compact and there is the potential for short journeys to be made by active travel.

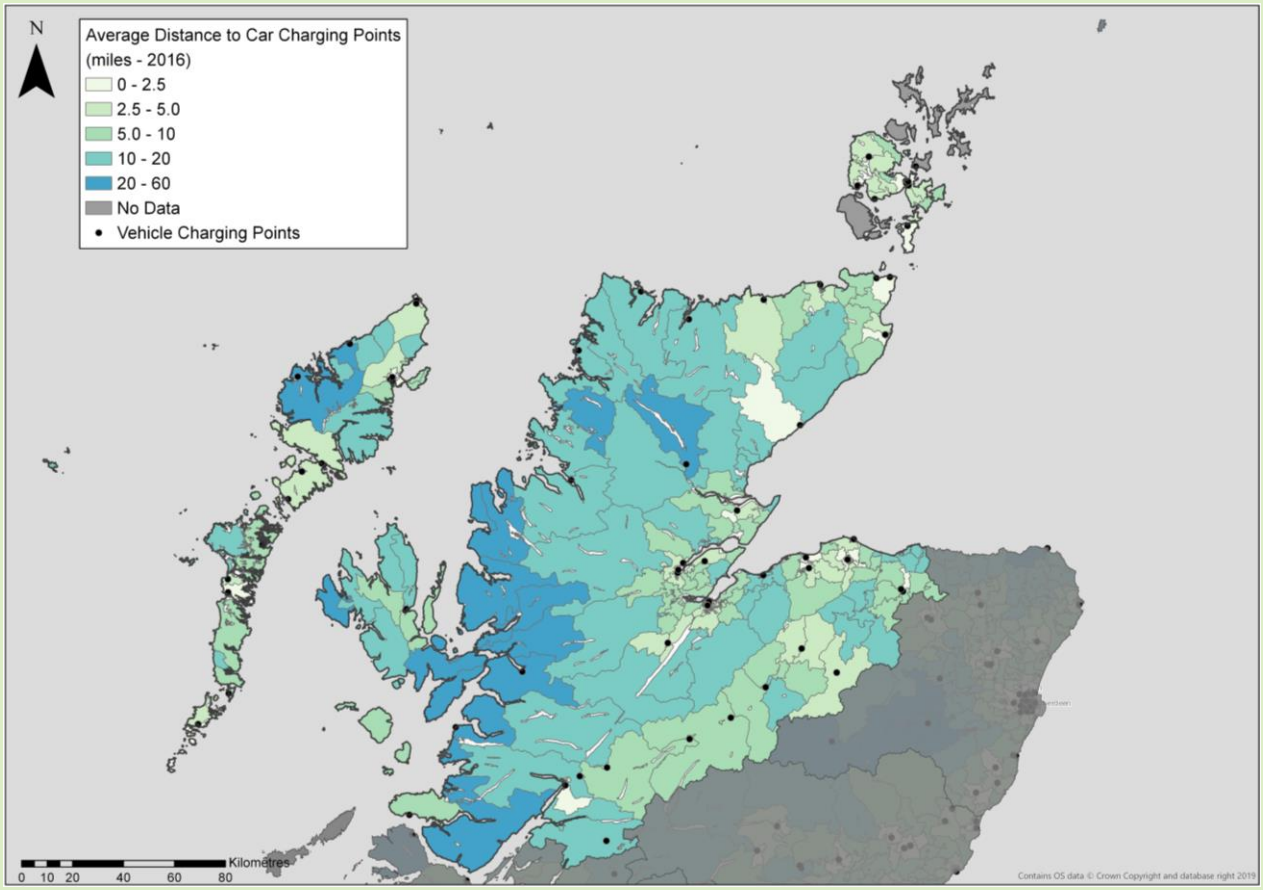


Figure 43: Average Distance to Charging Points within the Highlands and Islands Region

(Click image to enlarge figure)

DIGITAL CONNECTIVITY

Technology opportunities include understanding how future technologies could impact transport, how technology could be used to improve transport, and how to future-proof transport by taking steps now to prevent problems in the future.

The opportunities brought by improving broadband access and speed was frequently highlighted during stakeholder engagement, including the potential benefits of increased levels of working from home and reducing the need to travel. As shown in Figure 44, there is scope to increase digital connectivity in the region. All local authorities in the region sit in the bottom half of the table. Highland, the Western Isles and the Orkney Islands make up 3 of the 5 local authorities which have the lowest average download speed and the lowest percentage of households with superfast broadband.

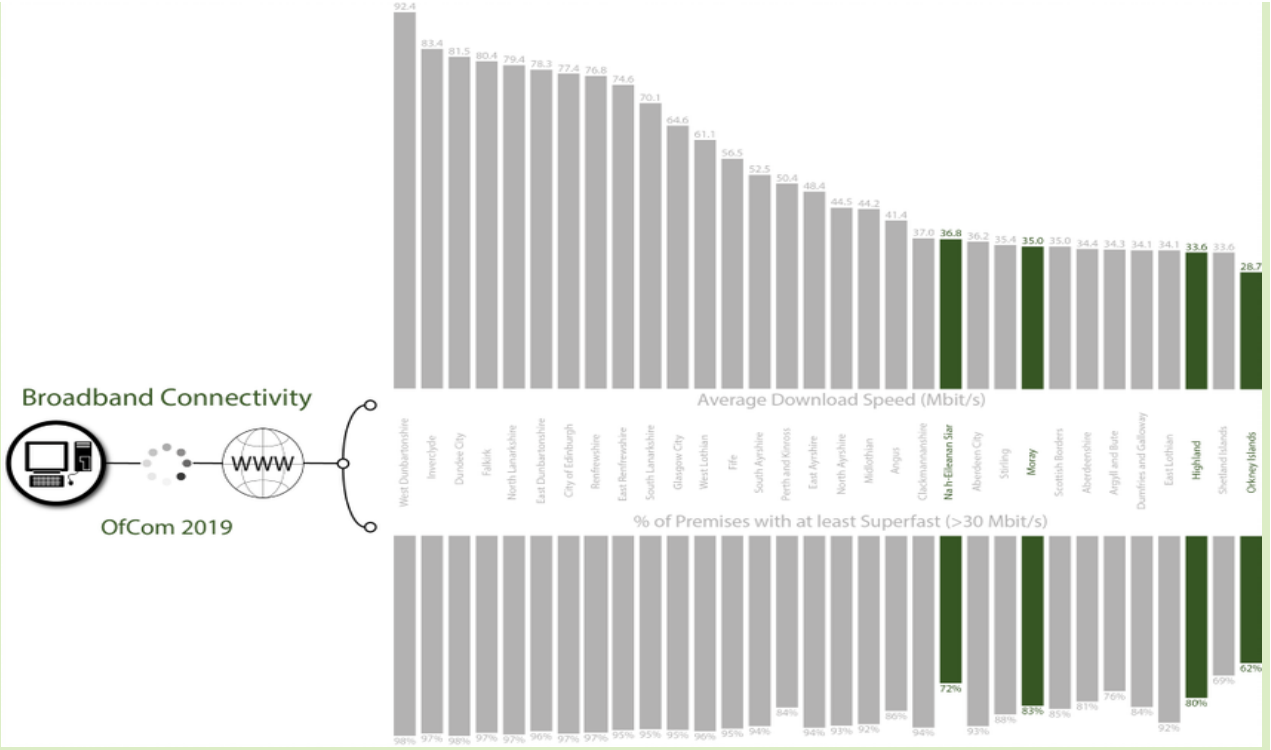


Figure 44: Broadband Connectivity (Highlands and Islands Local Authorities vs All Local Authorities)[111]

The potential for technology to increase the efficiency of collecting and using data was also highlighted, with opportunities to share data across modes and organisations to improve provision and better understand travel demand. Digital advances could also have an impact on public transport demand. Real time tracking of buses, for example, could instil confidence in services by providing updates to the user, and enabling users to plan their journey with greater certainty. Applications that allow the user to view journey times and real-time information (such as road closures, delays or diversions) not only on bus but across modes would be welcome in the region.

3.2.4. Future Conditions

The problems and opportunities identified above are focused on the transport system pre Covid19 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 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 transport disrupters and uncertainties and is accordingly being carried out at a national level for the STPR2 programme as a whole..

Notwithstanding the above, for the Highlands and Islands region, a review of the national transport model, the Transport Model for Scotland (TMfS), has been undertaken[112].

[111] Ofcom, Connected Nations, 2019, https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2019/data-downloads

[112] Transport Scotland, Transport Forecasts, 2018, https://www.transport.gov.scot/media/43316/transport-forecasts-2018.pdf

Assuming current policies remain in place and no interventions beyond those already committed will be undertaken, the model suggests that between 2014 and 2037 the following may occur:

- Road Traffic (billion vehicle miles p.a.): a 36.4% increase in the region, on par with the national average growth of 37.3%.
- Road Delays (PM Peak Road Delay seconds/mile): a 58.1% increase in the region, higher than the 36.5% rise forecast across Scotland.
- Bus Passenger mileage forecasts: a 1.6% increase, in contrast to a decline of 5.1% across Scotland.
- Rail Passenger mileage forecast: a 28% increase, lower than the national increase of 42.1%.

3.3. Problems & Opportunities Summary

- Connectivity: SIMD data highlights that one third of data zones in the Highlands and Islands region are ranked amongst the lowest 10% in Scotland. The centralisation of services, in particular medical services, facilitates this problem with many residents having to travel longer distances to reach these services. Timing and availability of public transport also restrict connectivity between the Scottish mainland and the Eilean Siar and the Orkney Islands, with residents having trouble completing a full working day in the central belt due to long journey times.
- Transport Poverty: Transport expenditure and poverty is generally higher in rural parts of the region. The majority of data zones spend between 17-18% of their budget on transport, compared to the national average of 14%. This issue is exacerbated by high fuel costs within the area.
- Capacity Constraints: Air and ferry services have been highlighted as suffering from capacity problems in the region. Passenger numbers on ferries in the Western Isles have been increasing since the introduction of RET while passenger numbers on ferries services to Orkney were also highlighted as increasing. Capacity of air services was also highlighted as an issue, with utilisation of flights to Orkney increasing by 19% since 2012. Capacity issues were highlighted on the road network particularly during the peak tourist season. This is an issue on both the Scottish mainland and the Islands, with the single track road network on the islands being put under pressure by additional vehicles and cyclists.
- Journey Times: Longer distances between key origins and destinations in addition to capacity constraints on the network result in long journey times in the region. Stakeholder highlighted that it is not unusual to spend a disproportionate amount of time travelling by car per miles driven compared to other parts of the country. Journey times from the region's towns to Inverness on average is 0.72 miles per minute, compared to the central belt with an average of 0.84 miles per minute. Rail services are also highlighted as having a disproportionately high journey time compared to other regions due to being single track.
- Resilience: Lack of resilience of the road and ferry networks have been reported as a problem throughout the region. Road closures on the A82, A87 and A9 north of Inverness lead to long diversionary routes. A road closure between Fort William and Spean Bridge (12 miles) can cause a 278 mile diversion. Ferry and air cancellations are an issue for islanders, for whom, it limits access to employment and healthcare and can impact on the running of businesses.
- Public Transport Frequency and Integration: A lack of public transport prevents access to services and can lead to forced car ownership. There is limited integration between

public transport, particularly in rural areas, and limited integration between bus, rail and ferries with low frequency and limited operating hours. Bus patronage has fallen in recent years and bus mileage, bus connectivity and bus quality have been cited by stakeholders as contributory factors to this decline.

- Dependence on Private Car: Centralisation of services combined with the size of the area and low population density makes it difficult to provide an attractive public transport system within the region, resulting in a high car ownership. Car availability data shows that the areas with the lowest levels of car availability are found in urban areas where services are physically closer and where there are alternative modes to reach them.
- There are opportunities associated with: Economic growth, particularly in relation to active travel tourism; Digital connectivity, and the availability of renewable energy as reflected in strategies such as Orkney's commitment to developing and harnessing energy from renewable sources set out in the Orkney Sustainable Energy Strategy 2017 - 2025.

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 express the outcomes sought by the study, be based on a comprehensive understanding of problems and opportunities, and lend themselves to clear and transparent appraisal of transport options. They will be a key appraisal tool from initial option identification and sifting through to full scheme appraisal and subsequent monitoring/evaluation.

For STPR2, TPOs have been developed to sit at a national level, supported by regional sub-objectives. At a national level, an overarching set of programme-level TPOs have been established which are closely aligned with the vision, 4 priorities, 12 outcomes and 14 policies contained within NTS2.

A series of regional sub-objectives sits within the overall direction of the national TPOs but with a focus on the specific evidence-based problems and opportunities for the Highlands and Islands region. The national TPOs and regional sub-objectives are presented in Table 12 below.

Table 12: National TPOs and Regional sub-objectives

NATIONAL OBJECTIVES	HIGHLANDS AND ISLANDS REGION SUB-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 Highlands and Islands Economy, through the development of a low carbon transport system.* ▪ *Increase the mode share of active travel for shorter, everyday journeys.* ▪ *Increase the mode 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 main population centres.* ▪ *Reduce emissions generated by the strategic transport system, with a focus on utilising renewable energy to provide connectivity with the islands and rural communities.*
An inclusive strategic transport system that improves the affordability and accessibility of public transport.	▪ *Increase public transport mode 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 rural residents, sustainably increasing the population.* ▪ *Reduce transport poverty, by increasing travel choice for the*

NATIONAL OBJECTIVES	HIGHLANDS AND ISLANDS REGION SUB-OBJECTIVES
	Island and rural communities. ▪ *Reduce the reliance on private car for access to key centres for healthcare, employment and education.*
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.	▪ *Reduce the adverse impacts of the strategic transport system on communities by embedding the place-principle in the changes to the strategic transport system.* ▪ *Increase the mode share of active travel for shorter, everyday journeys.* ▪ *Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of the emerging NPF4.*
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.	▪ *Increase sustainable access to labour markets and key centres for employment, education and training recognising the remote nature of large parts of the region.* ▪ *Increase competitive transport access to key domestic and international markets, by reducing costs and improving journey time reliability for business and commercial transport, with an additional focus on facilitating a viable working day in the Central Belt, by public transport.* ▪ *Increase resilience of accesses to key domestic and international markets to encourage people to live, work, study, visit and invest in the Highlands and Islands.* ▪ *Increase the mode share of freight by sustainable modes*.
A reliable and resilient strategic transport system that is safe and secure for users.	▪ *Improve resilience from disruption through adaptation of the region's trunk road, rail and strategic ferry infrastructure.* ▪ *Reduce transport related casualties in line with reduction targets.* ▪ *Improve resilience through climate change adaptation within the management and maintenance of trunk road, rail and ferry infrastructure.*

Table 13 demonstrates the alignment of the objectives/outcomes developed for the Highlands and Islands with the identified problems and opportunity themes in the region.

Table 13: Mapping of Problem and Opportunity Themes to Transport Planning Objectives

National Objective/Outcome	Regional Sub-Objectives	Problem Themes							Opportunity Themes		
		Connectivity	Transport Poverty	Capacity Constraints	Journey Times	Resilience	Public Transport Frequency and Integration	Dependence on Private Car	Economic Growth	Progression towards Carbon Neutrality	Digital Connectivity
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 Highlands and Islands Economy, through the development of a low carbon transport system						■	■	■	■	
	Increase the mode share of active travel for shorter, everyday journeys.	■		■							
	Increase the mode 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 main population centres	■	■	■			■	■	■		
	Reduce emissions generated by the strategic transport systems, with a focus on utilising renewable energy to provide connectivity with the islands and rural communities.	■		■				■		■	
An inclusive strategic transport system that improves the affordability and accessibility of public transport	Increase public transport mode 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 rural residents, sustainably increasing the population.	■	■				■	■	■		■
	Reduce transport poverty, by increasing travel choice for the Island and rural communities.	■	■	■		■	■	■	■		
	Reduce the reliance on private car for access to key centres for healthcare, employment and education.	■	■	■	■	■	■	■	■		
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing	Reduce the adverse impacts of the strategic transport system on communities by embedding the place-principle in the changes to the strategic transport system						■	■	■		
	Increase the mode share of active travel for shorter, everyday journeys.	■						■			
	Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of the emerging NPF4	■	■				■	■	■		
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland	Increase sustainable access to labour markets and key centres for employment, education and training recognising the remote nature of large parts of the region.	■	■				■	■	■		■
	Increase competitive transport access to key domestic and international markets, by reducing costs and improving journey time reliability for business and commercial transport, with an additional focus on facilitating a viable working day in the Central Belt, by public transport	■		■	■	■	■	■	■		■
	Increase resilience of accesses to key domestic and international markets to	■		■	■	■	■		■		■

	encourage people to live, work, study, visit and invest in the Highlands and Islands.										
	Increase the mode share of freight by sustainable modes										
A reliable and resilient strategic transport system that is safe and secure for users	Improve resilience from disruption through adaptation of the region's trunk road, rail and strategic ferry infrastructure.										
	Reduce transport related casualties in line with reduction targets.										
	Improve resilience through climate change adaptation within the management and maintenance of trunk road, rail and ferry infrastructure.										

5. 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 and Transport Scotland policies and strategies. Specifically, this will include:

- Any transport project that plays a significant part in supporting the 4 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, the interventions considered within STPR2 may include:

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

5.2. Approach

In keeping with the principles of STAG, the Initial Appraisal: Case for Change has been developed to provide a robust method, to generate, clean and sift options; ensuring a broad range of options across all modes are considered.

The STPR2 option generation, cleaning and sifting approach is summarised in Figure 45

alongside the number of options generated at various key stages that are specific to the Highlands and Islands Region.

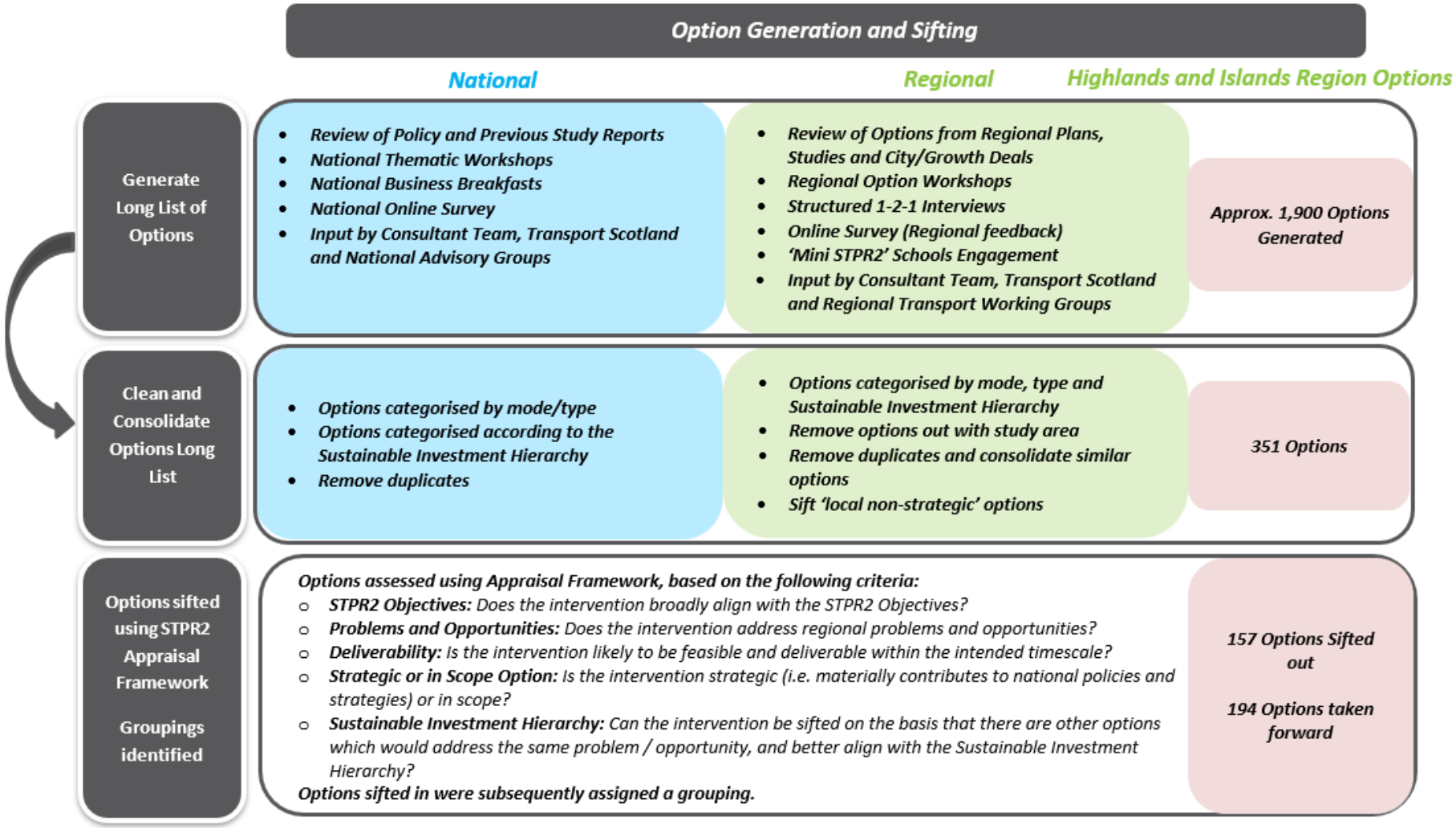


Figure 45: Approach to Option Generation and Sifting

5.2.1. *Generation of Long List of Initial 'Options'*

A long list of initial transport options was generated based on a range of sources, including: a review of options identified from recent local and regional studies and via extensive stakeholder engagement and public consultation activities. This included Stakeholder Workshops, Structured Telephone Interviews, an Elected Members briefing and an Online Survey. Options were also generated through discussions with the Regional Transport Working Group and supplemented by the Consultant team. Options were identified across all modes and encapsulate many of the main routes and key centres across the regions. Some of these options were well developed and had a clearly defined output, others were suggestions and ideas. All of these ideas/suggestions/options were collated and considered at this stage.

Specific to the Highlands and Islands Region, there were over 1,900 options generated.

5.2.2. *Option Cleaning*

Although 1,900 individual ideas/suggestions/options were identified, this included a number that required further definition, duplicated options and options which were broadly similar. As such, an exercise was undertaken to clean this 'long list'. Options were reviewed at a regional level or a national level depending on the initial source of the information. Options that required further definition were developed, and similar options were consolidated.

Following the option cleaning exercise, 351 options were retained in the long list of interventions to be sifted specific to the Highlands and Islands Region.

5.2.3. *Option Sifting & Grouping*

Each of the options included in the clean list have been assessed using an Option Sifting methodology developed to drive consistency in the sifting of options across STPR2.

Options will be assessed against the range of criteria shown in Figure 45, to ensure that any options removed from this stage of the process are done so on a robust and transparent basis. Importantly, this included consideration of the Sustainable Investment Hierarchy. Figure 46 provides more detail of the sifting process.

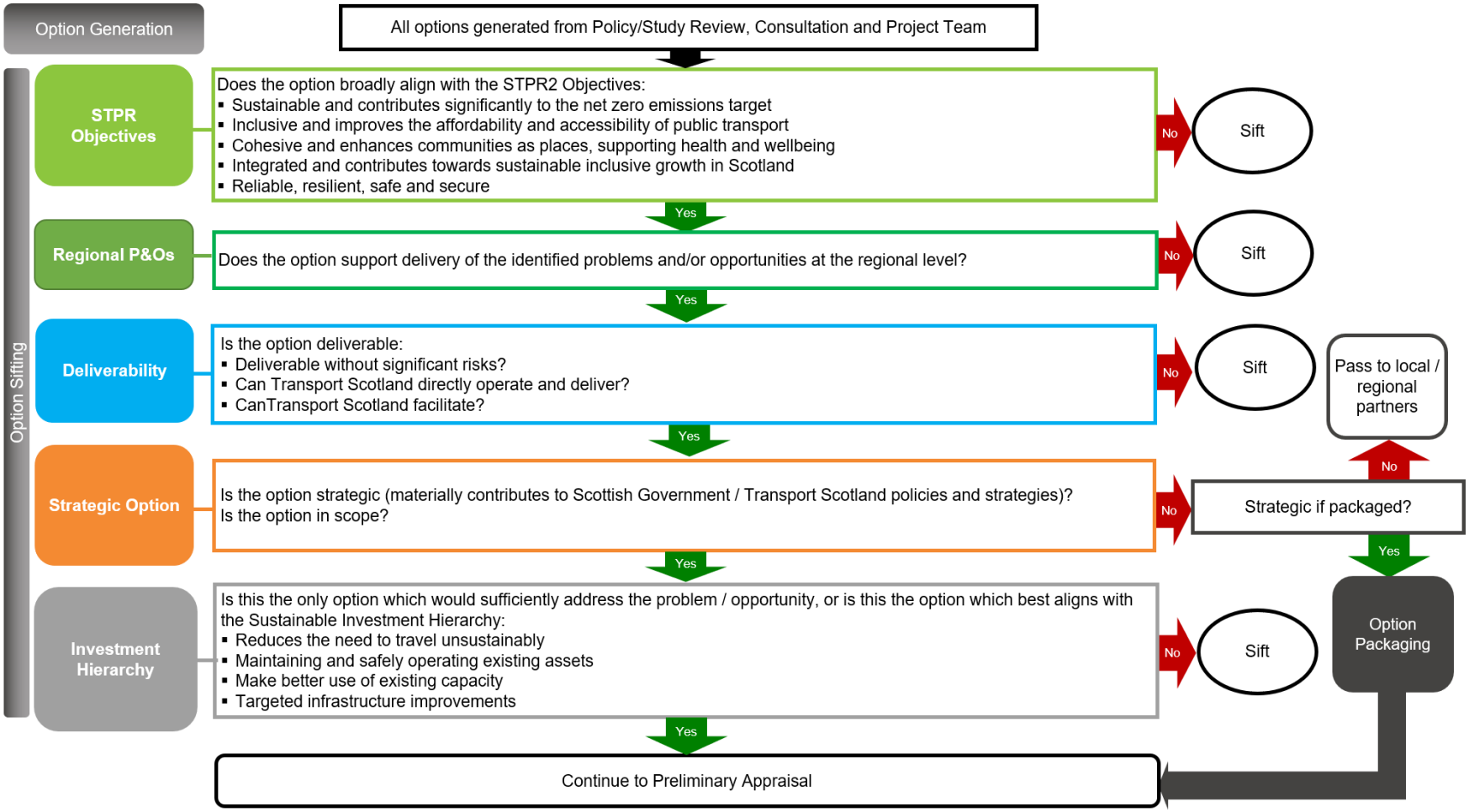


Figure 46: Options sifting process

Based on the methodology above, options were either:

- Sifted in for further consideration; or
- Sifted out from the process. If appropriate, these will be passed to other areas of Transport Scotland / Scottish Government, or the appropriate local/regional transport authorities and partnerships (through the RTWGs) for consideration out with STPR2.

5.2.4 Options sifted out

Options were sifted out at this stage for one of the following reasons:

- Option is out of scope and/or
- Option does not address the problems / opportunities in the region and/or
- Poor performance against transport planning objectives/sifting criteria, and/or
- Deliverability concerns and/or
- The problems/ opportunities are better addressed through another option and/or
- The option is being progressed out with STPR2.

A full list of options that were sifted out across all regions and at a national level is provided as an Appendix to the National Case for Change. In the Highlands and Islands Region, 157 options were sifted out at this stage.

5.2.5 Options sifted in

Following the sifting exercise, 194 options specific to the Highlands and Islands Region remain in the process. There are many of these options that share common traits across the regions and many options which in isolation would not deliver the strategic improvements STPR2 is seeking to deliver. Recognising the strategic and national dimension, options that have been sifted in for further appraisal have been allocated to Groupings. Groupings have been established to:

- allow similar options to be collated together to provide a more manageable list for further appraisal;
- collate similar options across regions, thus aiding consistency in definition and appraisal; and, where appropriate
- allow options that may, on their own merit, not be considered strategic, however when grouped address the identified national and regional Problems and Opportunities.

These Groupings will be appraised in the next stages of STPR2. The Groupings represent the range of interventions that STPR2 will consider in the appraisal stages. The list of Groupings along with a short description is provided in Table 4 and a full list of options sifted in for further consideration alongside their allocated Grouping is provided in an Appendix to the National Case for Change.

Table 14: Groupings proposed to progress for STPR2 appraisal

Category	Grouping Name	Grouping Description
Active Travel	Access to Bikes	Options to improve access to bikes (conventional and e-bikes) and equipment such as charging facilities, lights, locks and helmets through bike libraries and other initiatives
Active Travel	Active Travel Hubs	Options to provide active travel hubs in Scotland's cities and major towns that provide advice, bike storage and maintenance facilities
Active Travel	Connect More Settlements to the National Cycle Network (NCN)	Options to expand the NCN to reach more settlements
Active Travel	Cycle / Public Transport Integration	Options (outside of franchise commitments) which allow the safe and efficient transport of bikes on public transport (bus, rail and ferry) and at transport hubs.
Active Travel	Current National Cycle Network	Options to upgrade the existing NCN, including addressing issues where there are safety concerns at on-road sections since their addition to the network.
Active Travel	Information & Signage for Active Travel	Options to provide good quality information, journey planning and signage of active travel networks and facilities

Category	Grouping Name	Grouping Description
Active Travel	Major Trip Attractor Accessibility by Active Travel	Options to provide safe, high quality active travel routes that enable easy access to major trip attractors (e.g. hospitals, major employment sites) in Scotland's cities and towns
Active Travel	Liveable Neighbourhoods	Options to make urban and suburban neighbourhoods in Scotland's cities and towns more conducive for active travel by improving conditions for walking, wheeling and cycling and reducing traffic dominance
Active Travel	Strategic Road Severance	Options to improve facilities and crossings for pedestrians and cyclists in locations where strategic roads have a significant severance effect in communities
Active Travel	Public Bike Hire Schemes	Options to facilitate the roll out of public bike hire schemes to enable their use by more people in more locations across Scotland
Active Travel	Quiet Roads	Options to implement quiet roads, potentially including measures such as traffic calming measures and speed limit reductions that form parts of strategic active travel networks, where appropriate
Active Travel	School Active Travel	Options to provide opportunities for safe and high quality active travel routes that enables school pupils resident in Scotland's cities and towns to walk, wheel or cycle to school
Active Travel	Strategic Expansions of the National Cycle Network	Options to expand the NCN to reach more settlements and complete strategic gaps in the network.

Category	Grouping Name	Grouping Description
Active Travel	Footway Enhancements on Strategic Routes	Options to upgrade existing footways on trunk roads and principal routes in our towns and cities, such as width, surfacing, drainage and drop kerbs at crossings. In addition, safe crossing facilities on major desire lines and adequate security (such as sightlines, lighting) where feasible.
Active Travel	Strategic Active Travel Corridors within and between Urban Areas (Active Freeways)	Options to provide high quality, segregated active travel routes on major distributor routes in Scotland's towns and cities, with connections to major trip attractors
Active Travel	Thriving Centres	Options to make town and neighbourhood centres more conducive for active travel by improving the urban realm and reducing the dominance of vehicular traffic and car parking
Active Travel	Transport Node Connectivity	Options to provide high quality active travel routes between public transport nodes (rail stations, bus stations, interchange facilities) and their catchments (such as residential and key trip attractors), along with high quality cycle parking at the nodes
Active Travel	Village – Town Active Travel Connections	Options to provide active travel routes from villages to a nearby town or regional centre.
Active Travel	Former Rail Route Re-use for active travel	Options to create more active travel routes on former rail lines
Active Travel	Urban Placemaking	Options to facilitate placemaking schemes to improve the quality and ambiance of street spaces in Scotland's cities, towns and villages

Category	Grouping Name	Grouping Description
Behaviour Change	School Streets	Options to facilitate traffic exclusion zones on streets where it is appropriate to do so near schools at school start/end times
Behaviour Change	National Behaviour Change Programme	Options to implement a national, long-term campaign to promote the benefits of active and sustainable travel and give information on appropriate opportunities to do so
Behaviour Change	Regional Behaviour Change Programmes	Options to support regional, long-term campaigns to promote the benefits of active and sustainable travel and give information on appropriate local opportunities to do so
Behaviour Change	Expansion of Car Clubs	Options to expand car club availability and use across Scotland
Behaviour Change	Improved Information on Sustainable Travel Modes	Options to improve information (such as printed, real time and on-vehicle announcements) about active and sustainable travel routes and services
Behaviour Change	Sustainable Travel towns/Cities	City/Town-wide initiatives to give a holistic programme of promotion on active and sustainable travel choices
Behaviour Change	Road Safety Campaigns	Options that consider a national, long-term campaign (and/or support local/regional campaigns) to promote better driver behaviour and reduce road safety fears including people travelling actively
Behaviour Change	Travel Demand Management	Measures to effectively manage travel demand and encourage more sustainable travel options.

Category	Grouping Name	Grouping Description
Behaviour Change	Low Emission Zones (LEZ)	Options related to Low Emission Zones (LEZ), i.e. where only certain vehicles are allowed to enter, based on their emissions standards.
Bus	Bus Priority Infrastructure	Options to increase the roll out of bus priority measures, and where already available, improve existing measures
Bus	Decarbonisation of the Bus Network	Options related to decarbonisation of the bus network (incl. fleet).
Bus	Demand Responsive Transport (DRT) / Community Transport	Measures to support Demand Responsive (DRT) and Community Transport, excluding revenue funding
Rail	Central & North East Scotland Rail Improvements	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and linespeed improvements
Rail	Glasgow, West Coast and South West Scotland Rail Improvements	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and linespeed improvements
Rail	Edinburgh, East Coast and Borders Rail Improvements	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and linespeed improvements
Rail	Highland and Far North Rail Improvements	Options to improve capacity, frequency and reliability of train services, such as, train lengthening and linespeed improvements

Category	Grouping Name	Grouping Description
Rail	Decarbonisation of the Rail Network	Options related to decarbonisation of the rail network (incl. rolling stock).
Rail	High Speed Rail	Development of High Speed Rail north of HS2 to Scotland and / or within Scotland
Rail	New Rail Lines, Including Re-Opening of Disused Lines for rail services	Options related to re-opening of disused rail corridors for rail and opening new rail lines including associated new stations
Rail	New Rail Stations	Options related to opening new rail stations on the existing rail network
Rail	New Sleeper Routes	Option related to the introduction of new or extensions to existing rail sleeper routes
Rail	Rolling Stock Quality	Improvements to the quality of heavy rail rolling stock not already committed to within the relevant ScotRail and Caledonian Sleeper franchise. This does not include decarbonisation options which are covered under RL5.
Public Transport	Public Transport Network Coverage, Frequency and Service Integration	Options to improve the network coverage, frequency and service integration of bus and rail, excluding revenue funding. Particularly access to key services such as healthcare, education, leisure and retail**.**
Public Transport	Mobility Hubs and Multi-modal Interchanges	Implement new / upgrade existing strategically important mobility hubs, Park & Ride sites and other multi-modal interchanges.

Category	Grouping Name	Grouping Description
Public Transport	Regional Passenger Facilities/Station Enhancements	Bus and rail passenger facilities and station enhancement improvements, including improved accessibility to facilities for passengers with reduced mobility.
Public Transport	Integrated Public Transport Ticketing	Integration of ticketing across public transport (bus, rail, light rail and ferries).
Ferries / Island Connectivity	Ferry Service Improvements on the CHFS and NIFS network	Options related to CHFS or NIFS network that suggest a change to ferry services, such as capacity, frequency or related port infrastructure.
Ferries / Island Connectivity	New Ferry Routes (Internal to Scotland)	Options related to new internal ferry routes (within Scotland) which may reduce operating costs or subsidy on the CHFS or NIFS network.
Ferries / Island Connectivity	New International Ferry Routes	Options relating to new international ferry services that could bring positive economic benefit to Scotland but which are not sufficiently attractive to the market.
Ferries / Island Connectivity	Decarbonisation of Ferry Network	Options related to decarbonisation of the ferry network (incl. vessels).
Ferries / Island Connectivity	Fixed Links	Options related to fixed links which meet at least one of the following criteria: Connect the Scottish mainland to an island; Reduce the operating costs of the CHFS or NIFS network; Address a strategic problem as identified through evidence-based appraisal that cannot be addressed by reasonable alternatives.

Category	Grouping Name	Grouping Description
Road	North West Scotland Trunk Road Network Improvements	Package of measures to improve the capacity, reliability and resilience of routes, such as overtaking opportunities, partial dualling, junction improvements and route realignment.
Road	North East Scotland Trunk Road Network Improvements	Package of measures to improve the capacity, reliability and resilience of routes, such as overtaking opportunities, partial dualling, junction improvements and route realignment.
Road	South West Scotland Trunk Road Network Improvements	Package of measures to improve the capacity, reliability and resilience of routes, such as overtaking opportunities, partial dualling, junction improvements and route realignment.
Road	South East Scotland Trunk Road Network Improvements	Package of measures to improve the capacity, reliability and resilience of routes, such as overtaking opportunities, partial dualling, junction improvements and route realignment.
Road	Low Emission/Ultra Low Emission/Electric Vehicle National Action Plan	A National Action Plan to support the shift to Low Emission/Ultra Low Emission/Electric Vehicles and help deliver Scottish Governments net zero targets.
Road	Road Safety (Vision Zero) Measures	A national package of road safety measures, such as road safety campaigns and technology to target casualty reduction.
Road	Trunk Road Space Reallocation	Package of measures to reallocate road space on the trunk road network, such as reduction of on-street parking, high occupancy vehicle lanes and no parking zones.

Category	Grouping Name	Grouping Description
Road	Review of speed limits (national)	Review of speed limits across the road network, including the potential to implement 20mph zones
Freight	Decarbonisation of Freight Deliveries	Measures to encourage low carbon fuels (including electric, hydrogen, CNG/LNG) that will decarbonise the freight transport sector in line with the Scottish Government targets and commitments.
Freight	Freight Consolidation Measures	Measures related to Freight Consolidation and Multimodal Hubs to help facilitate sustainable freight deliveries.
Freight	Freight Rest Stops	Measures to help facilitate the introduction of freight rest stops for HGV drivers to take breaks and rest periods as required by regulation.
Freight	Freight Reliability and Efficiency Improvements	Measures aimed at improving the reliability and efficiency of freight journeys.
Freight	Last-Mile Logistics	Moving freight deliveries to low/zero carbon forms of transport, by encouraging the use of active travel measures and electric vehicles to service last-mile logistics
Freight	Sustainable Modal Shift of Freight	Transferring the delivery of freight from road vehicles to more sustainable modes, such as rail and water freight.

Category	Grouping Name	Grouping Description
Freight	Rail Freight Enhancements	Measures to facilitate the growth of rail freight in Scotland, such as Gauge, Route Availability, Trailing Length, Terminals and Pathing
Technology	Connected Autonomous Vehicles (CAV)	Measures related to Connected Autonomous Vehicles (CAV), i.e. the operation of vehicles without direct driver input to control. This grouping relates to all modes of transport.
Technology	Co-operative Intelligent Transport Systems (C-ITS)	Measures related to C-ITS, which are a group of technologies and applications that allow effective data exchange through wireless technologies between vehicles and infrastructure which can also be-applied to vulnerable road users such as pedestrians, cyclists or motorcyclists.
Technology	Transport Scotland Operational Communications	Options related to both wireless and fibre communications to support the management and operation of Transport Scotland services
Technology	Nationwide Open Data, Passenger Information and Communications	Options related to transport data and the provision of public transport information and passenger communications for journey planning.
Technology	Adaptive Traffic Control on the Trunk Road	Options that allow optimisation of the performance of the Trunk Road Network through adaptive control.
Technology	Incident Management System Upgrade	Measures to improve the system software or architecture of Incident Management Systems.

Category	Grouping Name	Grouping Description
Technology	Control Centre of the Future	Development of operation functions and procedures within the Traffic Scotland National Control Centre to adapt to changing requirements
Technology	Intelligent Transport Systems (ITS) Roadside Infrastructure on Motorways and Trunk Road Network	Options to improve transport outcomes such as transport safety, transport productivity, travel reliability, informed travel choices, social equity, environmental performance and network operation resilience
Multimodal	Improve Routes to Major Ports and Airports	Options related to improving surface access to Major Ports and Airports, by all modes.
Multimodal	Improved Resilience of the trunk road and rail networks	Options to improve the resilience of the trunk road and rail network including the impacts from climate change.
Multimodal	Mobility as a Service (MaaS) Digital Platform	Options which assist in the development and adoption of a MaaS digital platform for Scotland across a wide range of existing public, shared and demand-responsive transport services.
Mass Transit	Glasgow Metro	Development of the public transport network within the Glasgow city region, with consideration of bus rapid transport, rail conversion, light rail and underground elements

Category	Grouping Name	Grouping Description
Mass Transit	Edinburgh Mass Transit Options	Development of the public transport network within the Edinburgh City Region with consideration of bus rapid transit, rail conversion, and tram network extension
Mass Transit	Aberdeen Mass Transit Options	Development of the public transport network within the Aberdeen City Region, with consideration of bus rapid transit, and light rail

5.3. Next Steps

This chapter has described the process undertaken to arrive at a list of options for STPR2. These options presented as Groupings will be taken forward for more detailed development and appraisal through the next stage of the STPR2 process.

This will include an assessment of the likely impacts of Groupings against the:

- STPR2 Transport Planning Objectives;
- STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion];
- Established policy directives; and
- Feasibility, affordability and public acceptability of options.

Commenting on this Report

As part of the STPR2 engagement process, feedback on the Transport Options contained within this STPR2 Case for Change report can be submitted using a comments form that can be accessed here. The closing date for comments is midnight on 31 March 2021.

APPENDICES

Appendix A: Figures

Jacobs AECOM

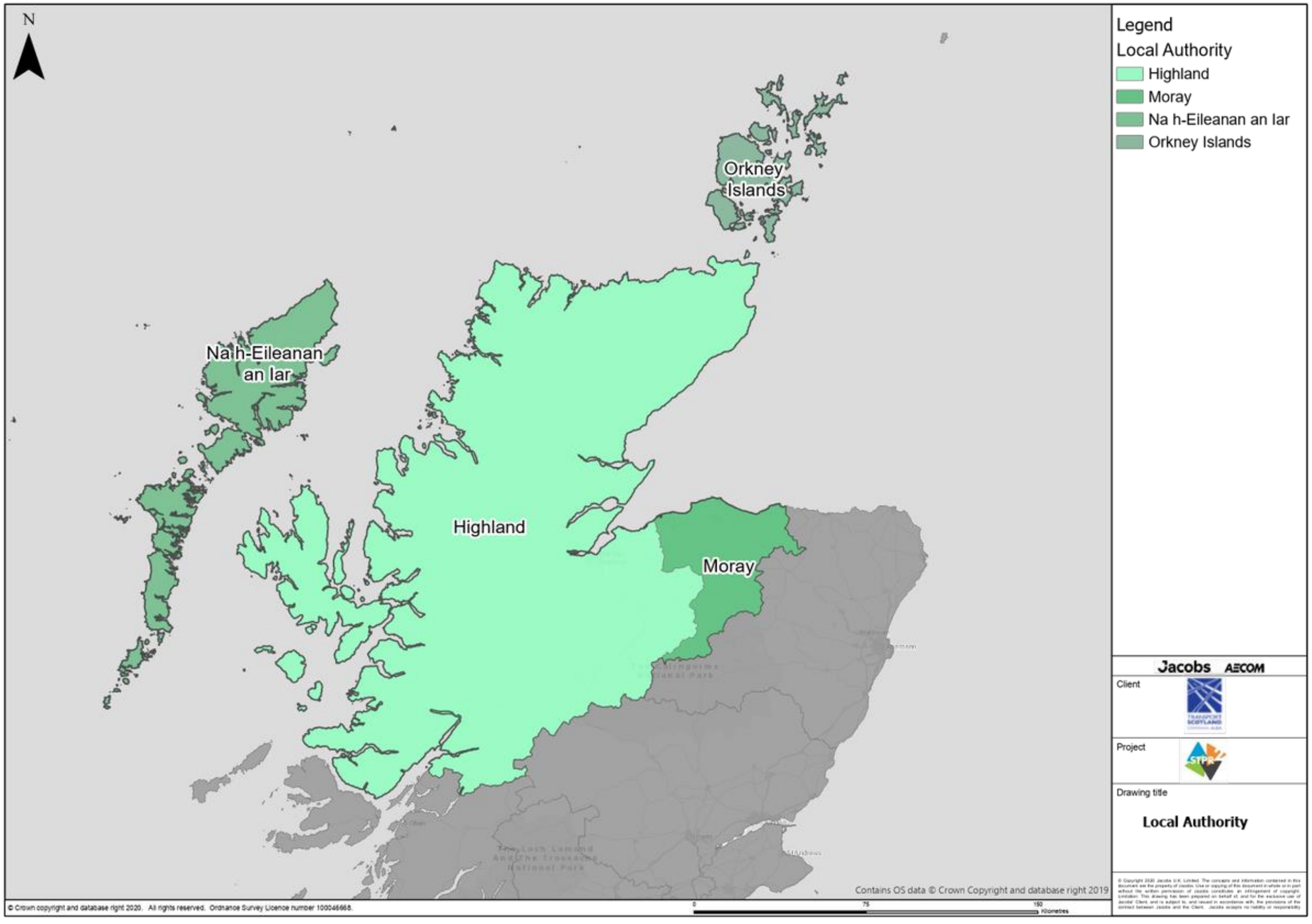


Figure A 1: Highlands and Islands Study Area (Click image to go back to main report)

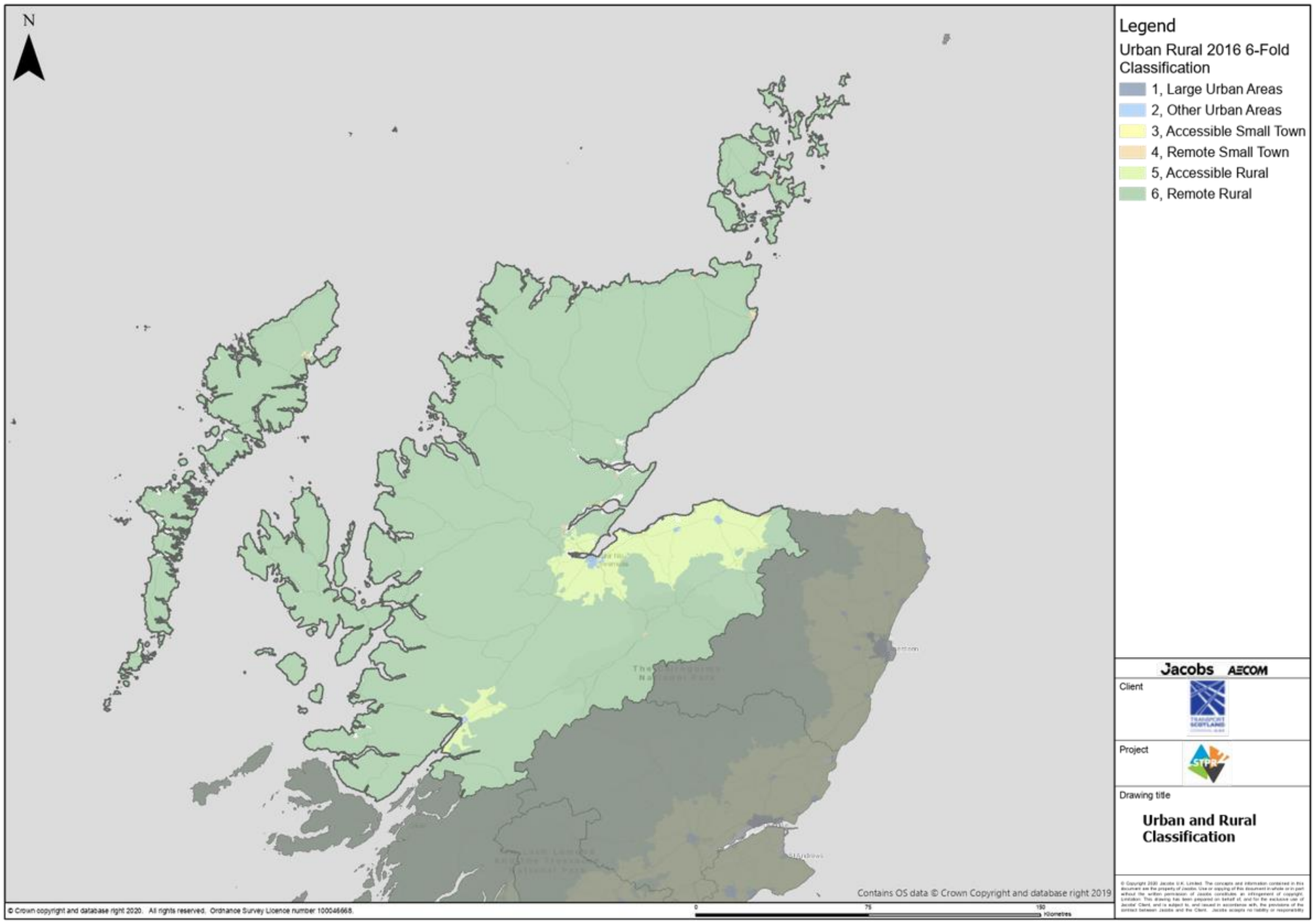


Figure A 2: Urban-Rural 2016 Scottish Government 6-Fold Classification (Click image to go back to main report)

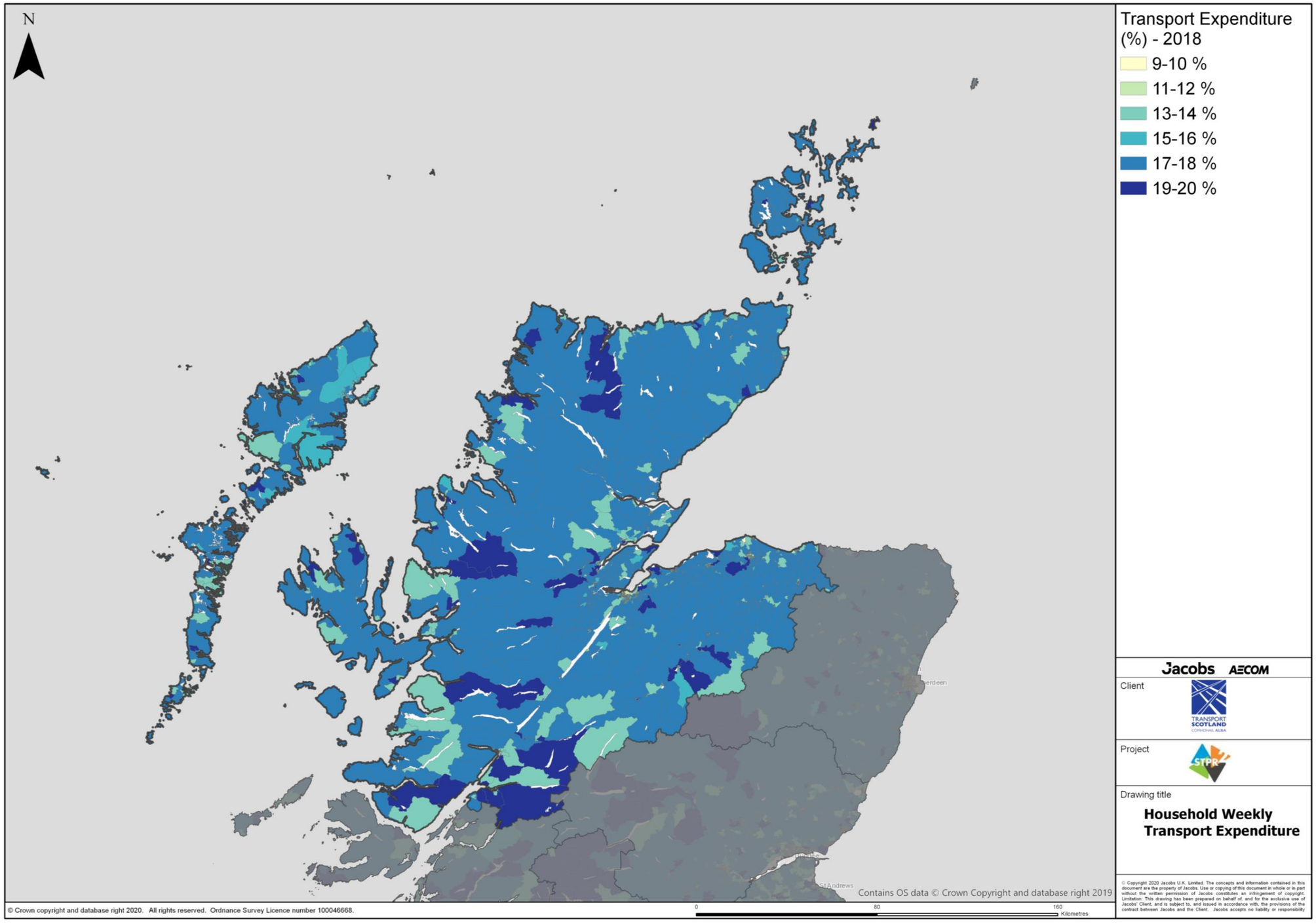


Figure A 3: Transport Expenditure (%) relative to Household Budgets (Click image to go back to main report)

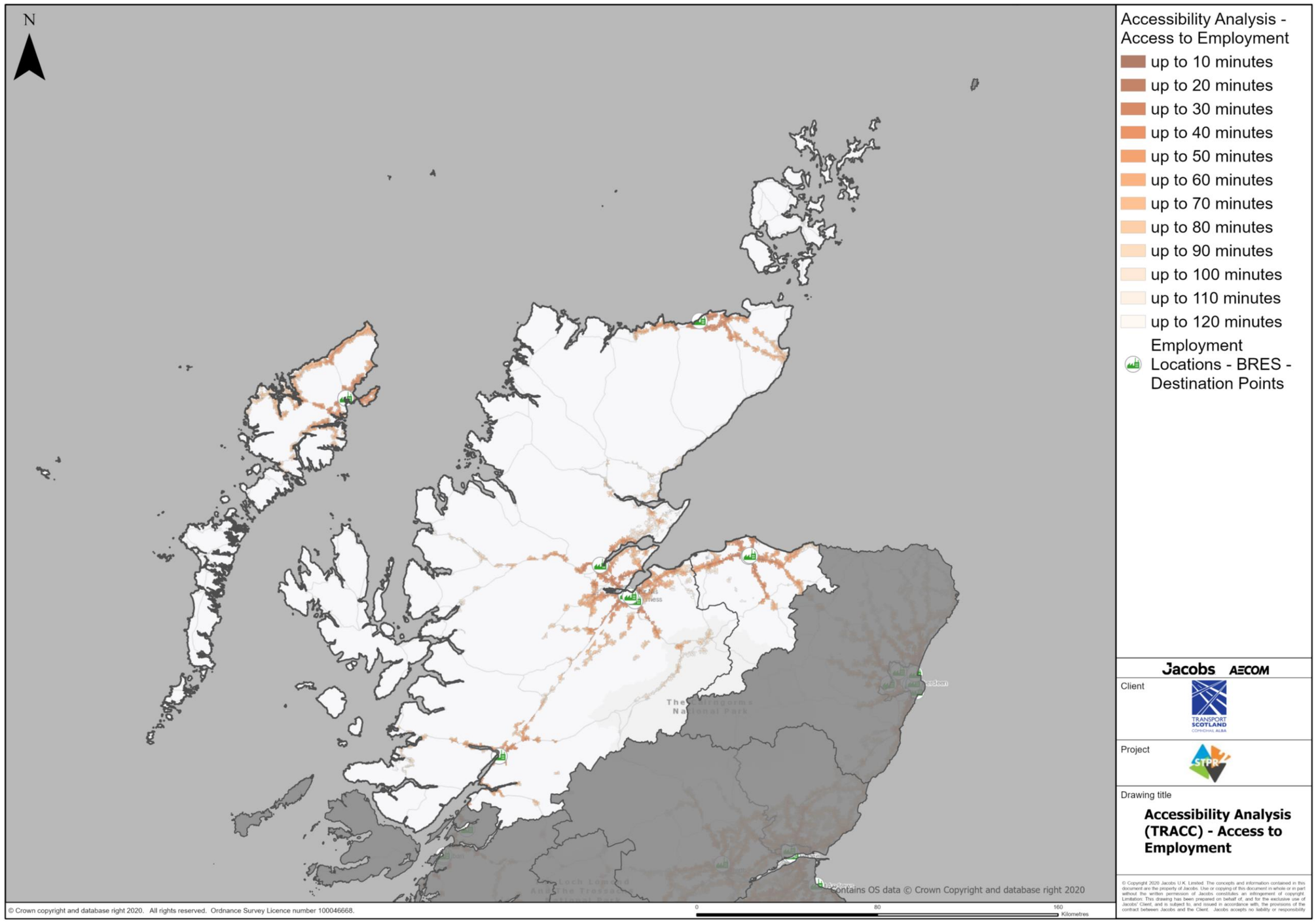


Figure A 4: Access to Key Employment Centres by Public Transport (Click image to go back to main report)

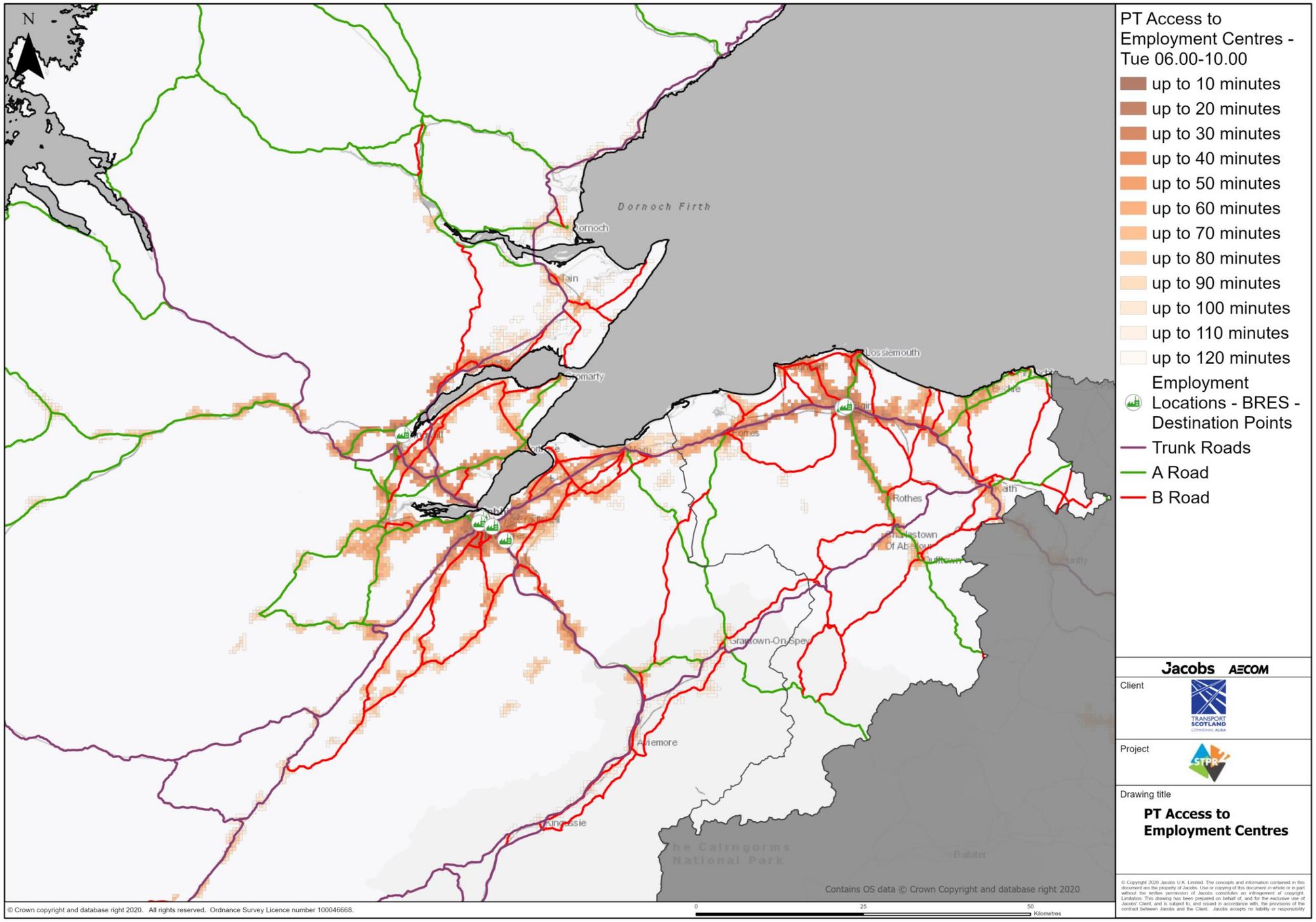


Figure A 5: Access to Employment Centres by Public Transport in Central Highland and Moray (Click image to go back to main report)

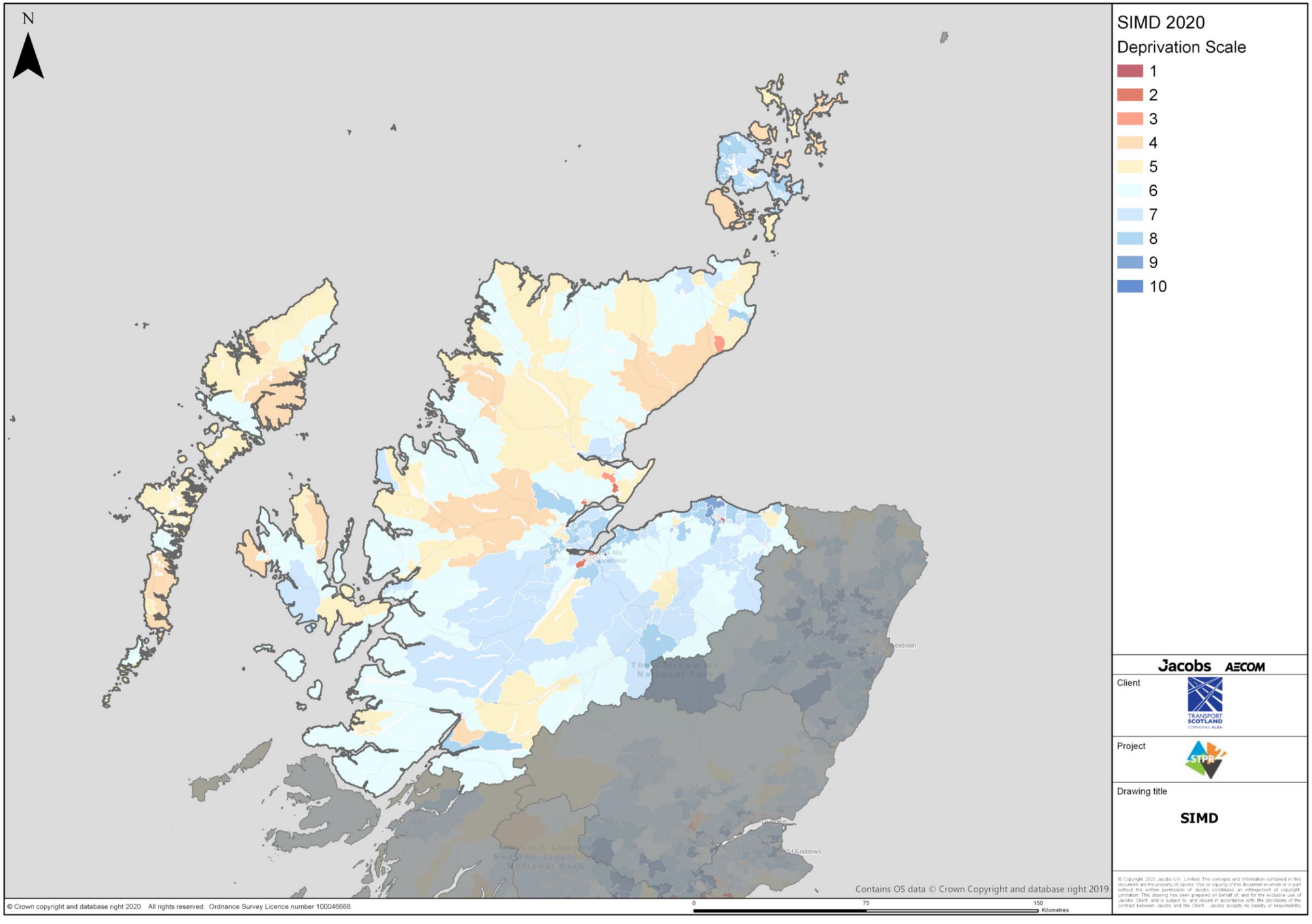


Figure A 6: Highlands and Islands Region - Scottish Index of Multiple Deprivation (Click image to go back to main report)

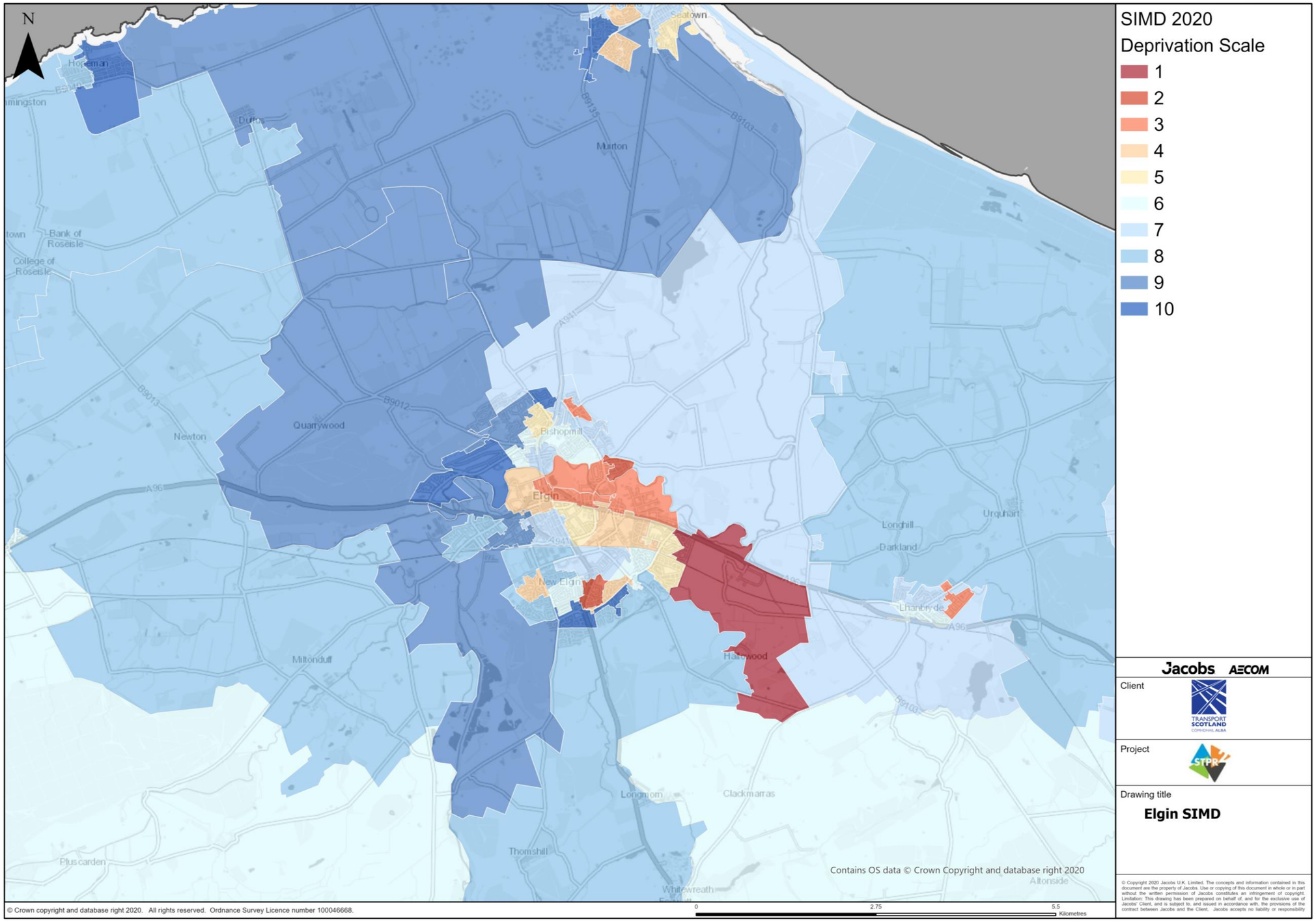


Figure A 7: Elgin Overall SIMD (Click image to go back to main report)

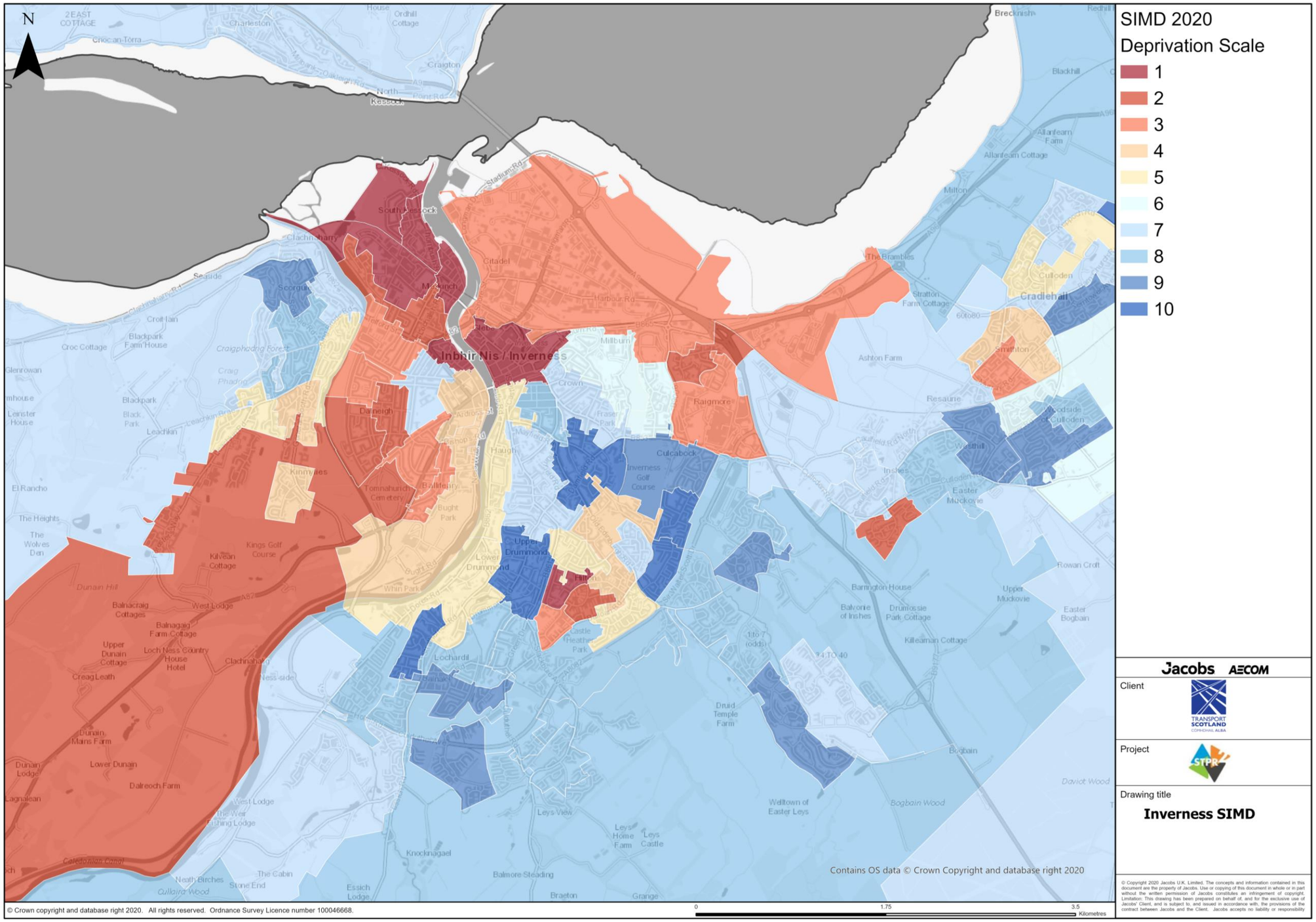


Figure A 8: Inverness Overall SIMD (Click image to go back to main report)

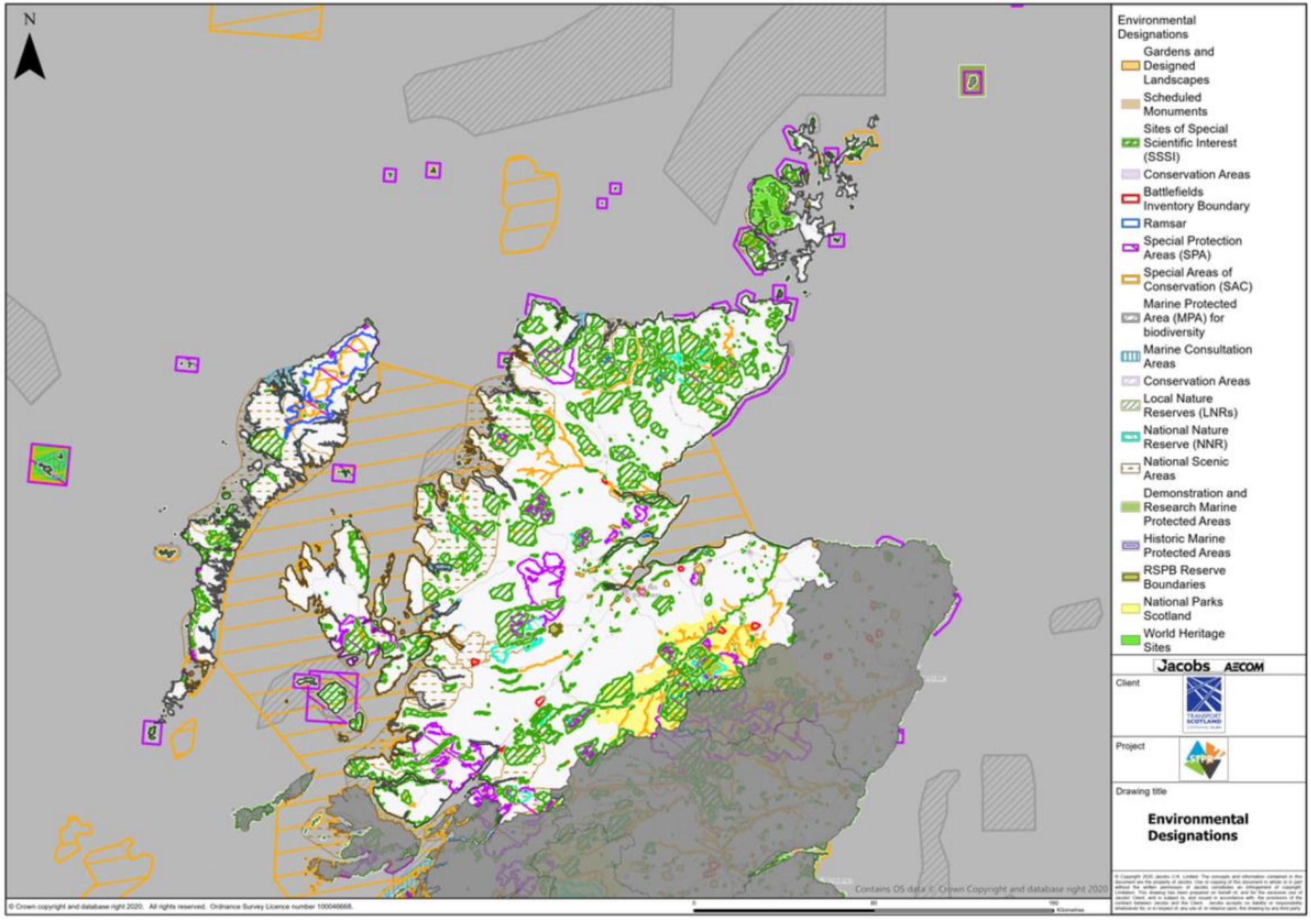


Figure A 9: Environmental Designations for the Highlands and Islands Region (Click image to go back to main report)

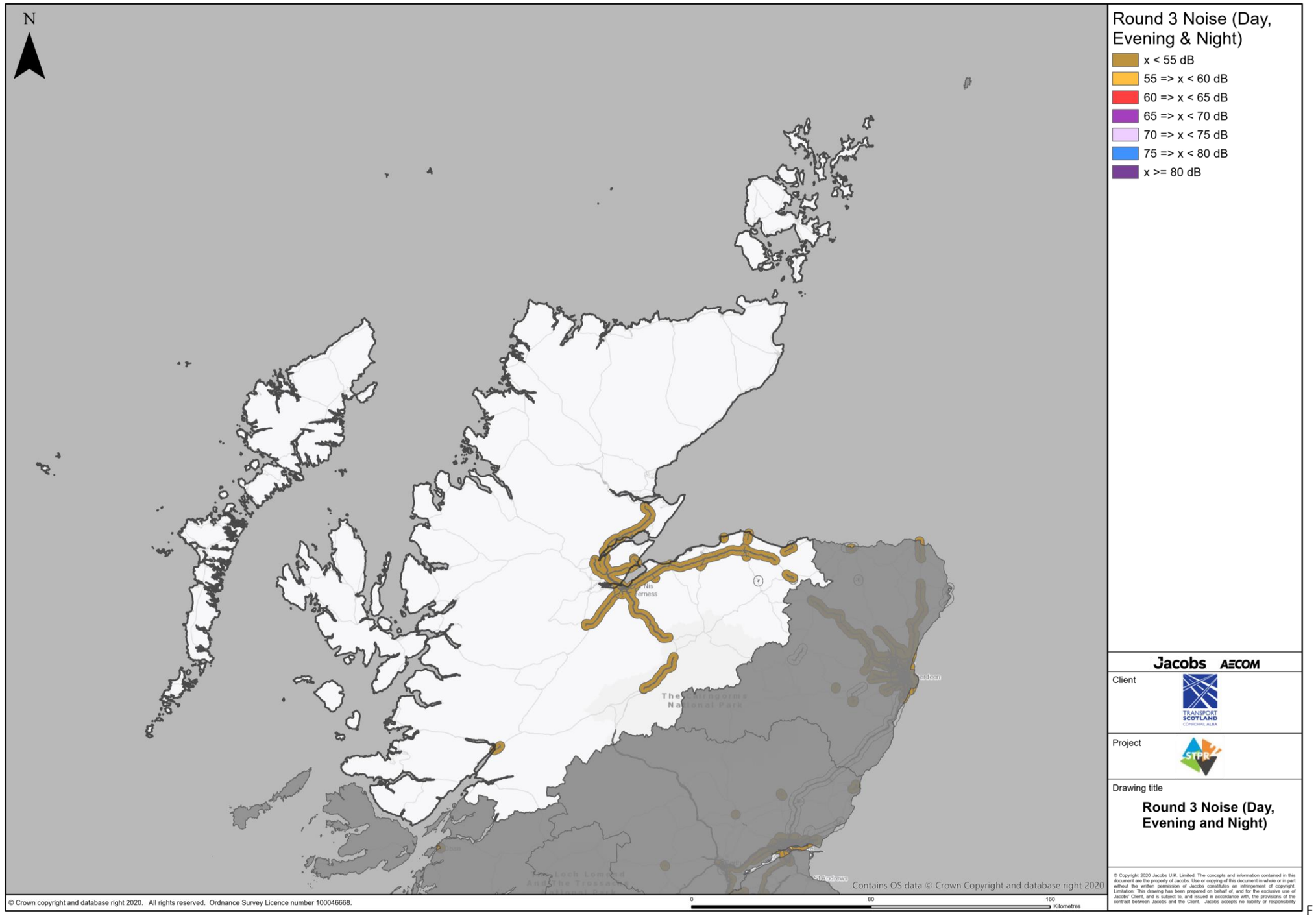


Figure A 10: Noise Mapping for Highlands and Islands Region (Click image to go back to main report)

Figure A 11: Noise Mapping around Inverness (Click image to go back to main report)

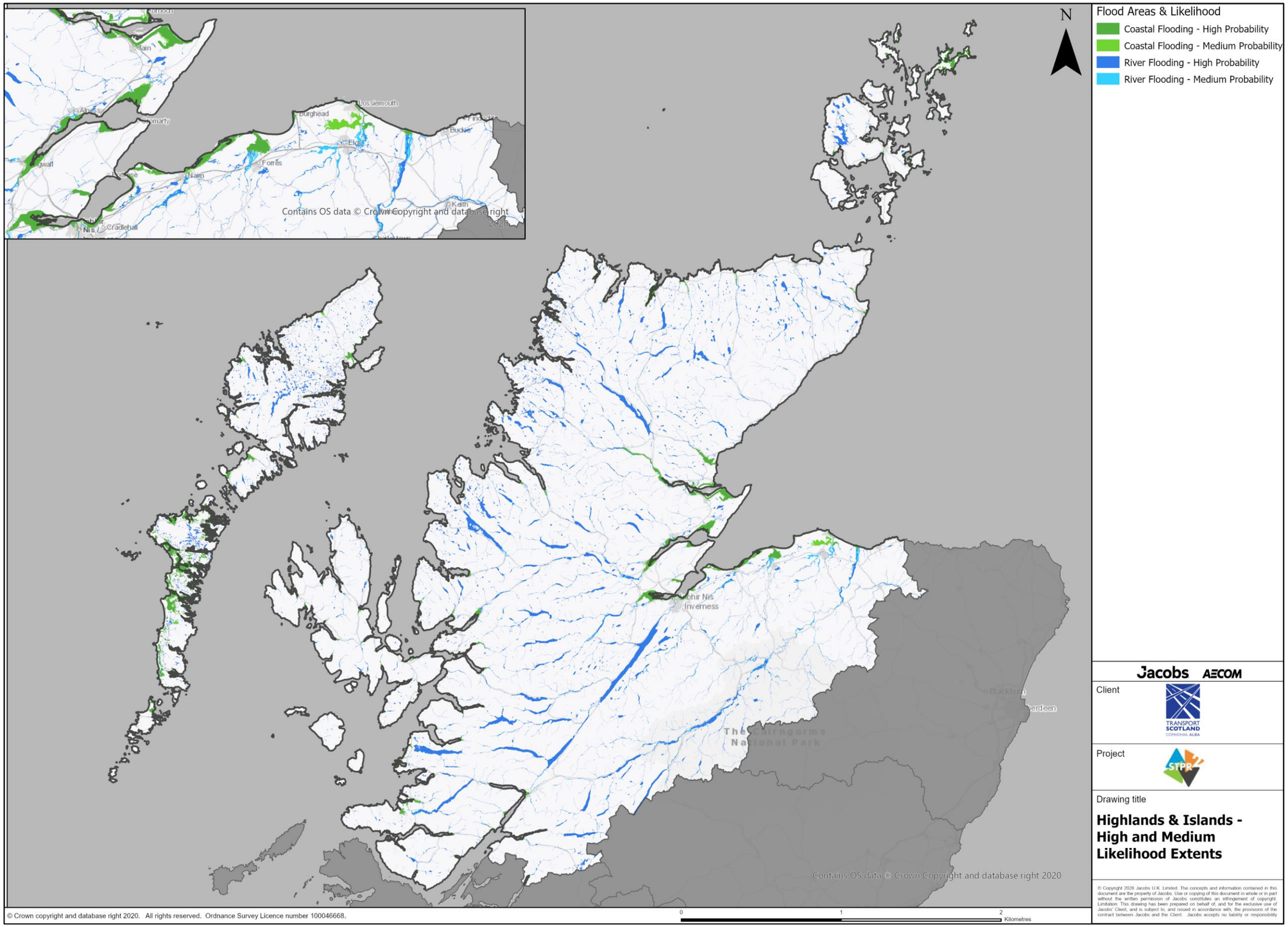


Figure A 12: Flood Mapping for Highlands and Islands Region (Click image to go back to main report)

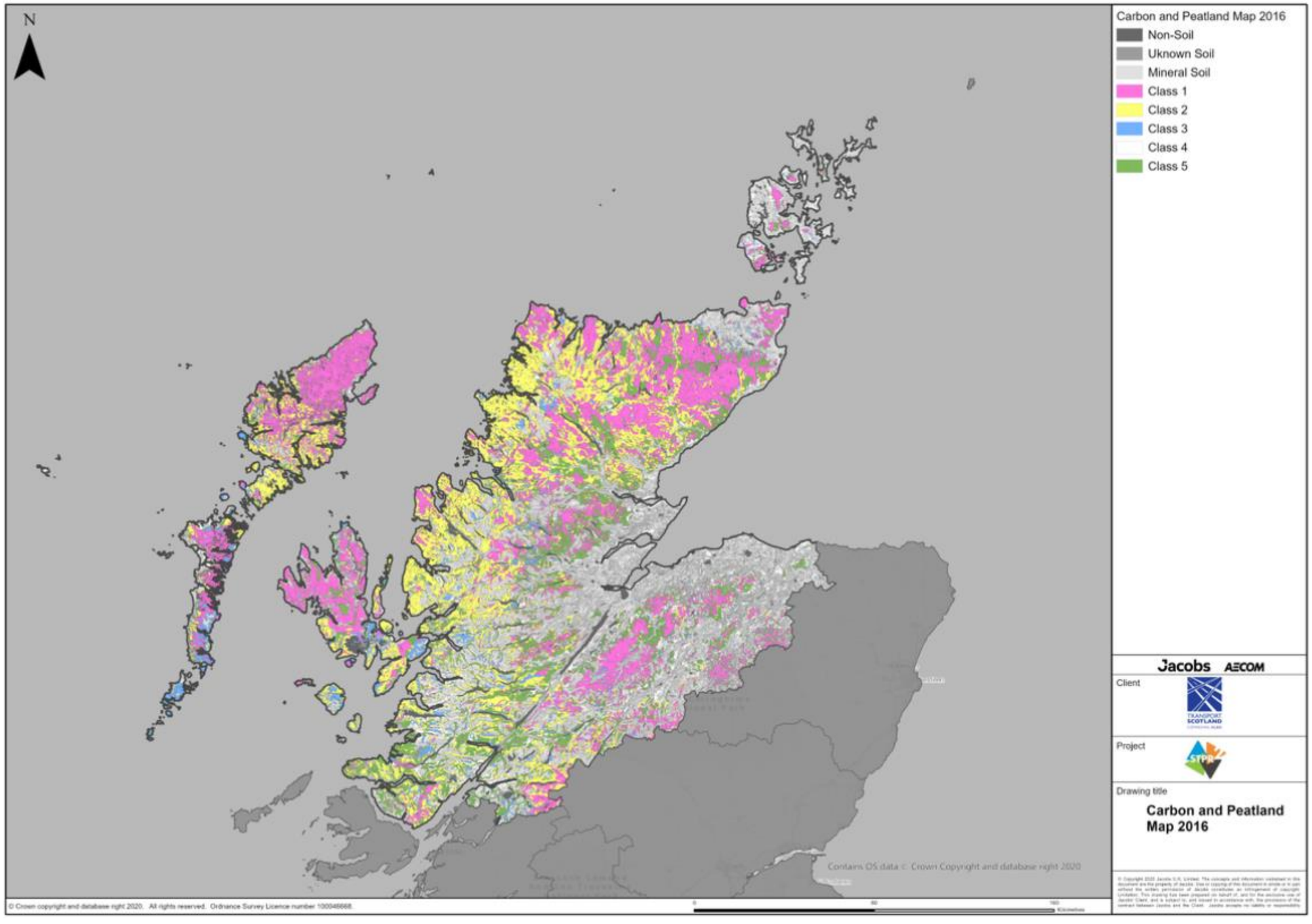


Figure A 13: Carbon and Peatland Map for Highlands and Islands region (Click image to go back to main report)

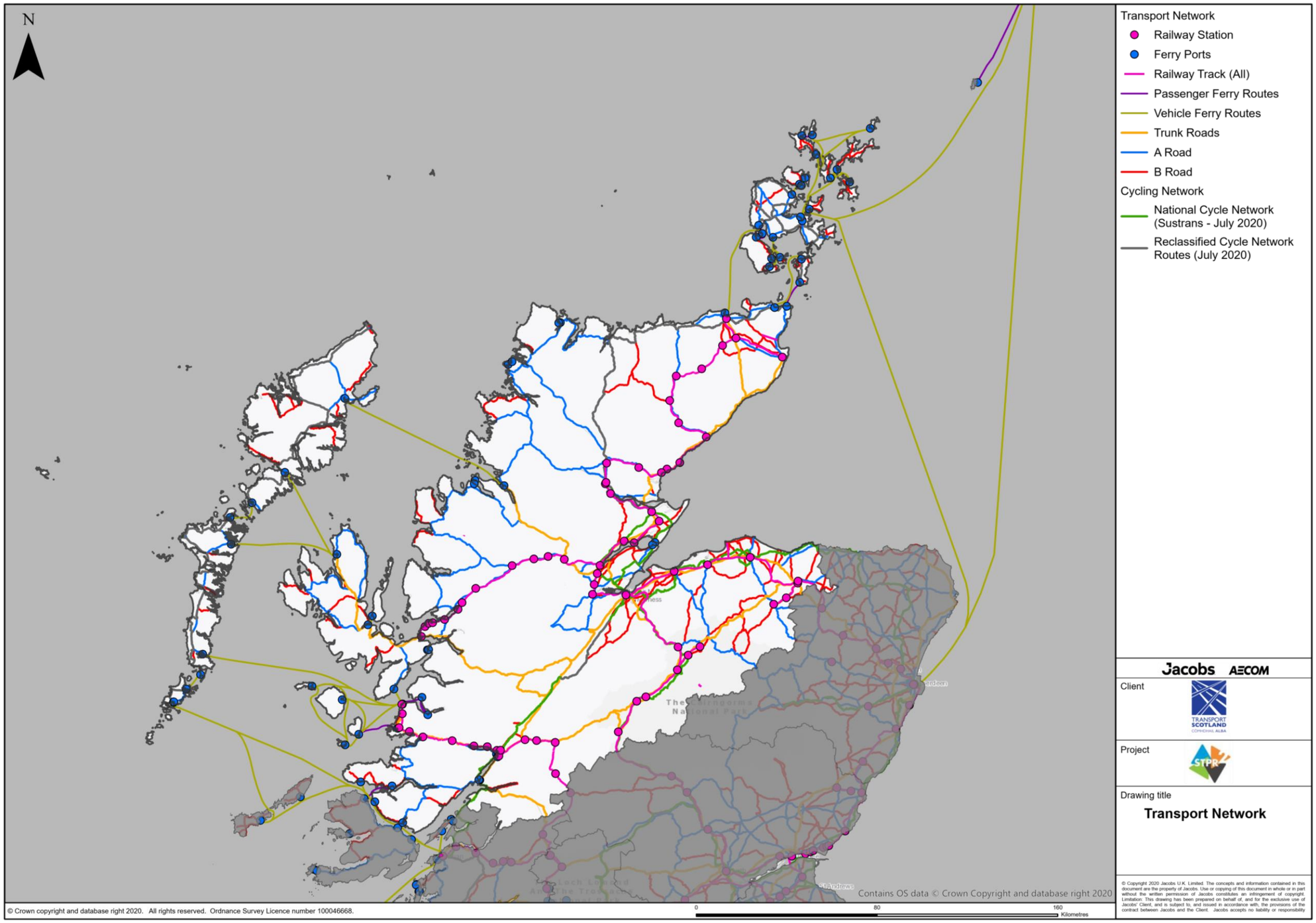
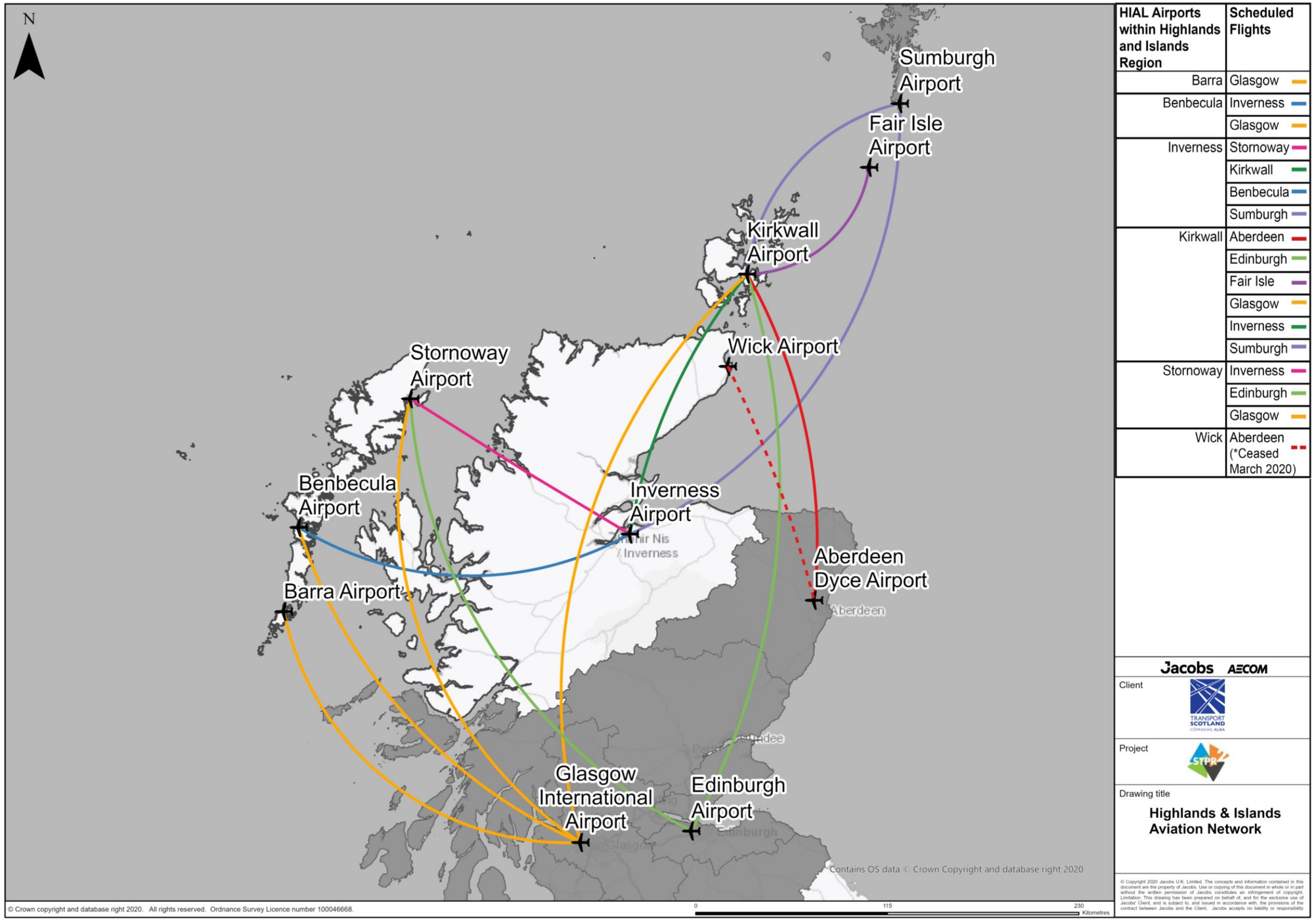


Figure A 14: Highlands and Islands Transport Network (Click image to go back to main report)



HIAL Airports within Highlands and Islands Region	Scheduled Flights
Barra	Glasgow
Benbecula	Inverness
	Glasgow
Inverness	Stornoway
	Kirkwall
	Benbecula
	Sumburgh
Kirkwall	Aberdeen
	Edinburgh
	Fair Isle
	Glasgow
	Inverness
	Sumburgh
Stornoway	Inverness
	Edinburgh
	Glasgow
Wick	Aberdeen (*Ceased March 2020)

Jacobs AECOM

Client: Transport Scotland

Project: STPR2

Drawing title: **Highlands & Islands Aviation Network**

Figure A 15 - HIAL Airport Network within Highlands & Islands (Click image to go back to main report)

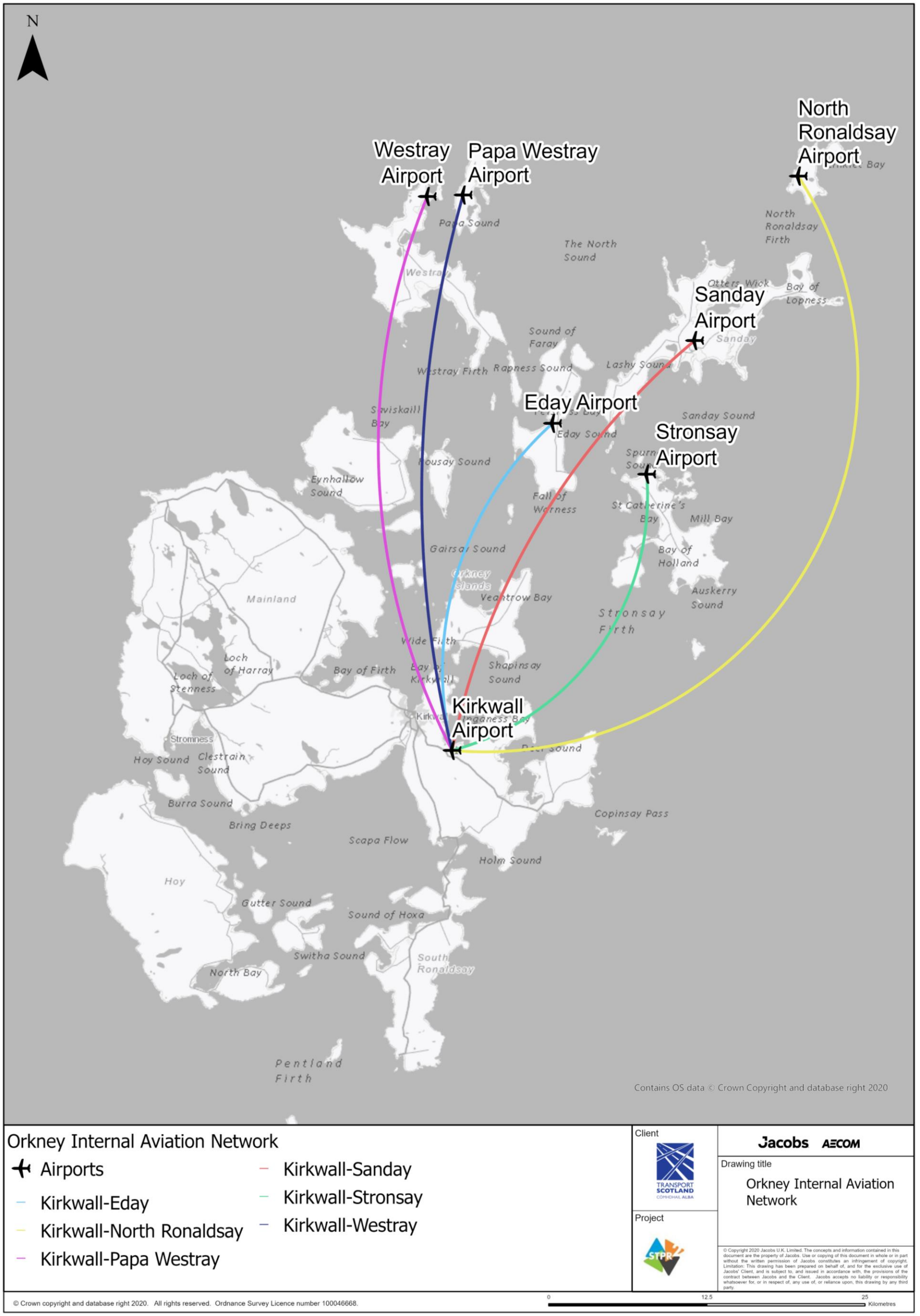


Figure A 16 - Internal Orkney Air Network (Click image to go back to main report)

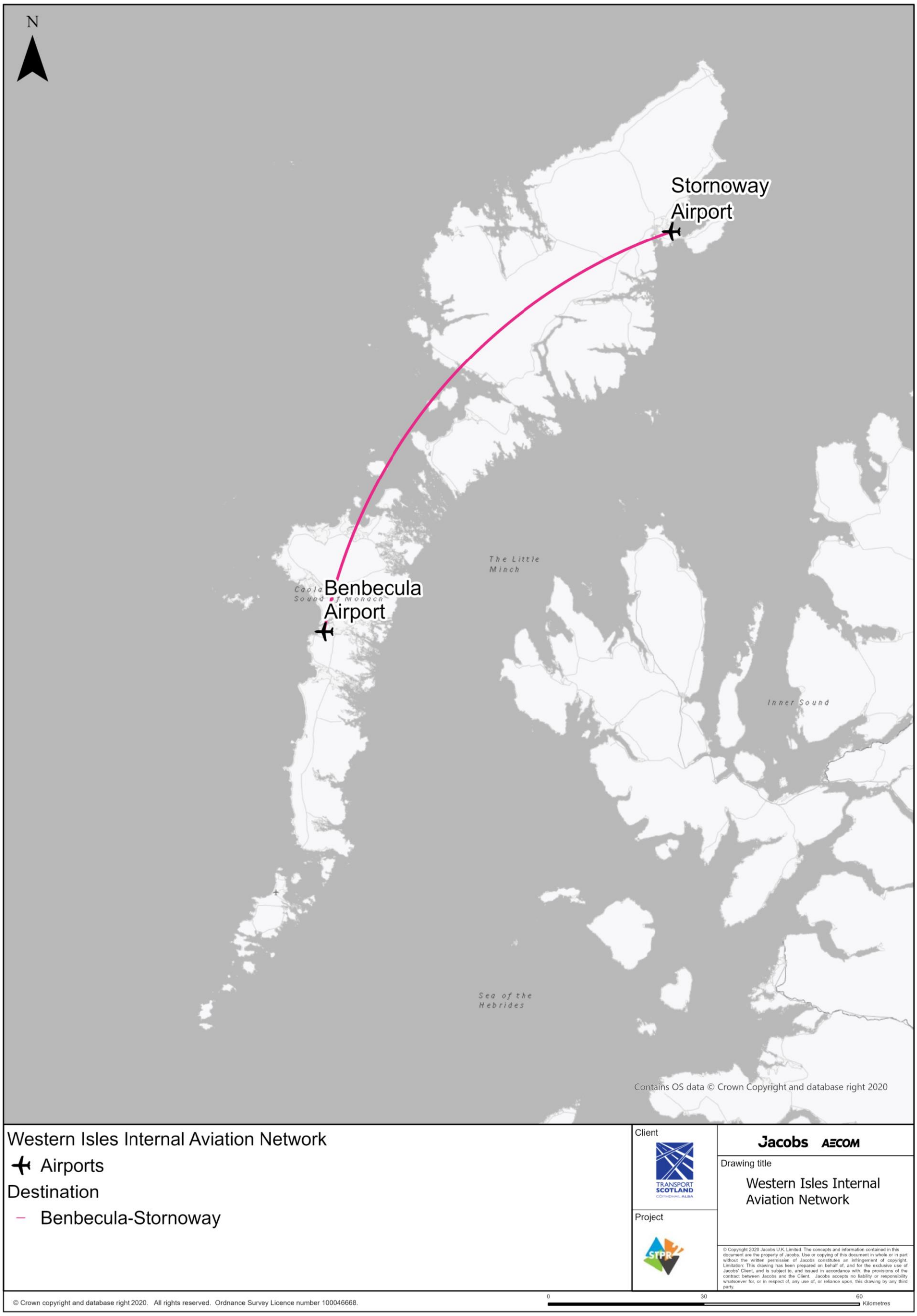


Figure A 17 - Internal Western Isles Air Network (Click image to go back to main report)

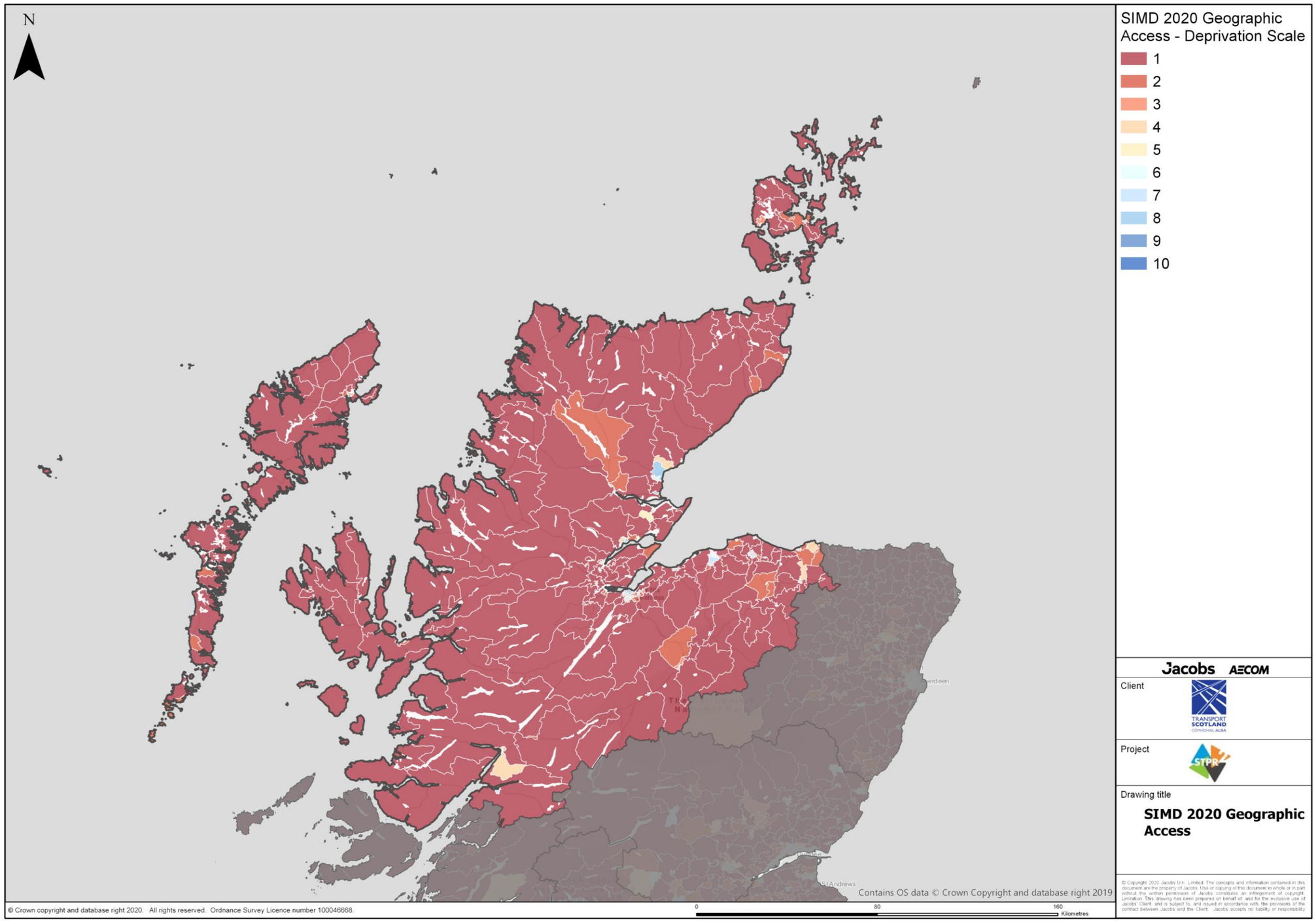


Figure A 18: Highlands and Islands Region SIMD - Access Deprivation (Click image to go back to main report)

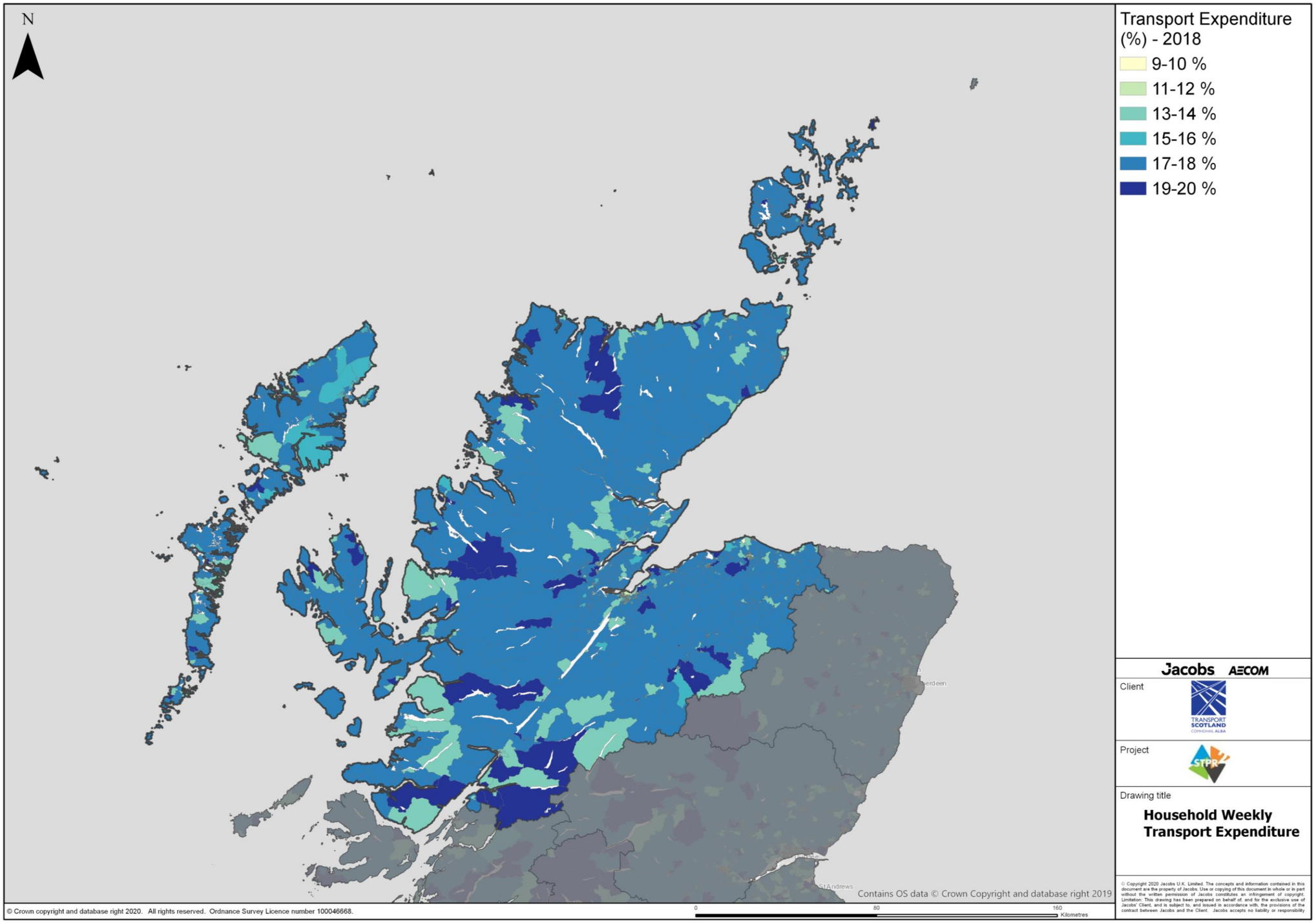


Figure A 19: Transport Expenditure (%) relative to Household Budgets for the Highlands and Islands Region (Click image to go back to main report [figure 18])

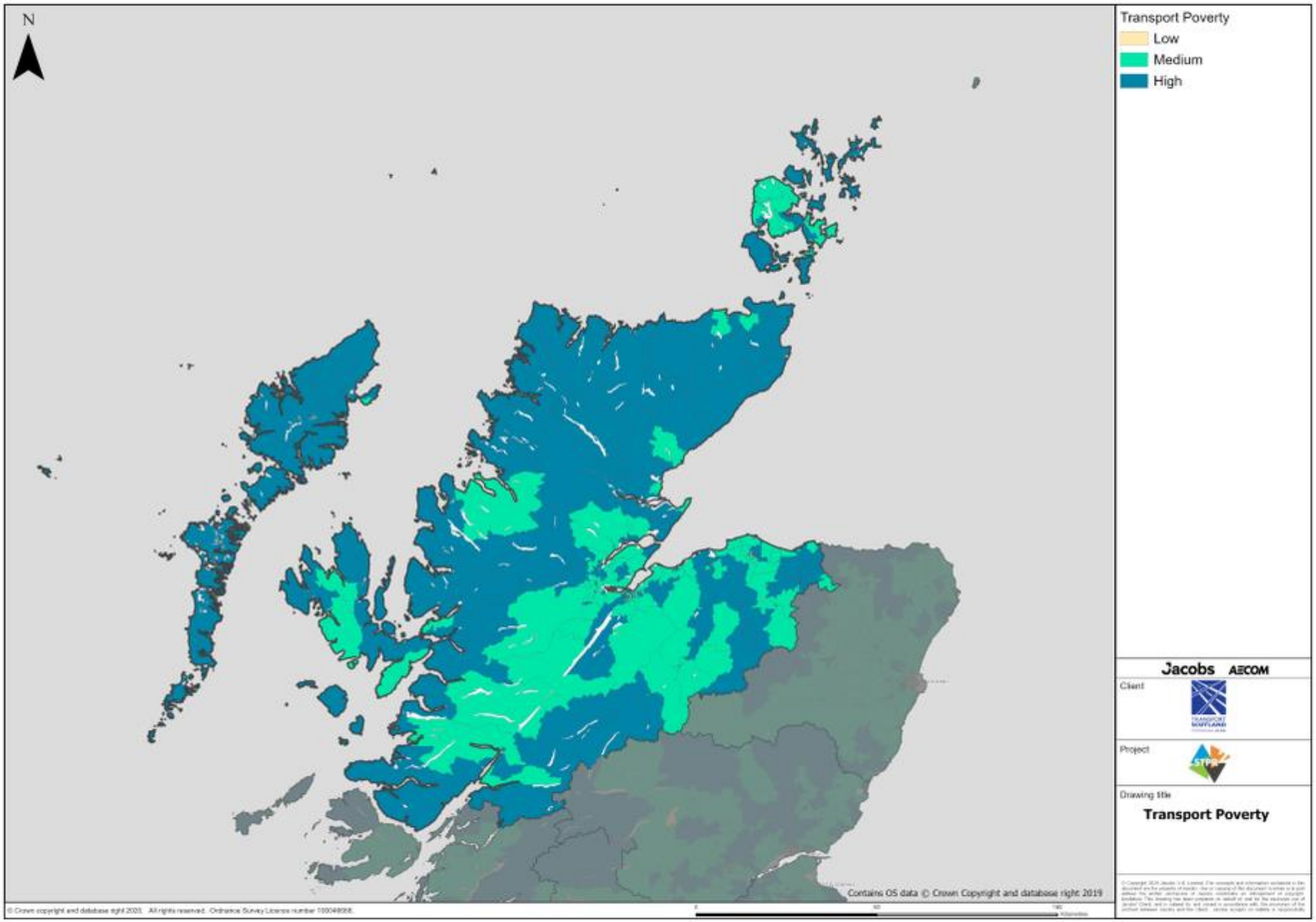


Figure A 20 Transport Poverty in the Highlands and Islands Region (Click image to go back to main report)

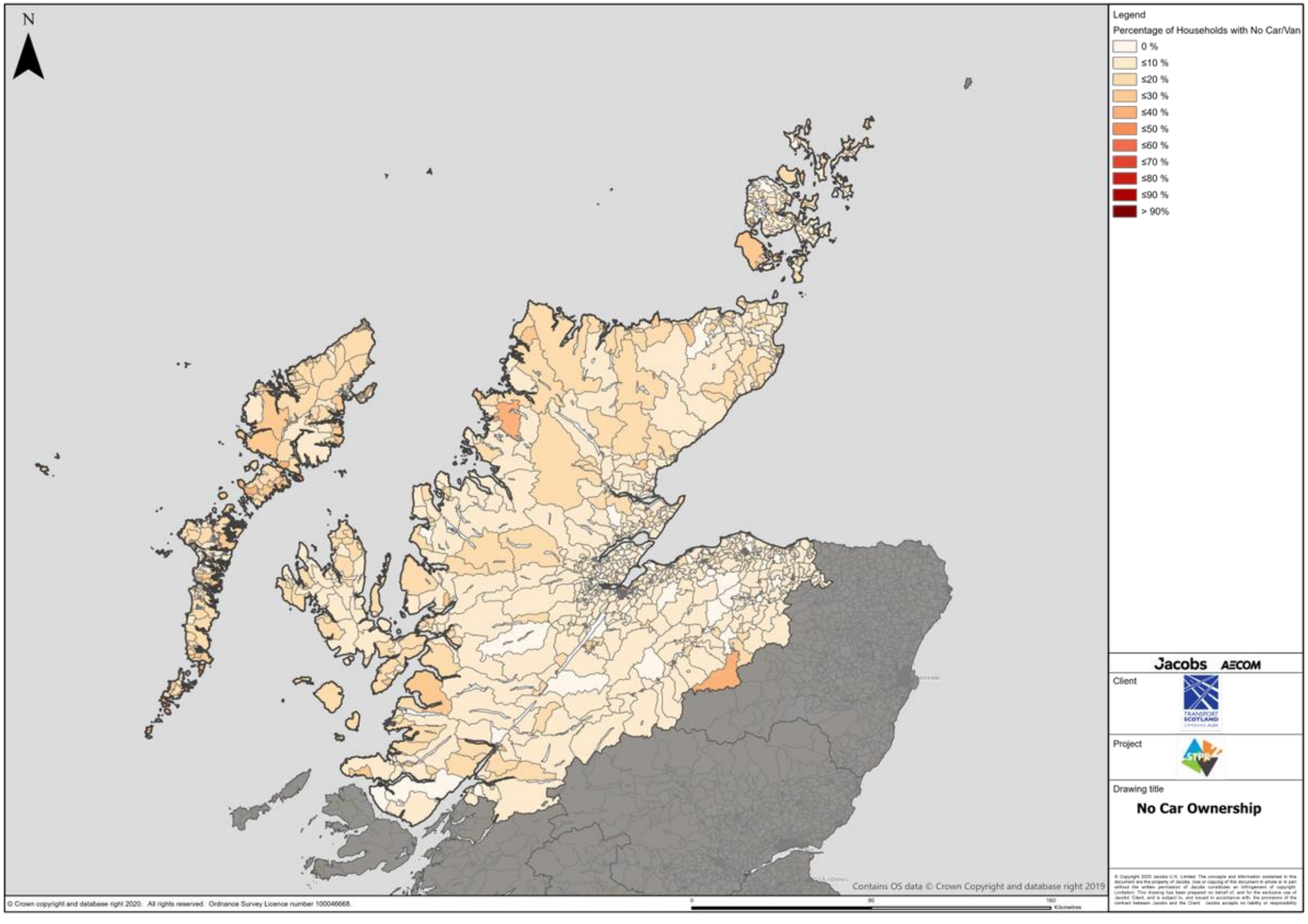


Figure A 21: Percentage of households with no car/van in the Highlands and Islands Region (Click image to go back to main report)

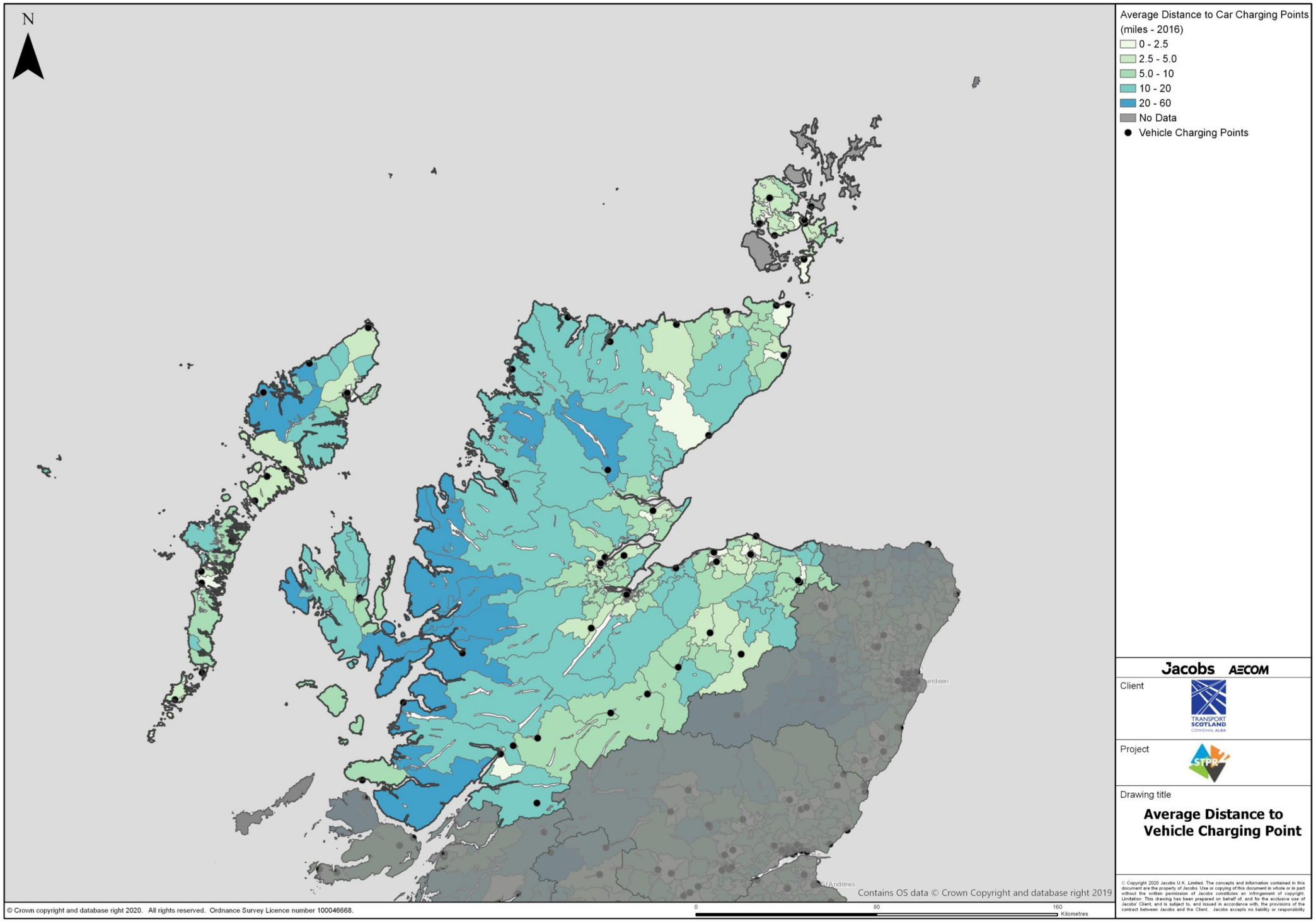


Figure A 22: Average Distance to Charging Points within the Highlands and Islands Region (Click image to go back to main report)

Appendix B: List of Policy Documents

Theme	Title	Author	Year
Development	West Highland and Islands Local Development Plan Transport Background paper	The Highland Council	2016
Development	Highland Wide Local Development Plan	The Highland Council	2012
Development	West Highland and Islands Local Development Plan	The Highland Council	2019
Development	Caithness and Sutherland Local Development Plan	The Highland Council	2018
Development	Inner Moray Firth Local Development Plan	The Highland Council	2015
Development	Orkney Local Development Plan	Orkney Islands Council	2017
Development	Outer Hebrides Local Development Plan	Comhairle nan Eilean Siar	2018
Development	Moray Local Development Plan 2020	Moray Council	2020
Development	Cairngorms National Park Local Development Proposed Plan 2020	Cairngorms National Park Authority	2019
Development	The National Islands Plan	The Scottish Government	2019
Development	Programme for Government	The Scottish Government	2020
Development	Infrastructure Investment Plan	The Scottish Government	2015
Development	National Planning Framework 3	The Scottish Government	2014
Economy	Inverness & Highland City Region Deal – Heads of Terms Agreement	Th Highland Council, Scottish Government, UK Government	2016
Economy	An Action Plan for Economic Development in Highland	Highland Economic Forum	2012
Economy	Cairngorms National Park Economic Strategy	Cairngorms National Park Authority	2015

	2015-2018		
Economy	Scotland's Economic Strategy	The Scottish Government	2015
Economy	Low Carbon Economic Strategy	The Scottish Government	2010
Energy	The Future of Energy in Scotland: Scottish Energy Strategy	The Scottish Government	2017
Environment	The Highland Council Carbon Management Plan	The Highland Council	2013
Environment	Climate Change Plan Update 2018 - 2032	The Scottish Government	2020
Other	HITRANS Main Issues Report	HITRANS	2016
Other	HIE Strategy and Operating Plan	Highlands and Islands Enterprise	2018
Other	The Highland Outcome Improvement Plan	Highland Community Planning Partnership	2017
Other	Highland Council Corporate Plan	The Highland Council	2019
Other	Islands (Scotland) Act	The Scottish Government	2018
Transport	HITRANS Regional Transport Strategy Draft	HITRANS	2017
Transport	Active Highland Strategy	Highland Community Planning Partnership	2017
Transport	The Highland Council Local Transport Strategy	The Highland Council	2010
Transport	Orkney Islands Council Local Transport Strategy	Orkney Islands Council	2007
Transport	Outer Hebrides Local Transport Strategy 2020 - 2030	Comhairle Nan Eilean Siar	2020
Transport	Moray Local Transport Strategy Part 1 and Part 2	Moray Council, 2011	2015
Transport	Strategic Transport Projects Review	Transport Scotland	2009
Transport	National Transport Strategy Refresh	Transport Scotland	2016

Transport	Scotland's Railways	Transport Scotland	2006
Transport	Scotland's Rail Freight Strategy	Transport Scotland	2016
Transport	Scottish Trunk Road Network Asset Management Strategy	Transport Scotland	2018
Transport	Scottish Ferry Services Ferries Plan 2013 – 2022	Transport Scotland	2013
Transport	Strategic Road Safety Plan	Transport Scotland	2016
Transport	Road Safety Framework to 2030	Transport Scotland	2020
Transport	Cycling Action Plan for Scotland	Transport Scotland	2017
Transport	Let's Get Scotland Walking	The Scottish Government	2014
Transport	National Transport Strategy 2 Delivery Plan	The Scottish Government	2020
Transport	Network Rail Scotland Route Study	Network Rail	2016

Appendix C: Stakeholder Engagement

Engagement Type	Date	Venue	Purpose and Details	No. of Attendees
Problems & Opportunities Workshop	Thursday 27th June 2019	Kirkwall & St Ola Community Centre, Kirkwall	Workshop with stakeholders including representatives from transportation, education, health and environmental sectors, in addition to local authority officers, to identify transport-related problems and opportunities in the region.	21
	Wednesday 5th June 2019	Elgin Sports and Community Centre, Elgin		12
	Monday 17th June 2019	Inverness Town House, Inverness		16
	Wednesday 19th June 2019	Pentland Hotel, Thurso		14
	Monday 24th June 2019	Caladh Inn, Stornoway		11
	Thursday 27th June 2019	Nevis Centre, Fort William		16
Structured Interviews	June – October 2019	-	Interviews with key stakeholders, including Senior Officers within the local authorities and Business representatives, to identify transport-related problems and opportunities and potential options for the region.	6
Interventions Workshop	Tuesday 26th November 2019	Caladh Inn, Stornoway	Workshop with stakeholders including representatives from transportation, education, health and environmental sectors, in addition to local authority officers, to identify potential interventions to address problems and opportunities previously identified.	6
	Thursday 5th December 2019	Moray Council Building, Elgin		3
	Tuesday 10th December 2019	Nevis Centre, Fort William		14

	Monday 25th November 2019	Kirkwall & St Ola Community Centre, Kirkwall		11
	Wednesday 4th December 2019	Best Western Inverness Palace Hotel & Spa, Inverness		17
Elected Members Briefing / Workshop	Wednesday 15th January 2020	Royal Highland Hotel, Inverness	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.	5
	Thursday 16th January 2020	Kirkwall & St Ola Community Centre, Kirkwall		14
	Tuesday 4th February	Caladh Inn, Stornoway		9
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.	515 responses