

Strategic Transport Projects Review (STPR2) Consultancy Support Services Contract



Initial Appraisal: Case for Change Ayrshire & Arran Region

February 2020

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Jacobs **AECOM**



STRATEGIC TRANSPORT PROJECTS REVIEW#2

Project No:	B2356701
Document Title:	STPR2: Initial Appraisal: Case for Change – Ayrshire & Arran Region
Document No.:	2
Revision:	Draft for Publication
Date:	25/02/2020

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Contents

1. Introduction	1
1.1. Background and Report Purpose	1
2. Context	4
2.1. Policy Context	4
2.2. Geographic Context	6
2.3. Socio-Economic Context	7
2.4. Environmental Context	19
2.5. Transport Context	20
2.6. Context Summary	23
3. Problems & Opportunities	24
3.1. Approach to Problem & Opportunity Identification	24
3.2. Problems & Opportunities	25
4. Transport Planning Objectives	47
4.1. National and Regional Objectives	47
5. Approach to Option Generation and Sifting	51
5.1. Strategic Options	51
5.2. Approach	52
5.3. Next Steps	54

Appendices

Appendix A: Figures

Appendix B: List of Policy Documents

Appendix C: Stakeholder Engagement



Figures

Figure 1: The Four Key Stages to the Scottish Transport Appraisal Guidance.....	1
Figure 2: Ayrshire & Arran Study Area.....	2
Figure 3: Strategy and Policy Overview.....	5
Figure 4: Urban Rural 2016 6-Fold Classification.....	6
Figure 5: Ayrshire & Arran Largest Settlements by Population, 2018 Population and Population Density.....	7
Figure 6: Population Change by Settlement 2012 – 2016.....	8
Figure 7: Ayrshire & Arran and Scotland Change in Population by Age, 2011 to 2018.....	9
Figure 8: Mode of Travel to Work.....	9
Figure 9: Proportion of Households without Car Ownership.....	10
Figure 10: Distance Travelled to Work.....	11
Figure 11: Sector GVA Share Ayrshire vs Scotland 2018.....	13
Figure 12: SIMD Employment Domain.....	14
Figure 13: Out of Work Benefits.....	15
Figure 14: Public Transport Access to Employment Centres.....	16
Figure 15: Scottish Index of Multiple Deprivation 2016.....	17
Figure 16: Proportion of population with a long term physical or mental health condition.....	18
Figure 17: Environmental Designations.....	19
Figure 18: Ayrshire & Arran Transport Network.....	20
Figure 19: Stakeholder Engagement.....	24
Figure 20: Percentage of People Travelling to Work by Bicycle.....	26
Figure 21: Scottish Access to Bus Indicator, Weekday.....	28
Figure 22: TRACC Walk Access to Rail Stations and 20% most deprived SIMD data zones.....	29
Figure 23: Ayr to M74 Journey Times (INRIX).....	30
Figure 24: A77 Diversionary Route.....	32
Figure 25: A78 Diversionary Route.....	32
Figure 26: Monkton Roundabout to Bankfield Roundabout (A77) INRIX Journey Times.....	34
Figure 27: Change in Volumes on Main Arran and Cumbrae Ferry Routes.....	35
Figure 28: TRACC Access to Healthcare.....	36
Figure 29: Transport Expenditure in Ayrshire & Arran.....	37
Figure 30: Transport Poverty in Ayrshire & Arran.....	38
Figure 31: Total Domestic and International Visitors Ayrshire & Arran, 2011 – 2017: Volume and Spend.....	41
Figure 32: Ultra Low Emission Vehicles per 1,000 people by STPR2 Region.....	43
Figure 33: Proximity to nearest EV Charge Point, Ayrshire & Arran.....	43
Figure 34: Ayrshire & Arran Active Travel Network.....	44
Figure 35: Approach to Option Generation and Sifting.....	53
Figure 36: The Sustainable Investment Hierarchy.....	54

Tables

Table 1: Diversionary Route Information for A77 and A78.....	32
Table 2: STPR2 National Objectives and the Regional Sub-Objectives.....	47
Table 3: Mapping of Problem and Opportunity Themes to Transport Planning Objectives.....	49



List of Acronyms

ACRONYM	
AMIC	Ayrshire Manufacturing Investment Corridor
CRWIA	Children's Rights and Wellbeing Impact Assessment
EqIA	Equality Impact Assessment
FSDA	Fairer Scotland Duty Assessment
GDP	Gross Domestic Product
GVA	Gross Value Added
ICIA	Island Communities Impact Assessment
MPA	Marine Protected Area
NCN	National Cycle Network
NPF	National Planning Framework
NSA	National Scenic Area
NTS	National Transport Strategy
RET	Road Equivalent Tariff
RTS	Regional Transport Strategy
RTWG	Regional Transport Working Group
SABI	Scottish Access to Bus Indicator
SAC	Special Area of Conservation
SCRIG	Scotland's Centre for Regional Inclusive Growth
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SIMD	Scottish Index of Multiple Deprivation
SRMCS	Scottish Road Maintenance Condition Survey
SPA	Special Protection Area
SPT	Strathclyde Partnership for Transport
SSSI	Site of Special Scientific Interest
STAG	Scottish Transport Appraisal Guidance
STPR	Strategic Transport Projects Review
TMfS	Transport Model for Scotland



TPO	Transport Planning Objective
ULEV	Ultra Low Emission Vehicle

1. Introduction

1.1. Background and Report Purpose

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

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

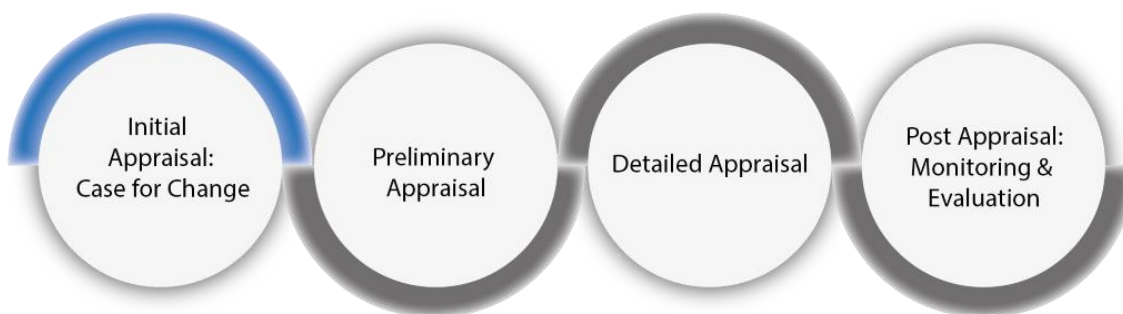


Figure 1: The Four Key Stages to the Scottish Transport Appraisal Guidance

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

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

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

¹ National Transport Strategy (NTS2) (Transport Scotland, February 2020)

www.transport.gov.scot/media/47052/national-transport-strategy.pdf

² Scottish Transport Appraisal Guidance (STAG) (Transport Scotland)

<https://www.transport.gov.scot/media/41507/j9760.pdf>

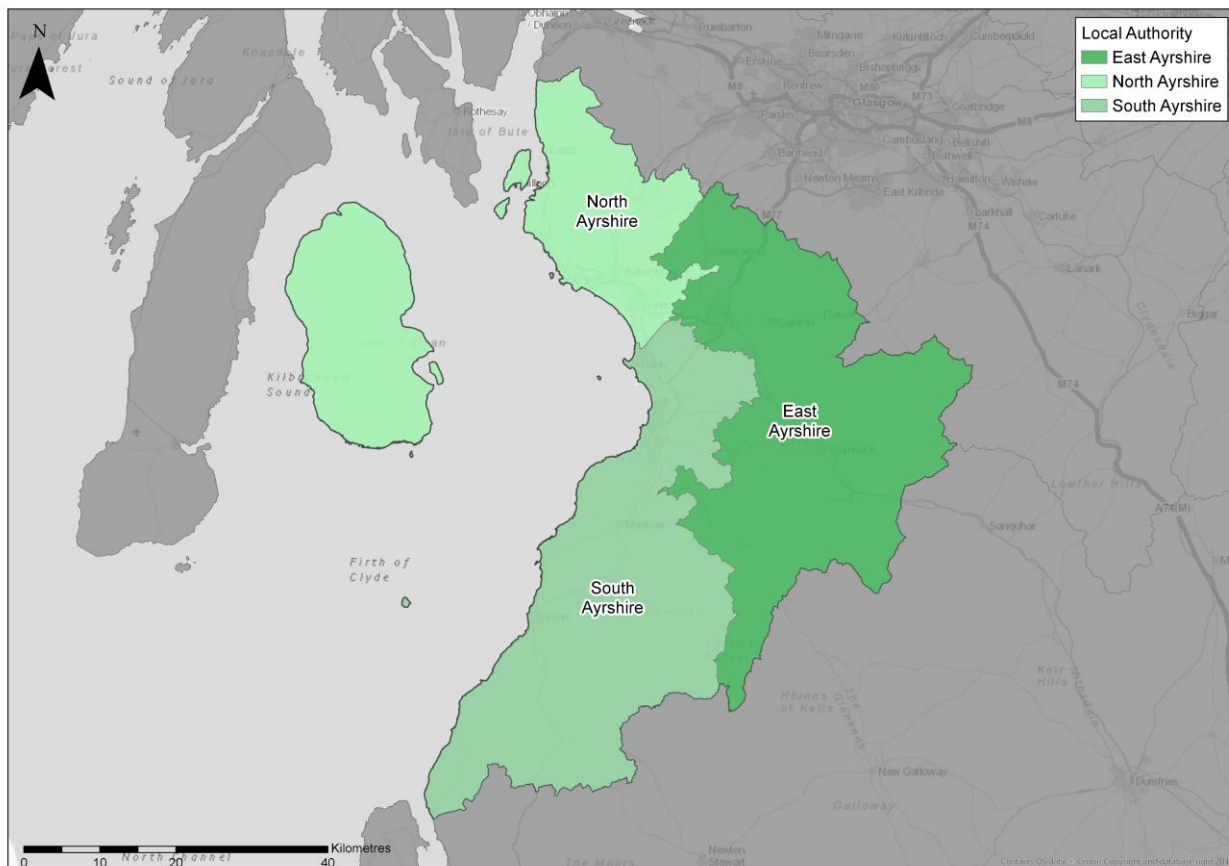


Figure 2: Ayrshire & Arran Study Area (Click image to enlarge figure)

The Ayrshire & Arran region comprises the three local authorities of North Ayrshire, South Ayrshire and East Ayrshire and has an extensive transport network, including active travel, rail and road networks, ferries serving Arran and Cumbrae and an airport at Prestwick.

To reflect the regional approach of STPR2, a Regional Transport Working Group (RTWG) has been established with representatives from the three local authorities (East Ayrshire, North Ayrshire and South Ayrshire Councils), the Ayrshire Roads Alliance, Strathclyde Partnership for Transport (SPT), the Ayrshire Growth Deal, Transport Scotland and the STPR2 consultant team.

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

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

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



The following Chapter will set out the Socio-Economic, Environmental and Transport Context for the Ayrshire & Arran region.



2. Context

2.1. Policy Context

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

- **Programme for Government:** Sets out the Scottish Government’s ambitions and aims to make Scotland a more successful country with opportunities and increased wellbeing for all.
- **National Transport Strategy 2:** The NTS2 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.
- **Climate Emergency:** Declared by the Scottish and UK Governments and multiple local authorities, including North Ayrshire Council, in April 2019. As part of this, the Climate Change Bill commits the Scottish Government to a target of net zero emissions of all greenhouse gases by 2045.
- **Ayrshire Growth Deal:** In March 2019, the £250 million Ayrshire Growth Deal (£100 million from the Scottish and UK Governments, supported by investment from South, East and North Ayrshire Councils) was signed to help drive economic development across the region. The Deal will invest in growing sectors including aerospace, energy and life sciences as well as building on Ayrshire’s existing strengths in food and drink, manufacturing and engineering, with a particular focus on improving the region’s digital connectivity and infrastructure. In the lead up to the Deal, an Ayrshire Transport Summit was held in Kilmarnock in 2018 bringing together local partners to identify the key problems and opportunities in the region. Findings from the Summit have supported a baseline understanding of transport issues in the region.
- **SPT Regional Transport Strategy:** Sets out the strategic transport vision for the Strathclyde region and the shared goals of SPT and its partners. A new RTS is in the process of being developed.
- **Other Regional and Local Policy Documents:** This includes Local Transport Strategies as well as 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 four Priorities presented 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.



Prior to the commencement of STPR2, an Initial Appraisal: Case for Change study was prepared for the South West of Scotland³. While focused on the Dumfries & Galloway region, this study included analysis of transport problems and opportunities in the southern parts of South and East Ayrshire Councils. Data gathered as part of, and relevant findings from the study have therefore been used as supplementary inputs to this study.

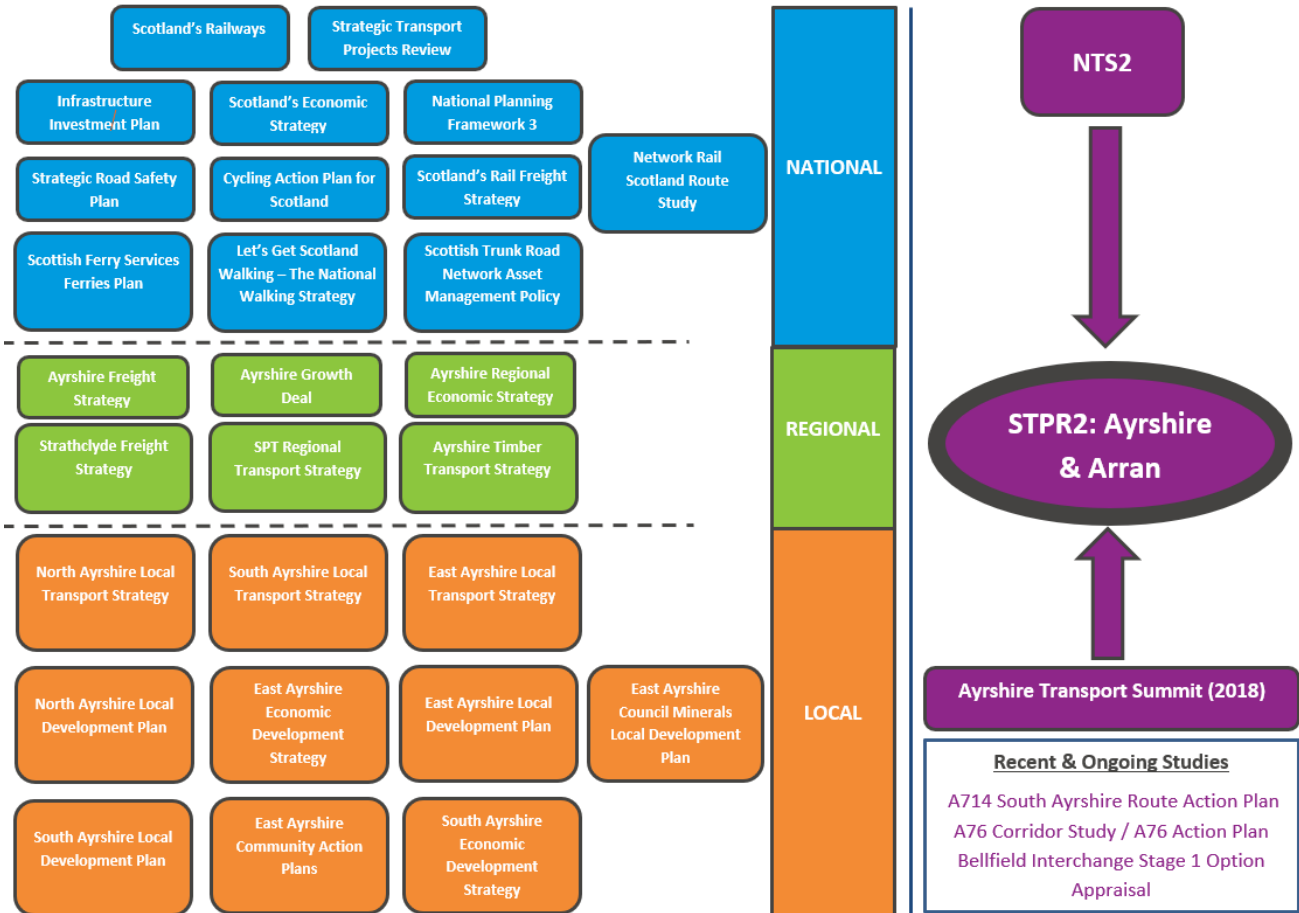


Figure 3: Strategy and Policy Overview (Click image to enlarge figure)

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 (EqIA), 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.

³ Transport Scotland, South West Scotland Transport Study, January 2020: <https://www.transport.gov.scot/media/47032/swsts-inital-appraisal-case-for-change-including-appendices.pdf>

2.2. Geographic Context

The Ayrshire & Arran region includes a mix of urban and rural areas. Figure 4 shows the Urban Rural 2016 6-Fold Classification⁴. The 6-fold classification consists of the following; the proportion of the regional population residing in each classification is presented in brackets⁵:

- Large Urban Areas (0%)
- Other Urban Areas (61%)
- Accessible Small Towns (14%)
- Remote Small Towns (5%)
- Accessible Rural (14%)
- Remote Rural (5%)

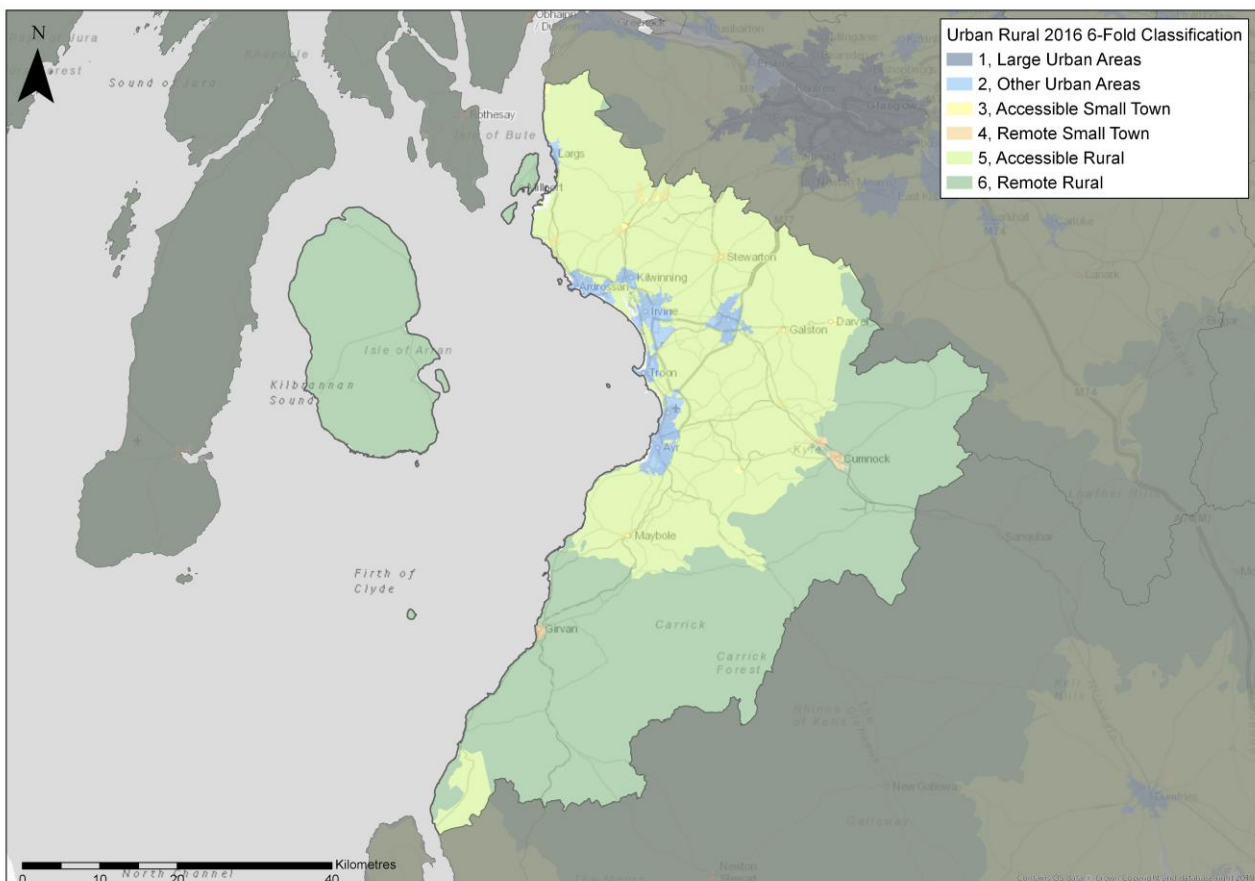


Figure 4: Urban Rural 2016 6-Fold Classification (Click image to enlarge figure)

⁴ Scottish Government Urban Rural Classification (Scottish Government, 2016) <https://www.gov.scot/publications/scottish-government-urban-rural-classification-2016/pages/2/>

⁵ Based on Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>



2.3. Socio-Economic Context

2.3.1. Population

In 2018 the Ayrshire & Arran region had a population of almost 370,000 people⁶. The regional population density is higher than the Scotland average⁷. There has been a decrease in the region’s population between 2011 and 2018; -1.1% compared to an increase of +2.7% across Scotland⁸.

Top 10 Mid-2016 Population Localities

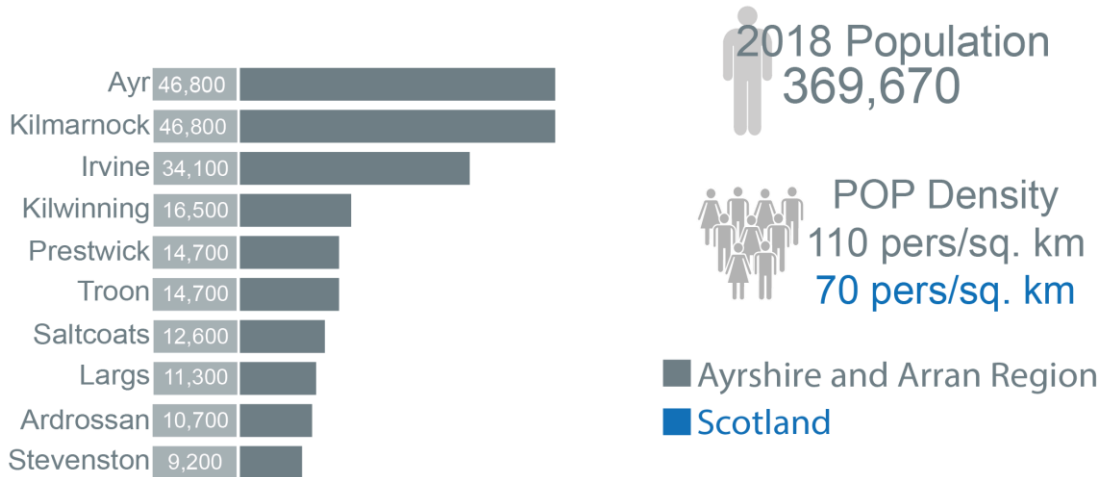


Figure 5: Ayrshire & Arran Largest Settlements by Population, 2018 Population and Population Density

Settlement sizes are shown in Figure 5⁹, demonstrating that the largest settlements are in the northern part of the region, within closer proximity to Glasgow.

⁶ Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>

⁷ Based on Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>

⁸ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>; Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>

⁹ Population Estimates for Settlements and Localities in Scotland, Mid 2016 (National Records of Scotland) <https://www.nrscotland.gov.uk/files//statistics/settlements-localities/set-loc-16/set-loc-2016-publication-updated.pdf>; Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>



Top 10 Mid-2016 Population Localities – Change from 2012



Figure 6: Population Change by Settlement 2012 – 2016

Population change for settlements in the region are shown in Figure 6¹⁰. This indicates that multiple settlements within the region have recorded a slight decline in population between 2012 and 2016, though Kilmarnock and Irvine recorded a slight population increase of around 1% each.

A comparison of the region’s population by age in 2011 and 2018 is presented in Figure 7¹¹. This demonstrates that the proportion of people aged 15 and Under and the Working Age population has decreased between 2011 and 2018 in Ayrshire & Arran; whereas across Scotland the proportions have remained the same. Conversely, the proportion of people aged 65+ has increased significantly over the same period; this is broadly in line with the Scotland average. This indicates an ageing population in the region.

¹⁰ Population Estimates for Settlements and Localities in Scotland, Mid 2016 (National Records of Scotland) <https://www.nrscotland.gov.uk/files//statistics/settlements-localities/set-loc-16/set-loc-2016-publication-updated.pdf>

¹¹ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/> and Mid year Population Estimates 2018 (National Records of Scotland) <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates>

Population Age Change from 2011 to 2018

Census Mid-Year NRS

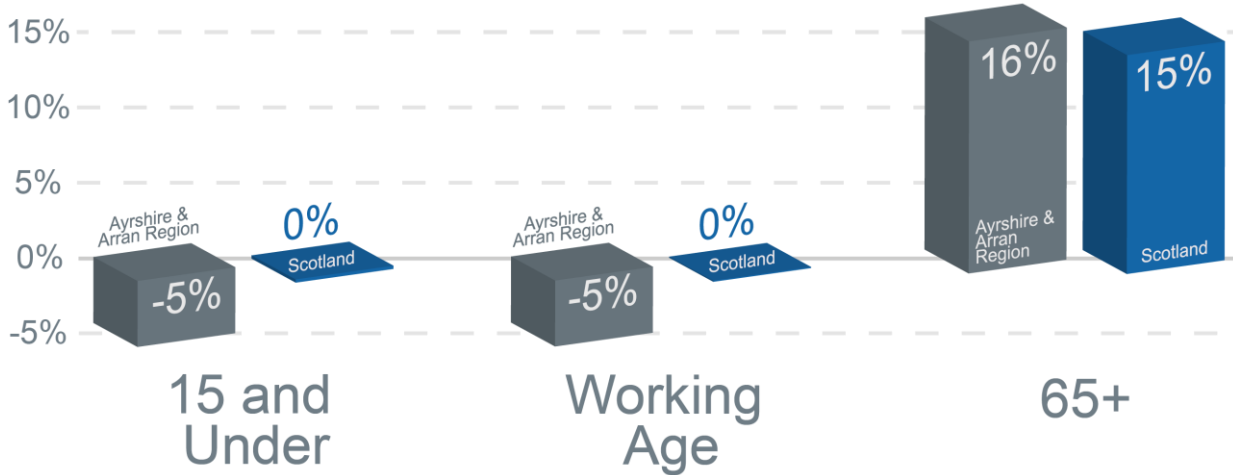


Figure 7: Ayrshire & Arran and Scotland Change in Population by Age, 2011 to 2018

2.3.2. Travel to Work – Mode Share

As shown in Figure 8, car is the most popular mode of travel to work in the region (68%), which is higher than the Scottish average (62%)¹². Conversely, travel to work levels for walking and bus are slightly below the Scottish average. Rail and home working are in line with Scotland wide figures.

Travel to Work Mode Share 2011

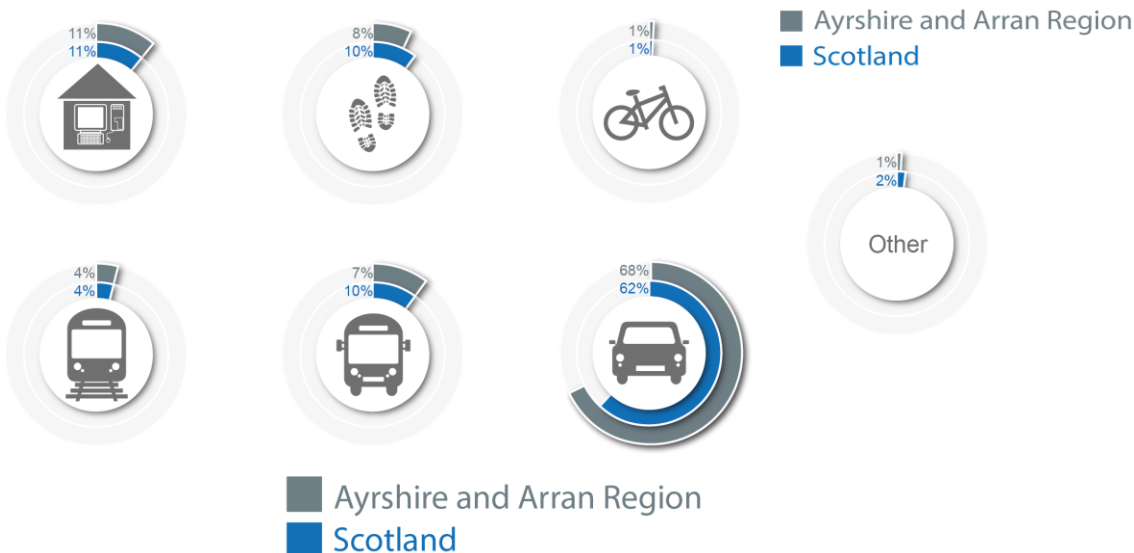


Figure 8: Mode of Travel to Work

¹² Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>



The proportion of households that own a car is slightly higher in Ayrshire & Arran compared to Scotland as a whole (71% compared to 69%)¹³, reinforcing a trend of higher car dependence related to the rural nature of the region.

Car or Van Availability per Household 2011

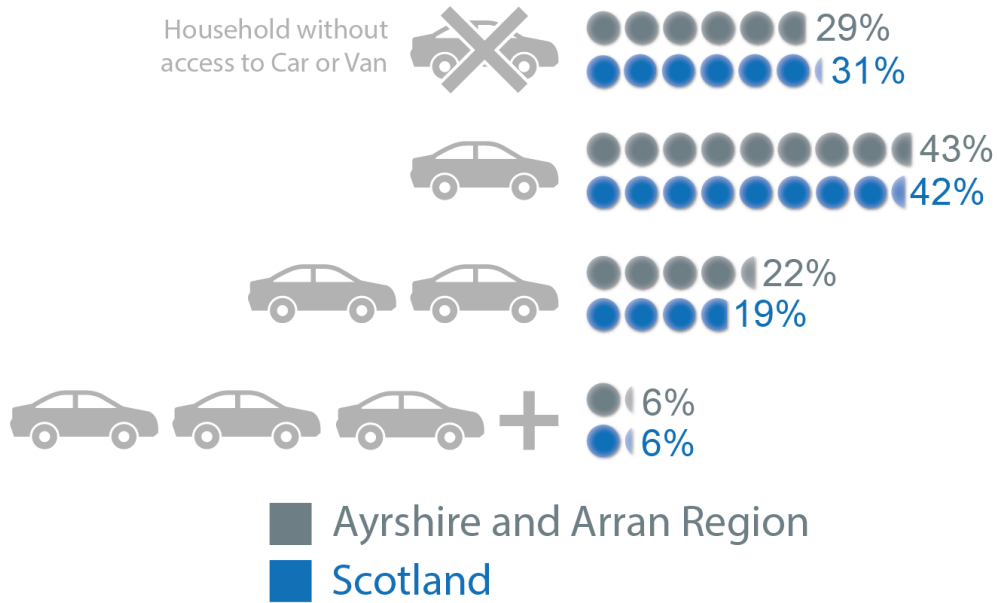


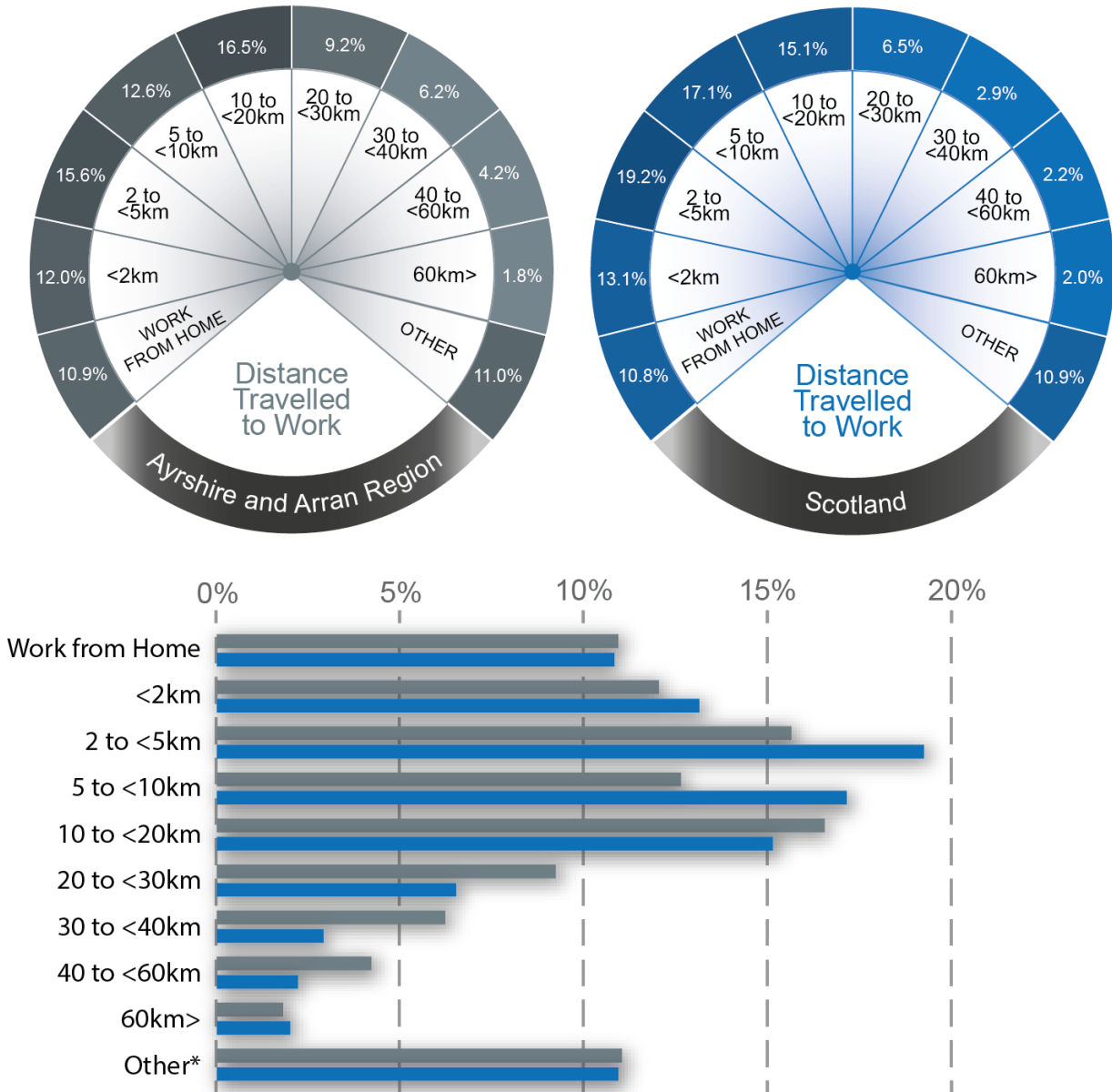
Figure 9: Proportion of Households without Car Ownership

¹³ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>



2.3.3. Travel to Work – Distance Travelled

Distance Travelled to Work 2011



*Other includes no fixed place of work, working on an offshore installation and working outside of the UK.

Figure 10: Distance Travelled to Work

As shown in Figure 10, a lower proportion of Ayrshire & Arran residents travel less than 10km to work compared to across Scotland (40% compared to 49%). Conversely, a considerably higher proportion of Ayrshire & Arran residents travel between 10km and 60km compared to across Scotland (36% v 27%)¹⁴. This is reflective of the strong trend for travel to work in Glasgow by residents in the region. Building on this, previous analysis has shown that only 9% of people who worked in Ayrshire in 2011 commuted in from other regions (approx. 10,000 people), whereas commuting movements out of the region are

¹⁴ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>



more prevalent with 16% (or approx. 30,000) of all residents in employment commuting to other regions, mainly the Glasgow City Region¹⁵ (i.e. almost three times the movements into the region). It has been suggested that this may be indicative of a shortage of higher value job opportunities within the Ayrshire region, and indicates that the economic development of the region has traditionally, been closely tied to other nearby, more dominant regional economies¹⁶.

2.3.4. Economic Activity

In economic terms, over the last decade, the region has persistently underperformed Scotland as a whole, with higher rates of unemployment in the region in 2018 (5.3% compared to 4.4% nationally¹⁷), and contributing just 5% of Scottish GDP, the lowest contribution per head in Scotland. It is also noted that, while Scotland as a whole recovered from the 2008-09 recession, levels of GVA across Ayrshire only recovered to pre-recession levels in 2016¹⁸. Over the 5-year period 2011 – 2016, GVA increased by 16.5%, although this is 1.9% lower than the overall Scotland figure¹⁹. Recent data has also shown growth in some sectors, particularly manufacturing which constitutes almost a fifth of the region's overall economic activity.

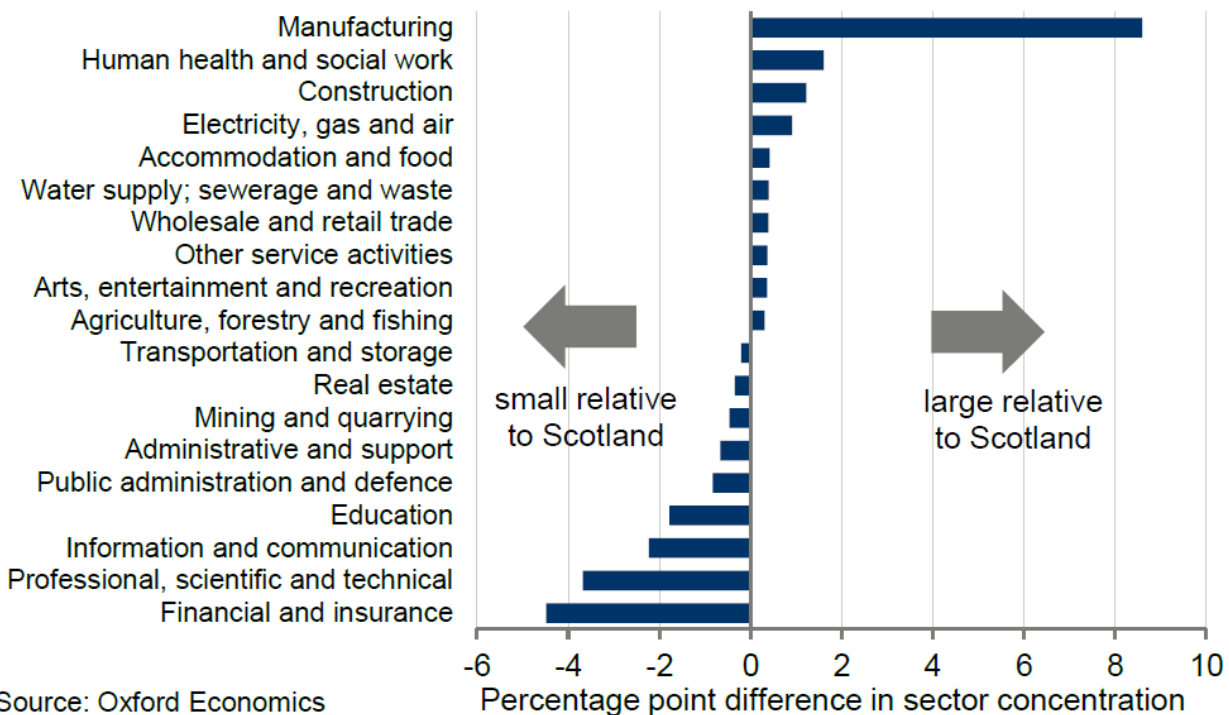
¹⁵ Oxford Economics, International Research on Regional Economies, Implication for Delivering Inclusive Growth in Scotland, Section 7.3 Ayrshire, May 2019: <https://www.scottishfuturetrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf>

¹⁶ Oxford Economics, International Research on Regional Economies, Implication for Delivering Inclusive Growth in Scotland, Section 7.3 Ayrshire, May 2019: <https://www.scottishfuturetrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf>

¹⁷ Nomis 2018.

¹⁸ Oxford Economics, International Research on Regional Economies, Implication for Delivering Inclusive Growth in Scotland, Section 7.3 Ayrshire, May 2019: <https://www.scottishfuturetrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf>

¹⁹ Office for National Statistics (ONS).



Source: Oxford Economics

Figure 11: Sector GVA Share Ayrshire vs Scotland 2018²⁰

Although Ayrshire has a tendency to underperform in economic terms compared to Scotland as a whole, there are differences within the region. For instance, in South Ayrshire employment fell from 2013 to 2018 (-0.5%) whilst North Ayrshire and East Ayrshire in particular have seen employment grow (+0.8% and +1.3% respectively). It is noted that these areas are closer to the Glasgow City Region and so may benefit from this close proximity to a large employment centre, whilst those in South Ayrshire are less able to do so. Ayrshire & Arran’s close proximity to main employment centres in other regions is reflected in the proportion of residents that travel out with the region for work (16%).

There are 6,976 data zones across Scotland, of which 502 are located in Ayrshire & Arran. Within Ayrshire & Arran, 152 data zones are ranked amongst the 20% most deprived for employment across Scotland; equivalent to 30% of the region’s total. This indicates that there is a higher proportion of more deprived data zones in the region compared to Scotland as a whole. Further to this, 16% of working age people in North Ayrshire claim out of work benefits, which is the third highest proportion of all local authorities in Scotland; followed by East Ayrshire at 14% (6th highest in Scotland) and South Ayrshire at 12% (10th highest in Scotland). These proportions are significantly higher than the local authorities with the lowest proportion of out of work benefit claimants (Aberdeenshire 6% and Orkney Islands, 7%).

²⁰ Oxford Economics, International Research on Regional Economies, Implication for Delivering Inclusive Growth in Scotland, Section 7.3 Ayrshire, May 2019: <https://www.scottishfuturetrust.org.uk/storage/uploads/internationalresearchonregionaleconomiesmay2019.pdf>

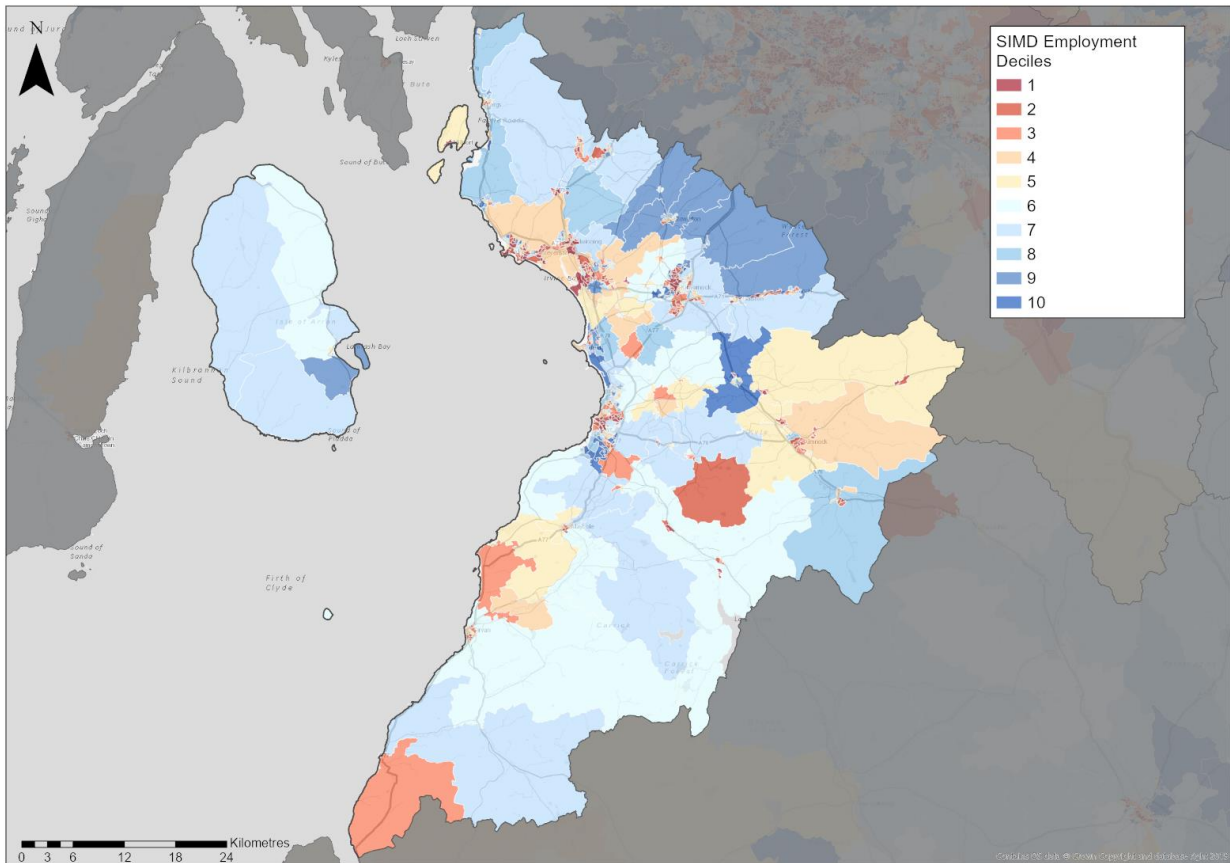


Figure 12: SIMD Employment Domain²¹ (Click image to enlarge figure)

²¹ SIMD Employment Domain 2016.

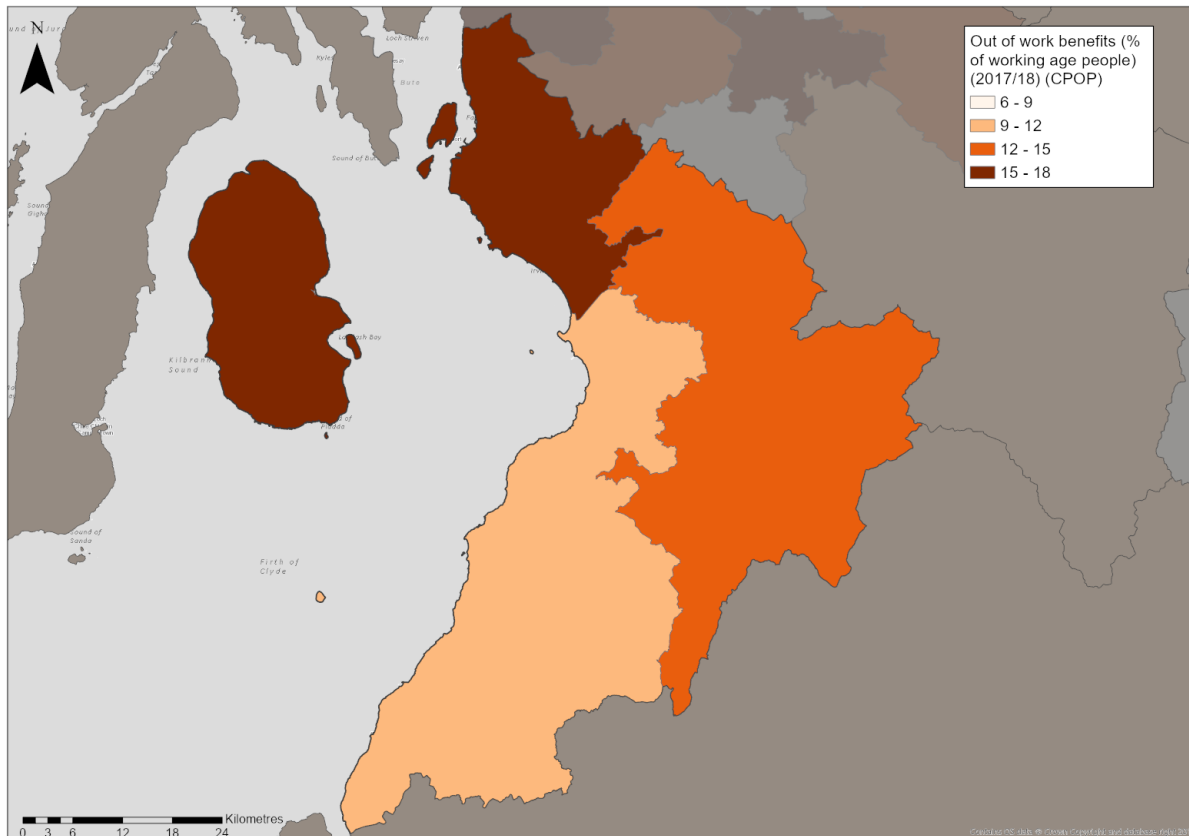


Figure 13: Out of Work Benefits²² (Click image to enlarge figure)

2.3.5. Access to Employment

Figure 14 demonstrates accessibility in the region to key employment centres by public transport on a typical weekday morning. Key employment locations are mostly located in and around Ayr, Kilmarnock and Irvine, where access by public transport in and around these areas is typically up to 45 minutes. However, in other parts of the region, journey times by public transport to key employment sites can be longer than 90 minutes, particularly in southern parts of South Ayrshire and East Ayrshire and eastern parts of East Ayrshire.

²² Community Planning Outcomes Profile.

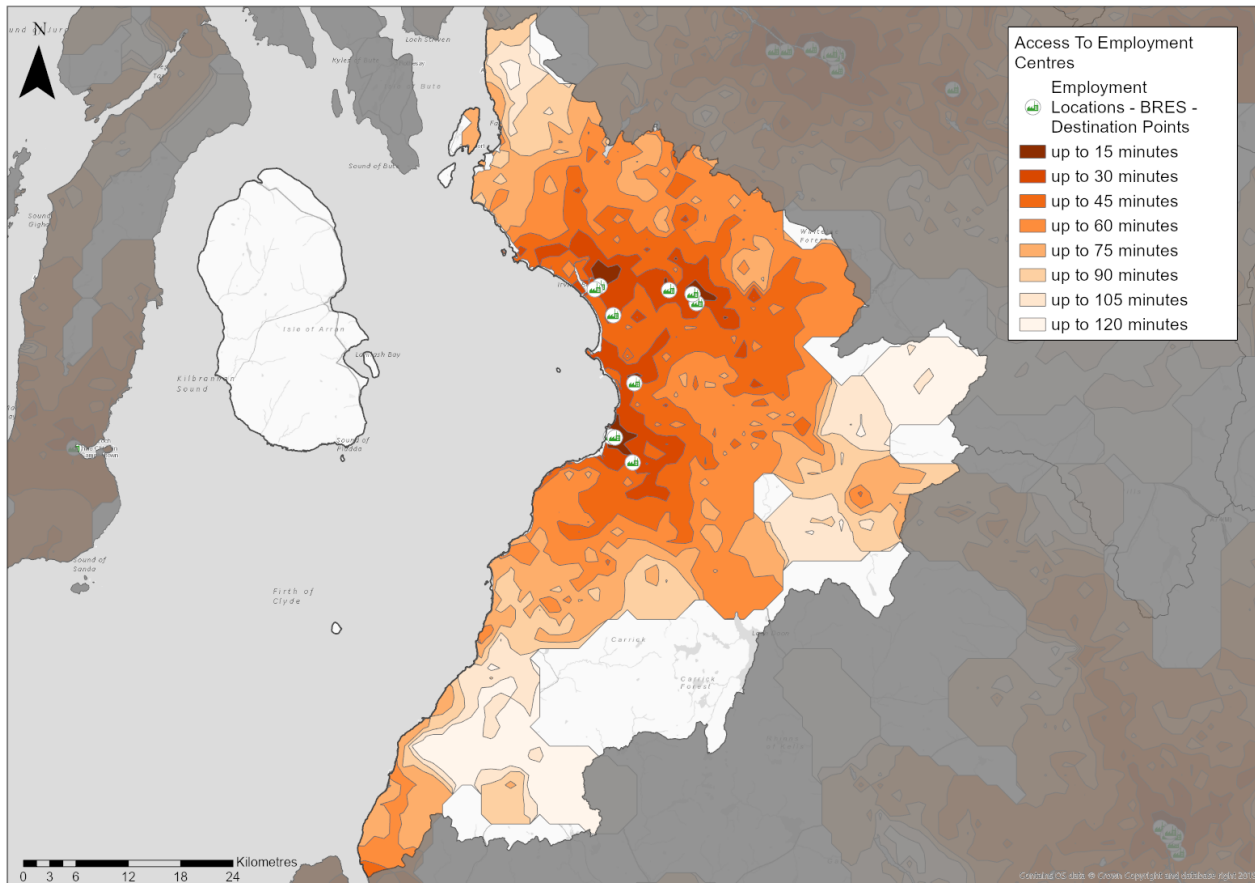


Figure 14: Public Transport Access to Employment Centres (Click image to enlarge figure)

2.3.6. Deprivation

The Scottish Index of Multiple Deprivation (SIMD) further demonstrates the socio-economic issues experienced in the region, with 30% of all data zones in the region (equating to 151 data zones) within the 20% most deprived in Scotland; these are shown in red in Figure 15. Pockets of deprivation are particularly evident in data zones within Ayr, Irvine, Stevenston, Kilmarnock, Cumnock and Girvan.

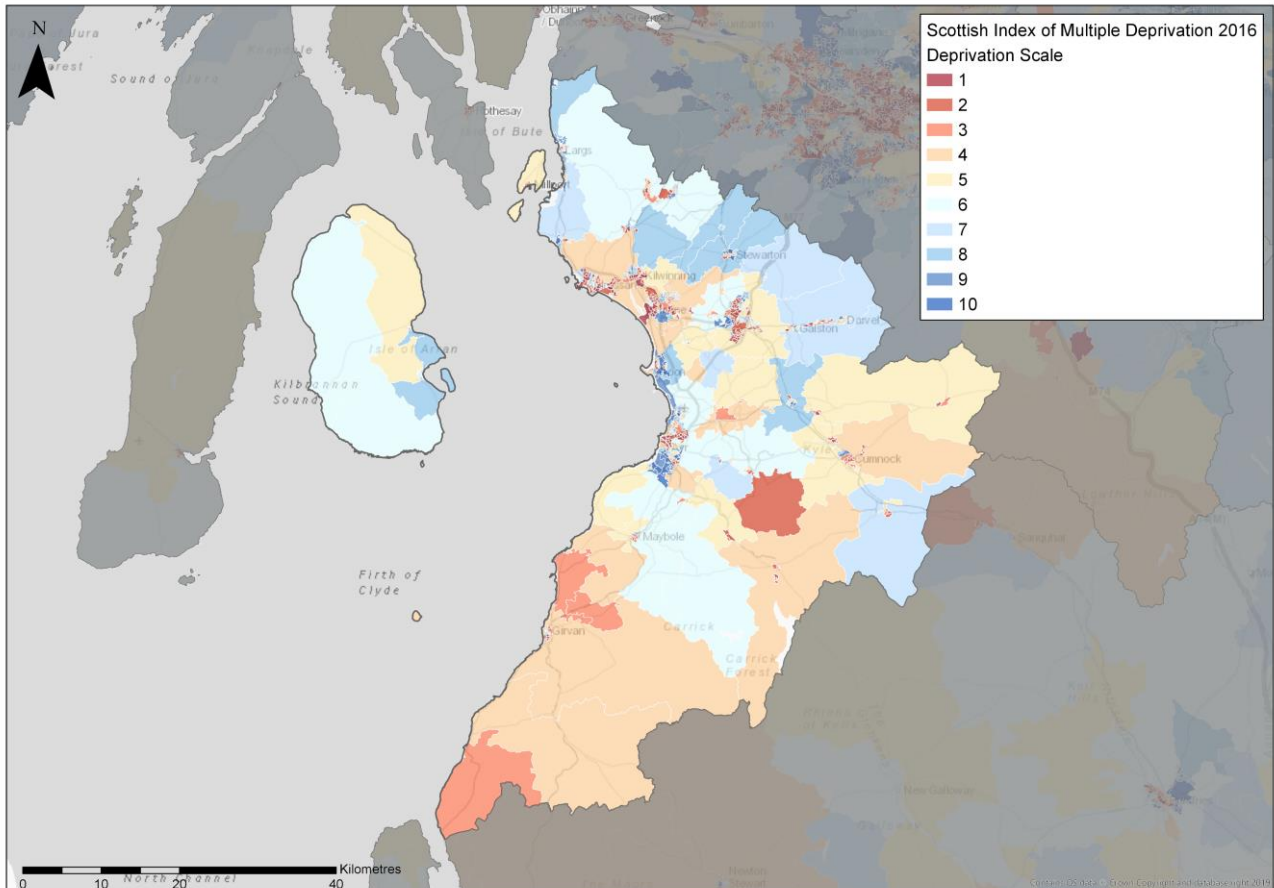


Figure 15: Scottish Index of Multiple Deprivation 2016 (Click image to enlarge figure)



2.3.7. Health

From a health perspective, SIMD health indicators show that there are multiple data zones, particularly in urban areas (e.g. Ayr, Irvine, Kilmarnock, Maybole, the Three Towns (Saltcoats, Stevenston and Ardrossan), Girvan, Kilwinning) that record low health indices, while the proportion of people in Ayrshire with a long term physical or mental health condition is higher in the region compared to Scotland. As shown in Figure 16, North Ayrshire is the highest at 35%, compared to the Scotland average of 22%²³. Furthermore, 22.1% of the population in the region has a long term activity limiting health problem or disability, which is also above the Scotland average (19.6%)²⁴.



Figure 16: Proportion of population with a long term physical or mental health condition

²³ Scottish Household Survey (2016).

²⁴ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>

2.4. Environmental Context

As shown in Figure 17²⁵, the region has several Environmental Designations, including 16 Sites of Special Scientific Interest (SSSIs), two Special Protection Areas (SPAs) and one Special Area of Conservation (SAC). There is also one National Scenic Area (NSA) and one Marine Protected Area (MPA) in North Ayrshire. These designated sites are largely situated on the Isle of Arran, the coastline and the boundaries of the region, particularly east of Cumnock.

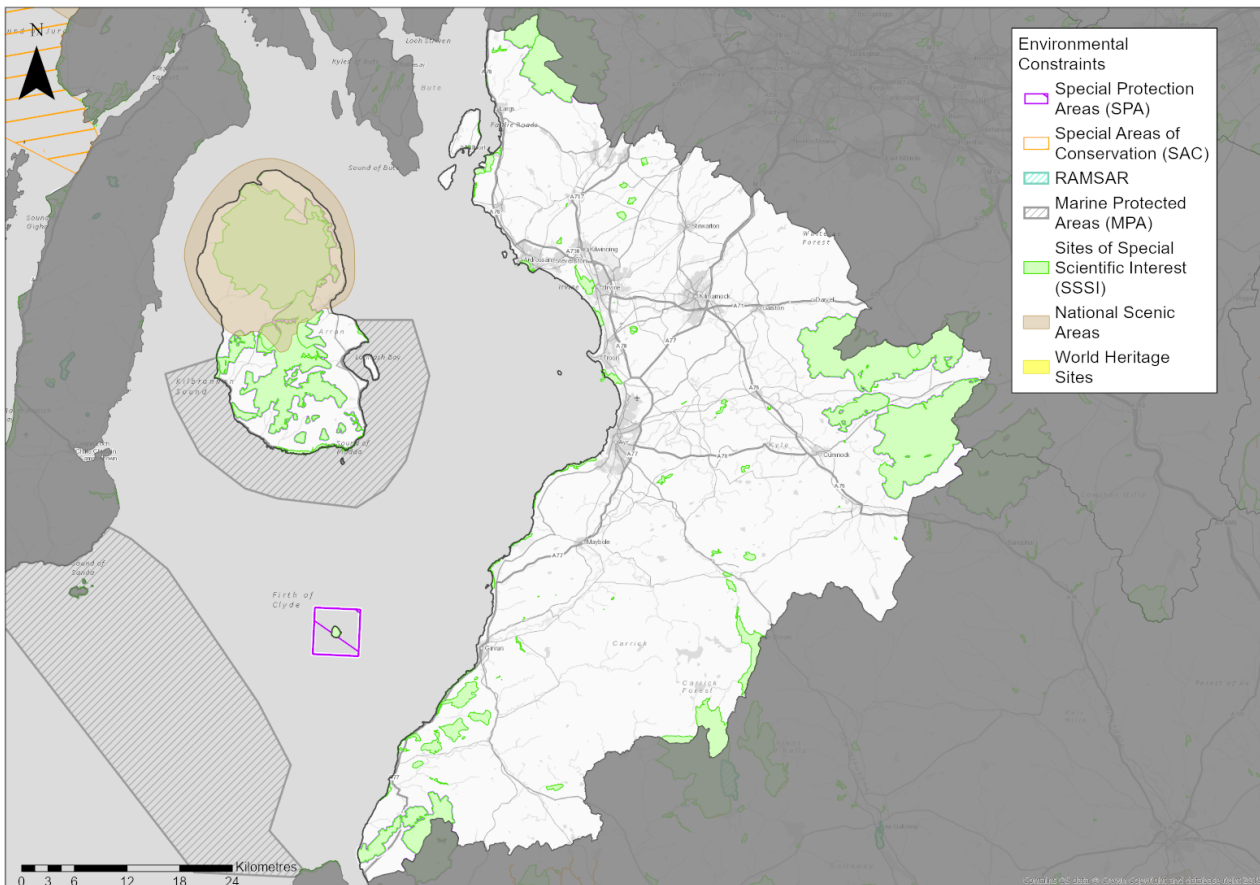


Figure 17: Environmental Designations (Click image to enlarge figure)

The Scottish Environmental Protection Agency (SEPA) indicates a medium risk of flooding in the Prestwick area and a high risk to the area west of Irvine.

North Ayrshire records higher CO₂ emissions per capita relative to East Ayrshire and South Ayrshire. While these CO₂ emissions are higher than a number of other rural local authorities, including Dumfries and Galloway, Scottish Borders and the Highland Council regions, they are lower than other parts of Scotland, particularly the island authorities (i.e. Shetland, Orkney, and the Western Isles) which each record higher emissions. Per Capita Emissions 2017 (tonnes) CO₂²⁶ are presented below for the three Ayrshire & Arran

²⁵ Contains SNH information licensed under the Open Government Licence v3.0.

²⁶ UK Local Authority and Regional Carbon Dioxide Emissions National Statistics 2005 to 2017 (Department for Business, Energy and Industrial Strategy, 2019)
www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017

local authorities. This shows that East Ayrshire and South Ayrshire are below the Scotland average, whereas North Ayrshire is slightly higher.

- East Ayrshire (3.9 t)
- North Ayrshire (5.8 t)
- South Ayrshire (4.2 t)
- Scotland (5.3 t)

2.5. Transport Context

Figure 18 shows the key transport networks in the region, including the National Cycle Network (NCN), rail stations, ferry links to Arran and Cumbrae, and the trunk road network. It shows that Ayrshire & Arran's transport network covers all modes including strong connections to the islands.

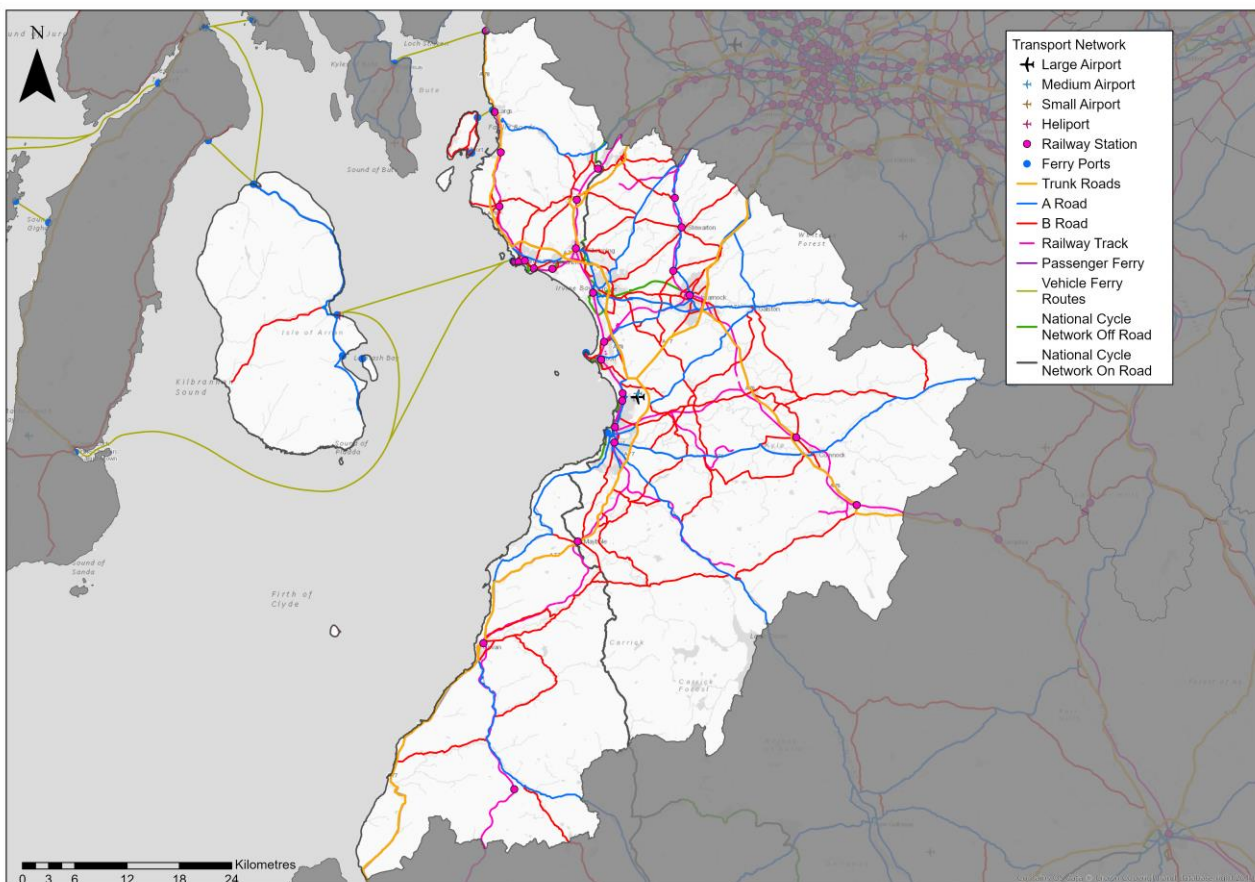


Figure 18: Ayrshire & Arran Transport Network (Click image to enlarge figure)

2.5.1. Active Travel

Several off-road and on-road cycle routes make up the NCN in the region, which includes: NCN Route 73 (Kilmarnock to Ardrossan: Passing through Kilmarnock, Irvine, Saltcoats and Ardrossan), NCN Route 753 (Ardrossan to Gourock) and NCN Route 7 Sunderland to Inverness (passing through Galloway Forest Park, Maybole, Ayr and Kilwinning). In addition, the region has an extensive Core Paths network. Scotland's first Road Cycle Park – often referred to as 'the Ayrshire Alps' – comprises the hill roads of South Carrick



and is popular with recreational cyclists due to its scenery, cycle friendly roads and challenging terrain.

Data shows that 0.8% of residents in the region cycle to work, which is lower than the Scotland average of 1.4%²⁷. Likewise, 7.8% of residents walk to work, which is also slightly below the Scotland average of 9.9%²⁸. More recent monitoring data from Cycling Scotland²⁹ shows that the proportion of people regularly or usually cycling to work in the region has decreased between 2010-15 and 2015-16 by; 1.4% in East Ayrshire; 1% in North Ayrshire and by 0.4% in South Ayrshire.

2.5.2. Bus Network

Bus services in the region are primarily provided by Stagecoach, though smaller operators also provide services. Schools services, Community Transport and Demand Responsive Transport are also provided. Although there is reasonable coverage, the frequency of services differs widely depending on the time of day and location. Although the share of the population using a bus four or more days per week in South Ayrshire increased by 1.4% between 2003/04 and 2017, the equivalent figure decreased in East Ayrshire by 0.4% and by 2.1% in North Ayrshire³⁰. On Arran, despite the large increase in visitors to the island since the introduction of the Road Equivalent Tariff (RET), the number of bus services and passengers has remained broadly similar.

2.5.3. Rail Network

Ayrshire is connected to Glasgow by rail via the Glasgow South Western Line. This line includes routes to Ayr, Kilmarnock, Largs (with a branch to Ardrossan) and to Carlisle via Kilmarnock. There are 27 rail stations in Ayrshire & Arran; six in East Ayrshire, 12 in North Ayrshire and nine in South Ayrshire, with a review of patronage data showing that many rail stations have recorded large increases in rail patronage numbers over recent years. For example, Prestwick increased by 61% between 2007/08-2017/18, Kilmarnock increased by 52% and Irvine increased by 28%³¹. Based on total passenger numbers (entries and exits), Ayr (1,676,046), Kilwinning (1,042,654) and Kilmarnock (619,354) were the regions busiest stations in 2017/18³².

2.5.4. Maritime

The Ardrossan – Brodick ferry route carried nearly 841,000 passengers and 199,000 cars in 2018³³ – in terms of passengers this is the busiest route within the Clyde and Hebrides Ferry Services Network. With around 793,000 passengers in 2018³⁴, the Largs – Cumbrae route was the second busiest service. These routes, alongside other passenger ferry routes which operate within the Ayrshire & Arran region, are listed below:

²⁷ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>

²⁸ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>

²⁹ Cycle to Work Usually or Regularly Source: Scottish Household Survey 2016 with further information from Transport Scotland. Cycling Scotland, Annual Cycling Monitoring Report 2018: <https://www.cycling.scot/mediaLibrary/other/english/3028.pdf>

³⁰ Transport and Travel in Scotland, 2017.

³¹ 10 Year growth (2007/08 – 2017/18).

³² 2017/18 Rail Stations Entries / Exits.

³³ Calmac, Annual Carryings 2018: <https://www.calmac.co.uk/corporate/carrying-statistics>

³⁴ Calmac, Annual Carryings 2018: <https://www.calmac.co.uk/corporate/carrying-statistics>



- Ardrossan – Brodick
- Ardrossan – Campbeltown (summer only)³⁵
- Largs – Cumbrae
- Lochranza – Tarbert
- Lochranza – Claonaig (summer only)

A full review of ferry data is currently being co-ordinated as part of STPR2, which will provide a baseline of island connectivity for future planning.

In addition to the vehicle and passenger routes there are two commercial ports located at Troon and Ayr. Hunterston Port was previously in operation and is currently sitting dormant; a consultation draft Masterplan³⁶ for the site was published by the port owners in May 2019.

2.5.5. Road Network

The trunk road network consists of the following routes:

- M77 (Glasgow to Kilmarnock)
- A77 (Kilmarnock to Stranraer)
- A78 (Ayr to Greenock)
- A76 (Dumfries to Kilmarnock)
- A737 (Kilwinning to Paisley)
- A738 (Kilwinning to Pennyburn Roundabout)

In addition to these roads, the A70 between Cumnock and Ayr and A71 between Irvine and Kilmarnock (with both routes continuing east to the M74) provide strategic east-west links. There is also a network of 44 Electric Vehicle Charging Points across the region, although data shows that the number of Electric Vehicles per head is lower in the region compared to all other regions across Scotland.

2.5.6. Aviation

There is one airport in the Ayrshire & Arran region, at Glasgow Prestwick, north of Ayr. This is the only airport in Scotland which has a rail station and 30% of all passengers arrive by train³⁷. In 2015/16 the airport handled 624,000 passengers and processed over 11,000 tonnes of cargo³⁸.

³⁵ During summer timetable, service operates via Brodick on Saturday's only.

³⁶ Hunterston PARC, Hunterston Master Plan Consultation Draft, May 2019:
<https://www.peelports.com/media/4436/hunterston-masterplan-2019-digital.pdf>

³⁷ Glasgow Prestwick Airport, Facts and figures:
<https://www.glasgowprestwick.com/corporate/about-us/useful-information-2/>

³⁸ Glasgow Prestwick Airport, Strategic Plan 2017 – 2022:
https://www.glasgowprestwick.com/wp-content/uploads/2017/06/GPA_Strat_Plan_16_AW3_Online_SinglePages.pdf



2.6. Context Summary

- In economic terms, over the last decade, the region has persistently underperformed compared to Scotland as a whole, with areas of high deprivation; some 30% of data zones in the region are ranked amongst the 20% most deprived in Scotland. However, the manufacturing sector has recorded strong growth and constitutes almost a fifth of the regions overall economic activity.
- There has been a decrease in the region's population between 2011 and 2018 (-1.1%) compared to +2.7% across Scotland.
- Car ownership is higher than the Scottish average, which is reflected in this mode's dominance for travel to work. Conversely, travel to work by bike and foot is below the Scottish average.
- The proportion of people in Ayrshire with a long term physical or mental health condition is higher in the region compared to Scotland. The proportion of people in the region with a long term activity limiting health problem or disability is also above the Scotland average.
- A lower proportion of Ayrshire & Arran residents travel less than 10km to work compared to across Scotland. Conversely, a considerably higher proportion of the region's residents travel between 10km and 60km compared to across Scotland. This is reflective of the strong trend for travel to work in Glasgow.
- There is generally a good north-south network of transport infrastructure in the region, providing strong transport connections to the Glasgow City Region. The east-west transport network is less developed.

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 strategic transport network in the Ayrshire & Arran Region and details the approach to their identification.

3.1.1. Data Analysis

A wide range of data sources has been used to identify transport related problems and opportunities in the region. Analysis of the data has also enabled problems and opportunities identified through stakeholder engagement to be evidenced to understand the real and perceived nature of feedback and comments raised. Sources of analysis have included primary data such as 2011 Census, mobile phone data³⁹ 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 in this chapter, 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 Ayrshire & Arran region this has consisted of:

- **Problems and Opportunities workshops** held in Ardrossan and Kilmarnock with regional stakeholders in June 2019.
- **Option Generation workshops** held in the same locations in November 2019 to identify potential options to address the identified problems and opportunities.
- **Structured Interviews** undertaken with stakeholders, including senior officers across the three Ayrshire Local Authorities, Regional Transport Partnership officers and other organisations in the region.
- An **Elected Members Briefing** held in Irvine in January 2020 and attended by around 30 Elected Members and Senior Officers.
- 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 includes representatives from

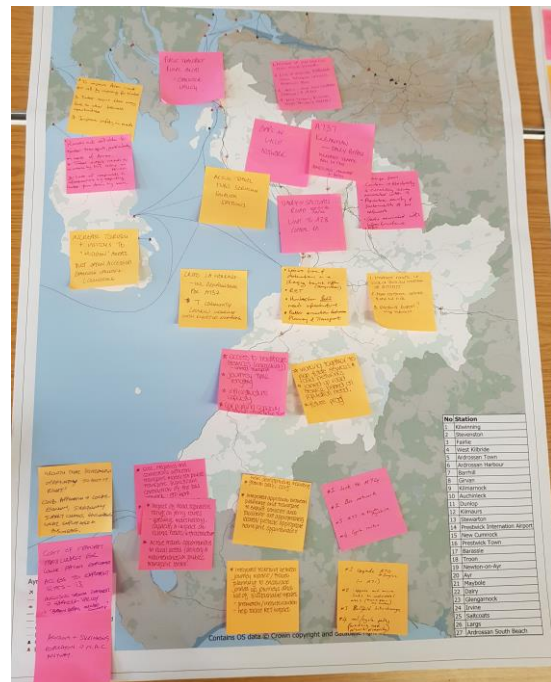


Figure 19: Stakeholder Engagement

³⁹ Data supplied by INRIX via Transport Scotland.



the constituent Councils, the Ayrshire Roads Alliance, SPT, Ayrshire Growth Deal and Transport Scotland.

- **Schools Engagement** is underway throughout the country, with one primary school in East Ayrshire 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. A secondary school in North Ayrshire is also due to be engaged with.

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 Ayrshire & Arran region. Evidence to support the themes listed below is provided in this section.

- Active Travel Facilities & Safety
- Accessibility
- Connectivity and Journey Times
- Resilience
- Capacity Constraints and Congestion
- Frequency and Fragility of Public Transport
- Transport Poverty and Affordability

3.2.1. Problems

ACTIVE TRAVEL FACILITIES & SAFETY

To realise national policy objectives around improving health and wellbeing, and reducing the impact of transport on the environment, a step change in levels of active travel (walking and cycling) for all journeys is required.

In the Ayrshire & Arran region, levels of active travel are low. This is reflected by the travel to work modal share of the population, whereby, as noted in Chapter 2, only 0.8% cycle to work and 8% walk to work in the region (compared to 1.4% and 10% nationally)⁴⁰. Figure 20 further demonstrates that a large majority of areas in the region fall below the Scottish Government target set out in the Cycling Action Plan for Scotland 2017-2020⁴¹ for 10% of everyday journeys to be made by bike by 2020. For example, only 28 Output Areas in the region have more than 5% of people that travel to work by bike and only five have more than 10% of the population which travel to work by bike.

⁴⁰ Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>

⁴¹ Transport Scotland, Cycling Action Plan for Scotland 2017 – 2020: <https://www.cycling.scot/mediaLibrary/other/english/1099.pdf>

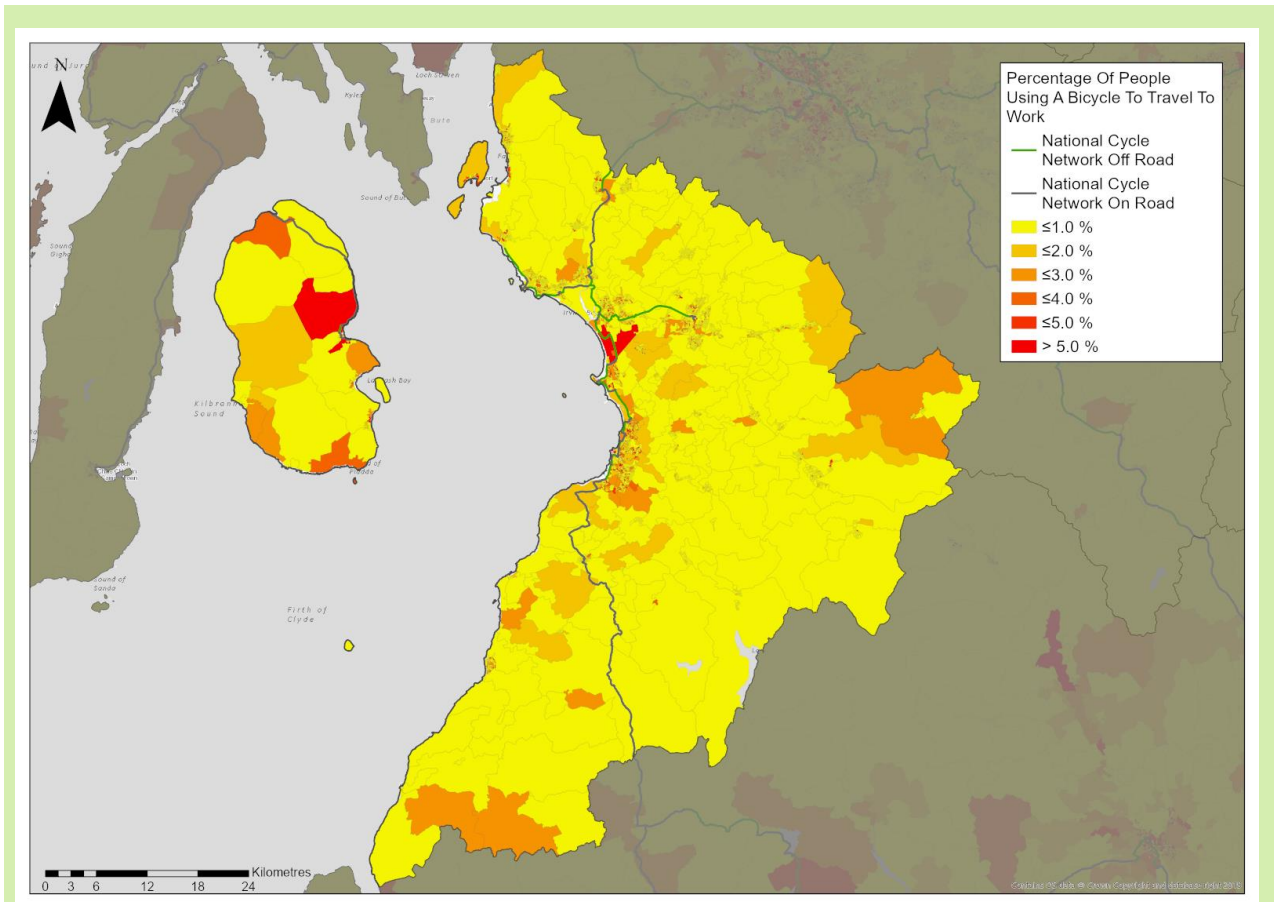


Figure 20: Percentage of People Travelling to Work by Bicycle⁴² (Click image to enlarge figure)

Data within Cycling Scotland’s Annual Cycling Monitoring Report 2018 also shows that the proportion of people who usually or regularly cycle to work has decreased across each of the local authorities in the region between 2010-2015 (average) and 2015-16 (average); East Ayrshire 4.3% to 2.9%; North Ayrshire 3.2% to 2.2%, and South Ayrshire 3.5% to 3.1%⁴³. Reasons for this decline are not certain but a strong message emerging from stakeholder engagement has related to concerns around safety. Accident data showed that there were 200 cyclist related casualties in Ayrshire & Arran between 2013 and 2017, with two fatal, 46 serious and 152 slight. It was noted by stakeholders that the volume of traffic creates the perception of junctions such as Mauchline Cross on the A76, Bellfield Interchange and Pennyburn Roundabout being unsafe for cyclists; these issues are particularly felt by less experienced cyclists.

It is further noted that whilst the Ayrshire & Arran region is relatively well served by NCN infrastructure, stakeholders felt that the network generally catered for leisure and recreational cycling rather than day-to-day commuter cycle trips. Specific gaps highlighted in the active travel network are between Kilmarnock to Ayr, Mauchline to Ayr, Cumnock to Kilmarnock and north of Ardrossan to Skelmorlie and Inverkip (expanded upon under the Opportunities section).

⁴² Census 2011 (Scotland) <https://scotlandscensus.gov.uk/>

⁴³ Cycle to Work Usually or Regularly source: Scottish Household Survey 2016 with further information from Transport Scotland. Cycling Scotland, Annual Cycling Monitoring Report 2018: <https://www.cycling.scot/mediaLibrary/other/english/3028.pdf>



The standard of carriageway was also identified as a problem, as well as the absence of (and where they do exist, the standard of) footways. Data from the Scottish Road Maintenance Condition Survey (SRMCS) shows the percentage of Urban and Rural A, B, C and U roads classified as red or amber⁴⁴. Data for 2017 indicated that North Ayrshire had the highest proportion of Rural A roads classified as red of all local authorities in Scotland (11.04%, with South Ayrshire sitting at 7.25% and East Ayrshire at 2.14%)⁴⁵. This may be indicative of wider safety concerns cited by cyclists.

With regards to active travel facilities, Ayr and Troon rail stations have the highest number of cycle parking spaces, with 52 and 30 spaces respectively⁴⁶. Stations south of Ayr and Kilmarnock generally have a lower number of spaces. It has further been noted by stakeholders that cycle storage facilities are limited on ferry and bus services. For example, cycle spaces on ferry services cannot be reserved and during peak periods (particularly on weekends during the summer), it may not be possible to sail on preferred crossings. With regards to buses, the main operator in the region (Stagecoach) does allow bikes on services, though this is at the discretion of the driver. A lack of onboard storage facilities exacerbates the perception that active travel facilities are limited in the region.

ACCESSIBILITY

The Scottish Access to Bus Indicator (SABI) for Ayrshire & Arran shows that there are large areas of the region where there is low access to bus services, including south and east of Girvan, parts of east East Ayrshire and the north of North Ayrshire (out with larger settlements such as Dalry, Largs and West Kilbride); this is presented in Figure 21. This supports feedback received during stakeholder engagement that many rural communities feel isolated in transport terms, with residents experiencing difficulties to access employment and key services such as education, healthcare and retail by public transport.

⁴⁴ Red is a Road Condition Index score ≥ 100 - where the carriageway is in poor overall condition which is likely to require planned maintenance soon (i.e. within a year or so). Amber is an RCI score ≥ 40 and < 100 - where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance treatment.

⁴⁵ SCOTS Backlog and Steady State Report 2017.

⁴⁶ National Rail website.

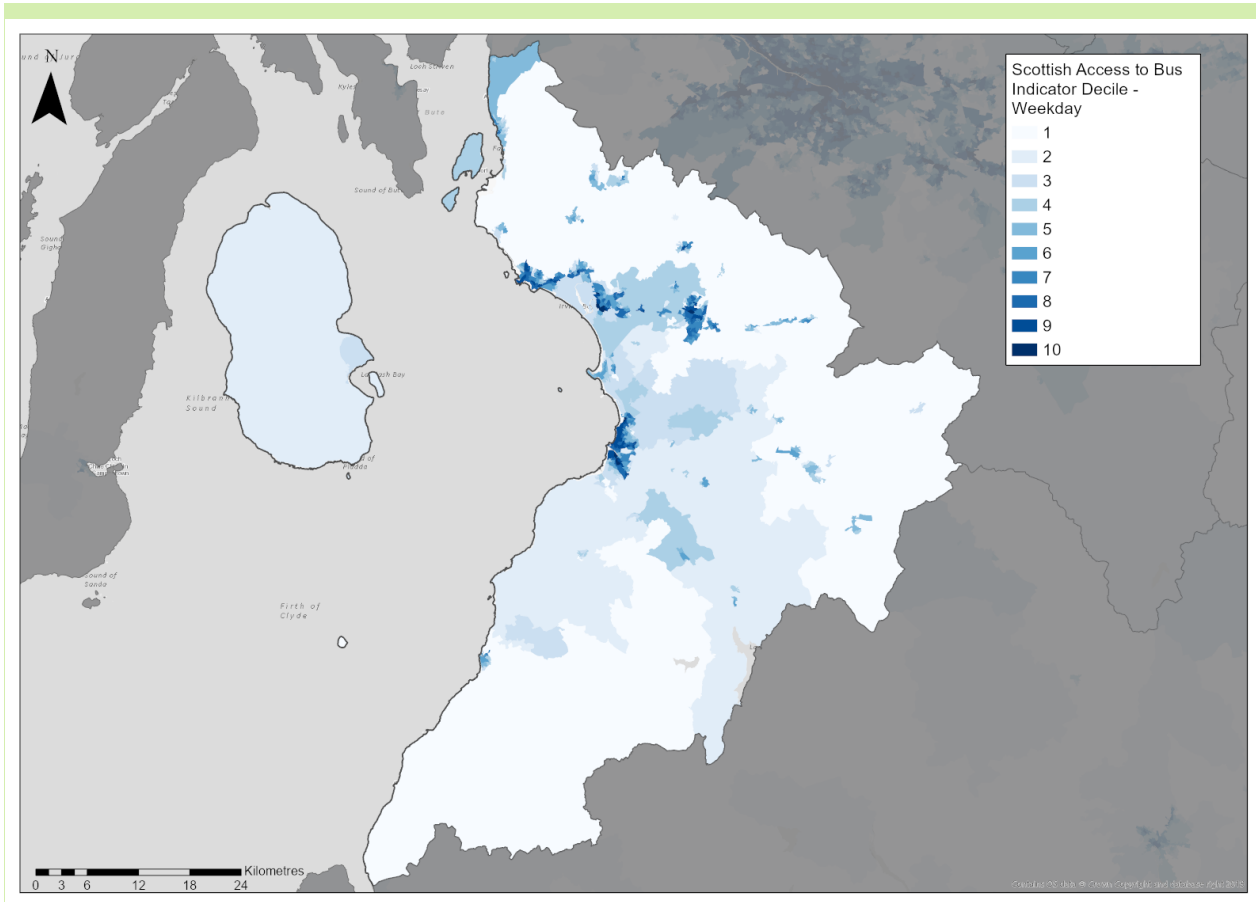


Figure 21: Scottish Access to Bus Indicator, Weekday (Click image to enlarge figure)

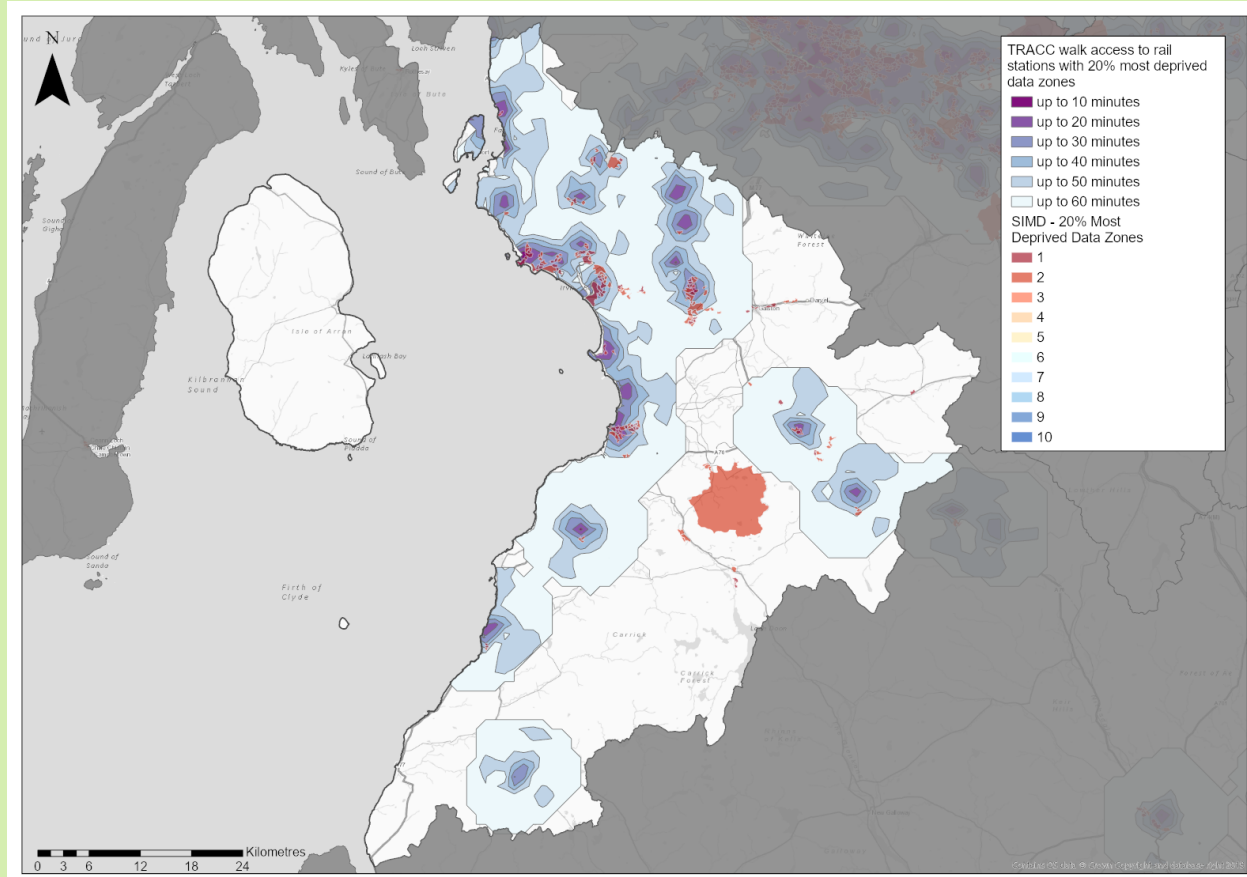
Analysis of TRACC⁴⁷ data shows the percentage of Ayrshire & Arran residents that can access key services within defined time parameters, as exemplified below:

- 90% of the region’s population can access an Employment Centre by public transport within 60 minutes of travel time (06:00-10:00 departure time) and 65% can access an Employment Centre by public transport within 30 minutes of travel time.
- 97% of the region’s population can access a School by public transport within 30 minutes of travel time (07:00-09:00 departure time).
- 50% of the region’s population can access a rail station by foot within 30 minutes walk time.
- 73% of the region’s population can access a Hospital⁴⁸ by public transport within 60 minutes of travel time (07:00-10:00 departure time); only 17% can access a Hospital by public transport within 30 minutes of travel time.

The impact of public transport accessibility issues is discussed further under the Frequency and Fragility of Public Transport section.

Further to this, TRACC outputs shown alongside the 20% most deprived data zones in Scotland located in the Ayrshire & Arran region (see Figure 22) demonstrates that there are a number of deprived data zones where residents are unable to access a rail station, based on a walk time of up to 30 minutes. This includes people residing in Drongan, Cumnock, Mauchline, Newmilns, Galston and southern parts of Kilmarnock. It is also to be noted that in parts of the region where people can access rail stations within a 30

minute walk, frequency of services are often low, including on routes south of Girvan and south of Kilmarnock. For example, there are around 11 services between Kilmarnock and Dumfries throughout the day, but there can be gaps of up to two hours between services while there are around eight services per day between Ayr and Stranraer approximately every two hours (though services are more frequent between Ayr and



Girvan).

Figure 22: TRACC Walk Access to Rail Stations and 20% most deprived SIMD data zones
(Click image to enlarge figure)

In addition, a reduction in the number of bus services exacerbates poor accessibility to employment sites and key services, as well as increasing social exclusion. For example, the X76 used to run directly between Cumnock and Glasgow; this service now runs between Kilmarnock and Glasgow only, with interchange via two services required for travel between Cumnock and Glasgow.

Evidence from structured interviews also highlighted the wider implications of reduced accessibility. It was reported, for instance, that people are less likely to rent homes from the Council in rural parts of East Ayrshire due to a lack of public transport; and where it

⁴⁷ TRACC - multimodal accessibility and journey time analysis tool.

⁴⁸ Hospitals included in the analysis were sites that were classified as either: 1) Emergency Departments (larger A&E services that typically provide a 24-hour Emergency Medicine consultant led service); 2) Multiple Injury Units; or 3) small hospitals and health centres in rural areas that carry out Emergency Department related activity and are GP or nurse led. They may or may not be open 24 hours.



is available, fares are considered high. For example, East Ayrshire Council’s website highlighted that in January 2020 there were 33 homes for rent in the local authority; all of which are located out with Kilmarnock (which is considered to be well connected) in places such as Catrine, Dalmellington, Galston, New Cumnock, Newmilns and Rankinston. Consultation suggested that poor public transport connectivity is a primary reason for people choosing not to rent in these areas.

Feedback from stakeholders has also noted that some rail stations do not have step free access, which limits access for specific users including wheelchair users. At Girvan, for example, level access is only provided to Platform 1 with a connecting subway and stairs providing access to Platform 2; this limits accessibility for those with impairments, including the elderly or those with young children; the nearest accessible station is approximately 16km away at Maybole. There are also accessibility issues at other stations in the region, including at Barrhill, Auchinleck, and Newton-on-Ayr stations. Feedback has also been received that the number of pram and wheelchair spaces are frequently limited on many bus services.

CONNECTIVITY AND JOURNEY TIMES

Journey time from A77/70 junction (Ayr) to M74 Junction 12 via A77/M77, A71 and A70

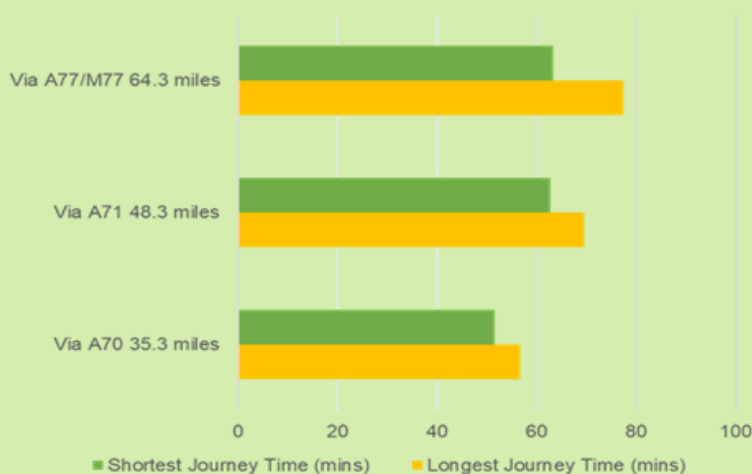


Figure 23: Ayr to M74 Journey Times (INRIX)

The issue of poor east-west connectivity within Ayrshire, with the A70 and A71 (and A76) offering sub-optimal and unreliable journey times – and the subsequent impact of this in discouraging businesses to locate in the region – has been frequently raised throughout this study. A comparison of journey times between Ayr and the M74 via A77/M77, A70 and A71 is shown in Figure 23, indicating that the shortest average journey times recorded are relatively similar, despite the route via the A77/M77 being considerably longer. A review of journey

times per minute shows that journey times via the A70 and A71 (1 minute 28 seconds and 1 minute 18 seconds respectively) are disproportionately longer than the A77/M77 (59 seconds). This is associated with the single carriageway nature of the A70 and A71.

There are also long journey times on the A77 associated with travel through seven speed limited settlements (following completion of the Maybole bypass), as well as the presence of long platoons, often led by HGVs travelling to and from the ports at Cairnryan. Concerns have been raised by stakeholders about the competitiveness of the ports at Cairnryan due to long journey times on the A77, particularly in comparison to the average speeds on road networks to other UK Irish Sea ports, as shown below⁴⁹.

⁴⁹ Here Journey Time reported in the Transport Scotland, South West Scotland: Initial Appraisal Case for Change Study, January 2020, pg. 21:



- A77 between Ayr and Cairnryan: 38 mph
- A75 between Gretna and Cairnryan: 45 mph
- Heysham, from M6 north: 55 mph
- Liverpool, from M6 north: 51 mph
- Holyhead, from M56/M6: 58 mph

Further to this, data suggests that in the year to date April 2018, South West Scotland ferry routes (at Cairnryan) had declined by 1.4%, whilst Heysham routes had increased by 1.4%. It is not possible to state the extent to which this has been influenced by perceptions of poor connectivity to the port, but stakeholders highlighted slow journey times as a potential barrier to future economic and tourism development in the region.

There are perceived long journey times by bus to Glasgow compared to car or rail. For example, journey time between Troon and Glasgow by car is approximately 50 minutes compared to 1 hour 10 minutes by bus, while travel between Cumnock and Glasgow is typically between 1 hr 20 mins and 1 hr 30 mins by bus, compared to around 55 minutes by car. The need for interchange if travelling by rail between Kilmarnock and Ardrossan or Ayr and Largs due to a lack of direct trains was also noted.

Ferry connectivity has also been highlighted as an issue, particularly with regards to the Ardrossan – Campbeltown ferry, which only operates during the summer season three days per week; and only operates via Brodick once per week.

RESILIENCE

Resilience of the A77 and A78 have both been identified as a problem. In the event of an incident on the network leading to a road closure, the diversionary route on the A77 is long and sub-standard for the volume/type of vehicles (including HGVs) travelling on roads such as the A714; as discussed in the previous section, this impacts access to the ports at Cairnryan, as well as local areas. Resilience of the A78, which was noted to be prone to flooding, was also highlighted due to resilience issues; around 7% of incidents recorded on the route between 2015 – 2018 were associated with flooding⁵⁰. The number of incidents recorded on the A78 totalled 788 between 2015 – 2018, equating to almost 30% of incidents recorded on Ayrshire & Arran's trunk road network; this compares to 51% occurring on the A77⁵¹. Closure of the A78 has an adverse impact on local residents given it is the only direct coastal route connecting settlements such as Largs and Skelmorlie. The diversionary routes for the A77 and A78 are mapped below.

<https://www.transport.gov.scot/media/47032/swsts-initial-appraisal-case-for-change-including-appendices.pdf>

⁵⁰ IRIS (Integrated Roads Information System) data.

⁵¹ IRIS (Integrated Roads Information System) data.

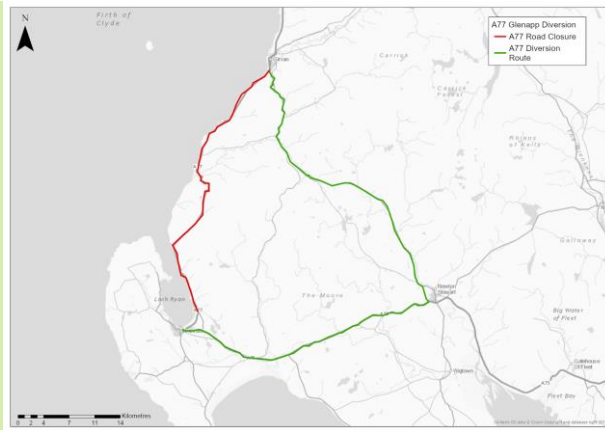


Figure 24: A77 Diversionary Route (Click image to enlarge figure)

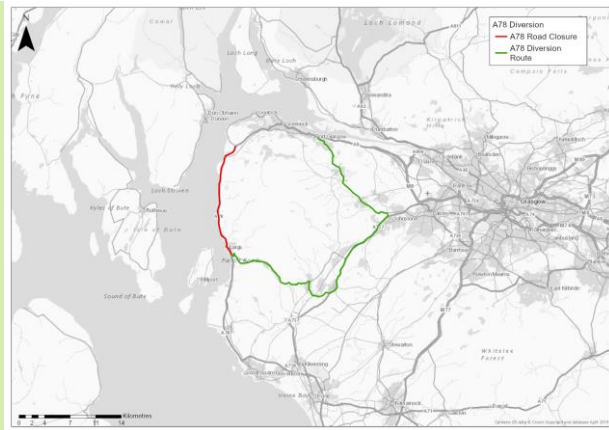


Figure 25: A78 Diversionary Route (Click image to enlarge figure)

Diversionary route information shows that journey times increase by around 40 minutes to 1 hour 20 minutes in the event of the A77 south of Girvan being closed and by around 55 minutes to 1 hour 15 minutes in the event of A78 north of Largs being closed.

Table 1: Diversionary Route Information for A77 and A78⁵²

START POINT	END POINT	IMPACT	EXISTING ROUTE	DIVERSION ROUTE	DIFFERENCE
A77 Girvan	A77 Innermessan	Journey Distance (miles)	26.4	51.8	25.4
		Journey Time (mins)	40 mins	1 hr 20 mins	40 mins
A770 Bankfoot R'b (Inverkip)	A760 / A78 (Largs)	Journey Distance (miles)	10.3	38.8	28.5
		Journey Time (mins)	20 mins	1 hr 15 mins	55 mins

Flooding and inadequate sea defences were also noted as impacting network resilience, particularly on the railway between Saltcoats and Stevenston. The recent closure of Ayr Station, which resulted in all services south to Stranraer being suspended between end of August and early November 2018, is a further example of a lack of resilience on the rail network.

With regards to ferry network resilience, cancellation data from Calmac⁵³ demonstrates:

⁵² Diversionary routes provided by Scotland Transerv. Journey times based on travel on a weekday at 1pm. Source: Scotland Transerv and Google Maps. A77 diversion route distance based on the length of diversion shown in Figure 24 plus the distance between the A75 / A751 junction and A77 / A751 junction (to Innermessan). A78 diversion route distance based on the length of diversion shown in Figure 25 plus the distance between A8 / A761 junction and A8 / A770.

⁵³ Calmac Performance Figures



- During the period November 2018 to October 2019, 6.7% of scheduled sailings were cancelled across the year between Ardrossan – Brodick; with the highest percentage (13.6%) recorded in March 2019.
- The percentage of scheduled sailings cancelled between Largs – Cumbrae was lower at 2.3% across the year, although this may be indicative of the shorter crossing time, making it less susceptible to cancellation.

Ferry cancellations were noted by stakeholders to have adverse impacts on the local economy and on island residents accessing key services such as health appointments and education facilities on the mainland. The importance of the A841 in terms of providing a route to Lochranza for onward ferry travel to the mainland in the event of the Ardrossan-Brodick route being cancelled was also noted by stakeholders.

CAPACITY CONSTRAINTS AND CONGESTION

Capacity constraints on the strategic road network, leading to congestion, has been highlighted as an issue. A recent study at Bellfield Interchange⁵⁴ identified queue lengths of more than 200m on the A77 (North), the A71 (East) and the A76 approach arms in the morning peak, and more than 200m in the evening peak on the A77 (North), the A71 (East), the A71 (West) and the A735 (Queens Drive). Queues on the A77 (North) arm are particularly long (greater than 500m) and often extend back beyond extents of the A77 Off Slip onto the main carriageway itself, leading to safety concerns. Bellfield Interchange, alongside Monkton, Dutch House and Whitletts Roundabouts on the A77/A78 at Ayr and A737 at Kilwinning were all identified by stakeholders as pinch points on the road network.

With regards to the A737, congestion and delay was identified at two key locations in a 2016 study⁵⁵; in Kilwinning at the junction of the A737/A738 and on the A738 approach to the A78 Pennyburn Roundabout. For example, queues of over 200m were recorded in the morning period and queues of over 600m were recorded in the evening period on the A738 southbound approach to Pennyburn Roundabout. Stakeholders also noted that the A737/B714 is a key link between North Ayrshire and Glasgow, but these are single carriageway roads; thus making the A71/A77/M77 route more attractive.

Traffic data⁵⁶ has been reviewed to understand differences in average journey times across the day on key routes throughout the region. Figure 26 shows average southbound journey times between Monkton Roundabout and Bankfield Roundabout (A77 Ayr Bypass); this part of the network includes major pinch points identified by stakeholders. The shortest average journey time was between 22:00-23:00 (8 mins 56 secs) and the longest journey time was between 08:00-09:00 (14 mins 41 secs), equating to a difference of almost six minutes depending on the time of travel.

⁵⁴ Option Appraisal Bellfield Interchange Stage 1 (2018).

⁵⁵ North Ayrshire Strategic Routing Study (2016).

⁵⁶ INRIX Journey Time analysis.

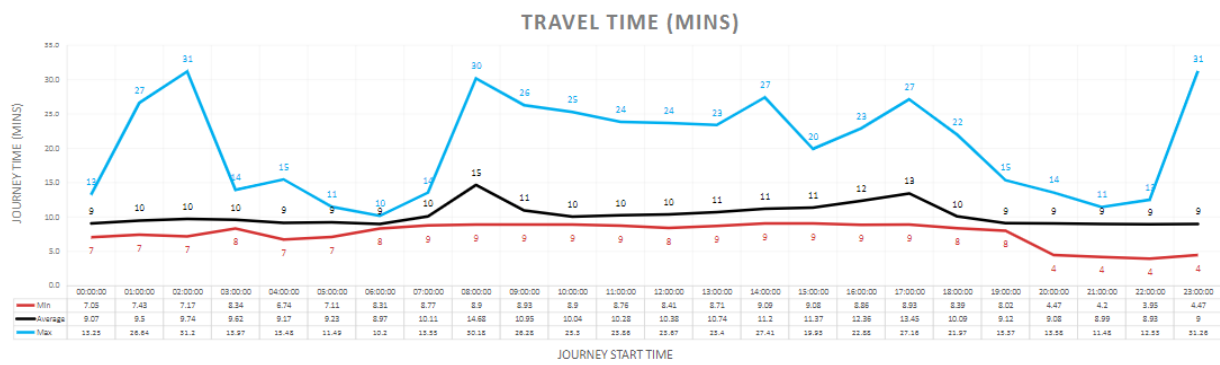


Figure 26: Monkton Roundabout to Bankfield Roundabout (A77) INRIX⁵⁷ Journey Times (Click image to enlarge figure)

Data from the Transport Model for Scotland (TMfS14) further shows road network constraints and potential areas of congestion based on the volume of traffic and road capacity. Locations with the highest volume capacity ratios were generally recorded in urban areas such as Ardrossan, Saltcoats, Stevenston, Kilwinning, Ayr, Irvine, Kilmarnock and Prestwick, as well as on the A71 Galston Road between Galston and Newmilns. Data also shows that traffic levels are forecast to increase in the future (expanded upon in Section 3.2.5); should these increases become reality then capacity constraints and congestion identified by stakeholders are likely to be exacerbated.

Capacity issues on the Arran ferry were also raised, given the increased car traffic experienced on the route since the introduction of the RET which has reduced deck capacity for other users including residents, making it more difficult to access the island particularly during peak periods. An evaluation on the impact of RET on Arran⁵⁸ highlighted that the Ardrossan – Brodick route was beginning to experience vehicle deck capacity issues on peak sailings, with 26% of all sailings in 2015/16 having a car deck utilisation of greater than 80%. In addition, the number of cars carried on the Ardrossan – Brodick route increased by 34% between 2008-2018 and by 18% on the Largs – Cumbrae route over the same time period. This is presented in Figure 27 alongside the change in the number of Passengers, Coaches and Commercial Vehicles carried.

⁵⁷ INRIX is a private sector organisation whose data services consist of roadway analytics (including journey time metrics).

⁵⁸ Transport Scotland, Evaluation of the Impact of Road Equivalent Tariff on Arran Final Report: <https://www.transport.gov.scot/media/33631/ts-amfc-ret-arran-final-report.pdf>

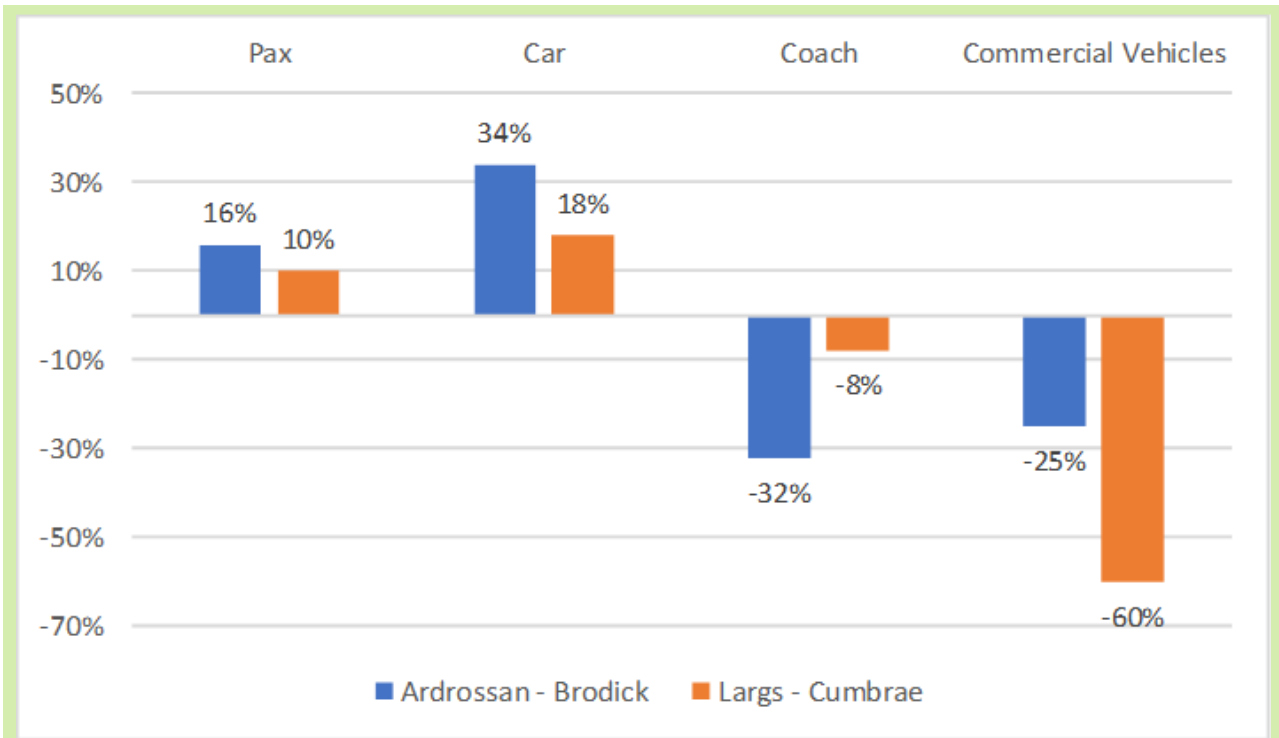


Figure 27: Change in Volumes on Main Arran and Cumbrae Ferry Routes⁵⁹

With regards to rail, stakeholders raised concerns that a lack of platform capacity at Glasgow Central limits the opportunity to operate additional services to/from the Ayrshire region in the future.

FREQUENCY AND FRAGILITY OF PUBLIC TRANSPORT

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 interconnectivity between bus, rail and ferries with low frequency and limited operating hours.

⁵⁹ Calmac

The frequency and fragility of public transport, particularly the bus network, is closely linked to patronage and how well used services are in the Ayrshire & Arran region.

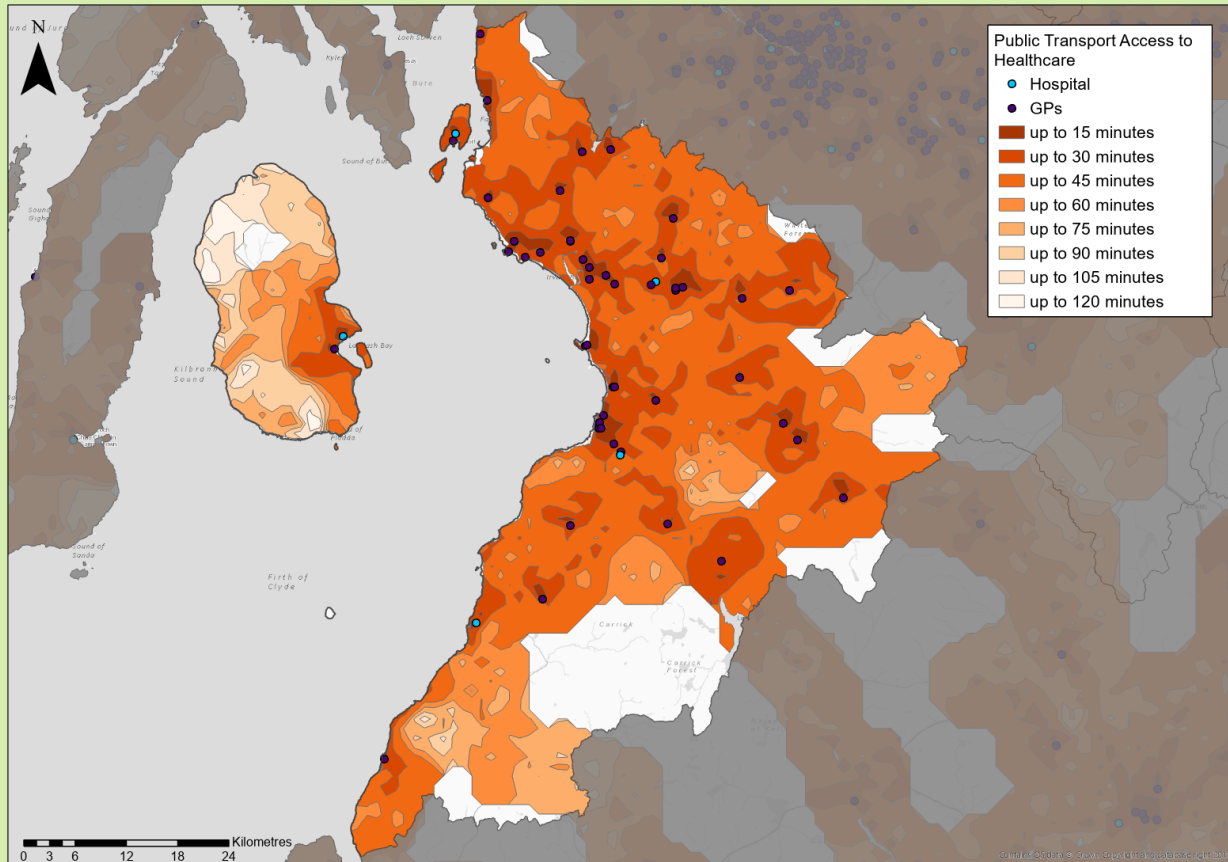


Figure 28: TRACC Access to Healthcare (Click image to enlarge figure)

Although the share of the population using a bus four or more days per week in South Ayrshire increased by 1.4% between 2003/04 and 2017, the equivalent figure decreased in East Ayrshire by 0.4% and by 2.1% in North Ayrshire. Based on its ranked change in share of the population using the bus four or more days a week, the Ayrshire & Arran region saw an absolute decline in bus patronage between 2003/04 and 2017⁶⁰. Based on research into the causes of bus patronage decline, the worst performing factors that have contributed to patronage decline in the Ayrshire & Arran region have been identified as bus mileage, bus connectivity⁶¹ and bus quality.

A lack of public transport prevents access to services and can lead to forced car ownership; as reported earlier, the proportion of households with access to a car is higher in the region compared to Scotland averages (71% compared to 69%). Issues related to forced car ownership were strongly noted by stakeholders and can exacerbate transport poverty, as discussed later in this Section.

⁶⁰ Transport and Travel in Scotland, 2017.

⁶¹ The bus mileage score is based on data for the South West & Strathclyde, including Glasgow City Region, while the region’s bus quality score is based on satisfaction figures for Strathclyde that omit Arran and combine Ayrshire, Argyll & Bute and Glasgow City Region; accordingly some care should be taken in analysis of these figures.

Accessibility analysis using TRACC has been undertaken to understand public transport access to key services, with Figure 28 showing access to Healthcare (GP and Hospital). Results show that vast majority of Ayrshire & Arran residents can access healthcare within 120 minutes by public transport, but there are areas, particularly on the extremities in South and East Ayrshire that are unable to access these services. Other outputs show similar patterns; for example access to Education (school) by public transport up to 60 minutes and access to Employment Centres by public transport (up to 120 minutes). Further details are provided in the earlier Accessibility section.

A number of stakeholders highlighted problems of limited integration between public transport, particularly in rural areas, including between bus, rail and ferries, with low frequency and limited operating hours. For example, as of October 2019, of the ten ferry services operating between Ardrossan and Brodick each day, analysis showed that there is a wait time greater than 20 minutes⁶² between train arrival and ferry departure for eight out of ten services. Similarly, eight out of ten services involve a wait time of greater than 20 minutes when departing via train from Ardrossan Harbour.

TRANSPORT POVERTY AND AFFORDABILITY

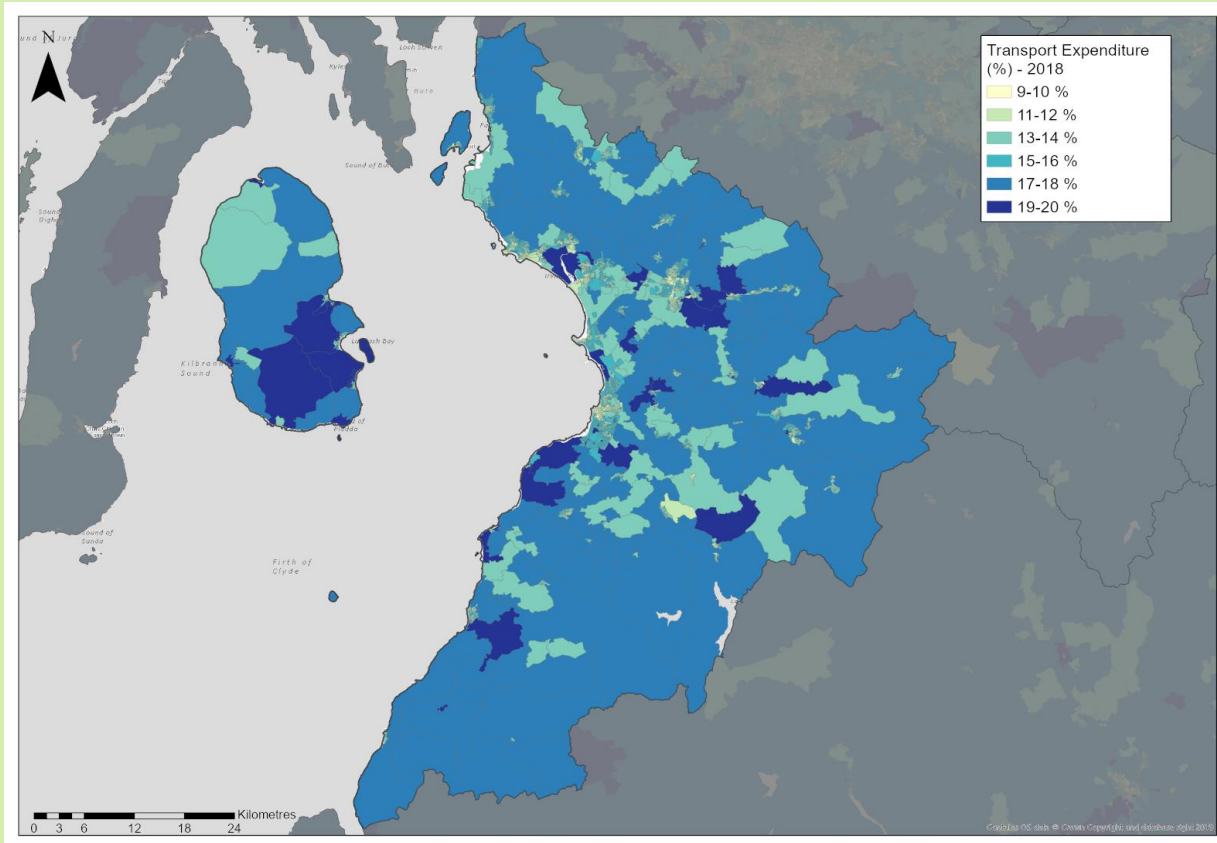


Figure 29: Transport Expenditure in Ayrshire & Arran (Click image to enlarge figure)

There are many areas, primarily in the most rural parts of the region, that spend more than the Scottish average on transport expenditure (up to 20%, compared to the

⁶² A 20-minute wait was selected as foot passengers are required to check in at least ten minutes before departure. The 20 minute wait also takes into account the short walk between the station and ferry terminal.

Scotland average of 14%)⁶³. This includes rural areas close to Galston, south of Ayr, south of Girvan and parts of southern Arran.

Similarly, the Transport Poverty map⁶⁴ shown in Figure 30 demonstrates that 58% of data zones in the region were classified as high risk for transport poverty compared to 38% in Scotland; 36% as medium risk compared to 41% in Scotland; and 6% as low risk, compared to 21% in Scotland.

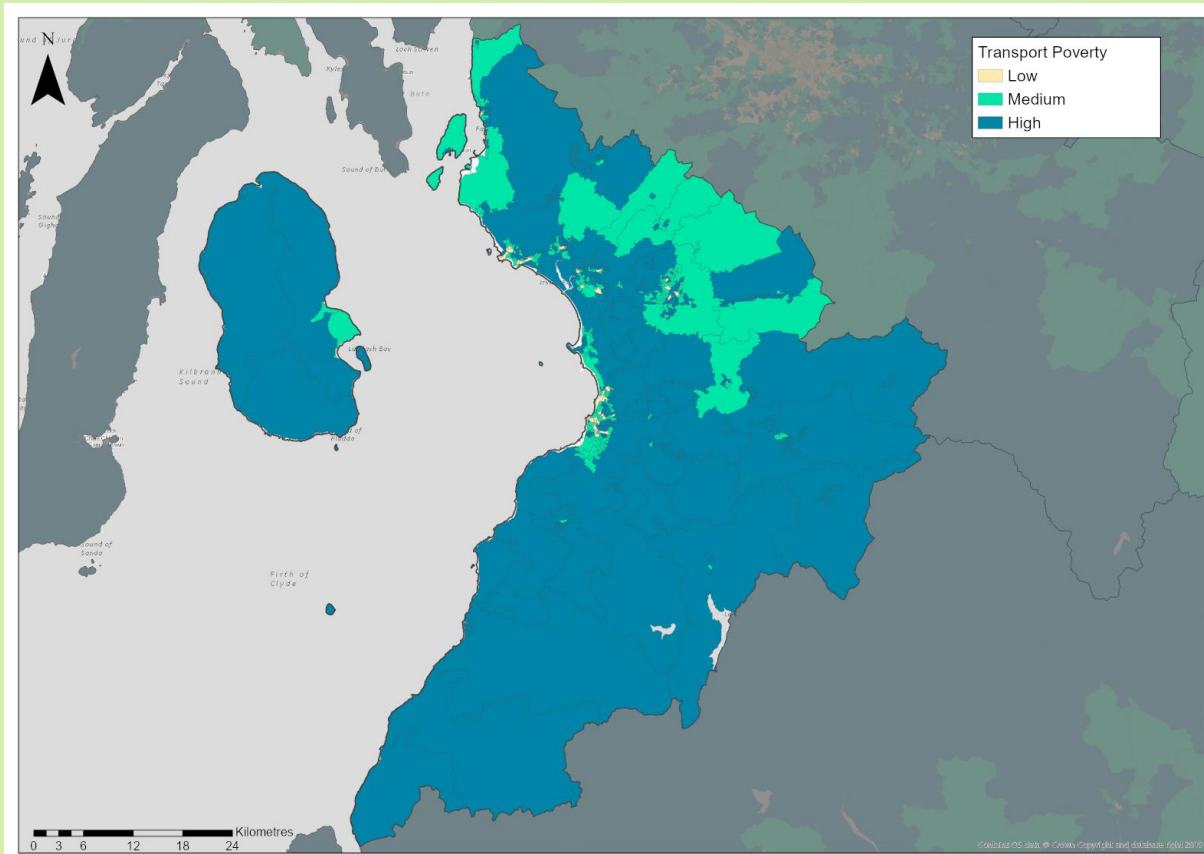


Figure 30: Transport Poverty in Ayrshire & Arran (Click image to enlarge figure)

Similar to areas with a higher than average expenditure of transport, data zones at high risk of transport poverty are typically located in rural parts of the region and data zones at low risk of transport poverty are typically located in urban areas. This may be indicative of wider accessibility problems experienced in rural parts of the transport network.

Further to this, stakeholders commented that the cost of bus travel in the region is high compared to car (and taxi) and there is a perceived lack of funding to encourage modal shift, including the retention of bus services withdrawn by private bus operators. Funding for active travel infrastructure was also noted as an issue; while funding sources are

⁶³ 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; UK financial year 2018), ONS.

⁶⁴ Transport Poverty is based on research which uses data household income, car availability and access to the public transport network data. Based on Transport Poverty in Scotland, Sustrans 2016. Available at:

https://www.sustrans.org.uk/media/2880/transport_poverty_in_scotland_2016.pdf



available for new infrastructure such as new active travel schemes, the resulting maintenance burden can discourage authorities from applying for such funds. Funding for the maintenance of the local road network was also raised as an issue.

Views from young people⁶⁵ show many depend on public transport to access work and education but affordability of bus and train fares is an issue. For example, 55% of respondents in the Strathclyde region noted to be spending more than £9 per week on travel to their place of education (compared to 44% nationally) whilst 49% were spending over £12 commuting to work/apprenticeships (compared to 32% nationally).

3.2.2. Online Survey: Reported Problems in the Ayrshire & Arran Region

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

Top ranking problems for the Ayrshire & Arran region included:

- **Roads** - Quality of roads infrastructure, which 50 respondents ranked as their top priority and 72 ranked within their top three;
- **Bus** - Frequency and reliability of bus services, which 16 respondents ranked as their top priority and 22 ranked within their top three;
- **Cycling** - Availability of safe cycling infrastructure, which 7 respondents ranked as their top priority and 19 ranked within their top three.

Other commonly raised areas of concern related to reliability of ferry services, the cost of rail travel, the availability of safe walking/wheeling infrastructure, levels of road traffic congestion, safe overtaking opportunities and the 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.

⁶⁵ As part of an event held at the end of 2018 that Scottish Youth Parliament met with over 1,300 young people, including 240 from the SPT area, to hear their views on public transport in Scotland.

3.2.3. Opportunities

This section provides a summary of key opportunity themes identified for the Ayrshire & Arran region.

ECONOMIC DEVELOPMENT

Of the 502 data zones in Ayrshire and Arran, 30% of these are within the lowest 20% for employment ranking across all data zones in Scotland⁶⁶. This is supported by data from Scotland's Centre for Regional Inclusive Growth (SCRIG), which shows that unemployment in the region is higher than the Scotland wide average; 2018 Total Unemployment Rate Modelled in North Ayrshire is 5.7%, East Ayrshire 5.8% and South Ayrshire 4.3%. The Scotland average is 4.0%. Similarly, the proportion of employees in Ayrshire living below the minimum wage is higher than the Scotland average; North Ayrshire 24.3%, East Ayrshire 26.2% and South Ayrshire 22.6%. The Scotland average is 19.4%. Each of these data sets are indicative of the economic challenges experienced in the region and represent opportunities to improve the economy.

There are many economic development opportunities in the region, including the Ayrshire Growth Deal. The Heads of Terms Agreement⁶⁷ outlines the different areas and projects which are to be taken forward as part of the £250 million Deal. The Economic Infrastructure Programme includes the following projects: HALO Kilmarnock, Ayrshire Engineering Park, Ayrshire Manufacturing Investment Corridor (AMIC) and the i3 Irvine Enterprise Area, though the document also outlines other allocation areas, such as for an Energy, Circular Economy and Environment Programme, Digital and Skills and Inclusion.

The importance of the Manufacturing sector in the region is also underlined by data which shows the sector was the fastest growing in the region by GVA share in 2018 (over 8%). Further economic development opportunities highlighted by stakeholders include the use of Hunterston Port and the surrounding rail network for transport of freight and passengers and growth at Prestwick Airport (particularly for the transport of freight).

It was also frequently stated by stakeholders that a reduction in journey times and improved connectivity would make the region more attractive to inward investment, including from, though not limited to, northern England via the M74 corridor. In the case of the ports at Cairnryan, improved journey times on the strategic road network were seen as key to maintaining/enhancing the ports competitive economic advantage to other UK Irish Sea Ports (Heysham, Liverpool and Holyhead) which are connected to the wider road network by dual carriageway. Stakeholders also highlighted that improvements to the A737 could have economic benefits for the region.



⁶⁶ Scottish Index of Multiple Deprivation (SIMD 2016)
<https://simd.scot/#/simd2016/BTTTTFTT/9/-4.0000/55.9000/>

⁶⁷ Ayrshire Growth Deal Heads of Terms Agreement:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784363/AGD - Heads of Terms - February 2019 - Agreed Final.pdf



TOURISM

Supporting tourism includes support of The Coig, which forms tourist trails across Ayrshire, Arran, Argyll & Bute and Inverclyde in seeking to emulate the success of the North Coast 500, and has been supported in the Scottish Government’s PfG 2019/20⁶⁸. Stakeholders noted that routes such as the A760 could have the potential to improve tourism access to the north coast. Growing the active travel tourism market through the development and promotion of NCN type infrastructure across the region was raised as a major opportunity by stakeholders, with areas such as Galloway Forest commonly referred to as an ‘untapped resource’. Visit Scotland data shows the number of domestic visitors to the region has fluctuated in recent years, but overall there has been a slight decrease between 2011 and 2017 from 688,000 to 676,000. This is shown in Figure 31 below, alongside total spend for domestic visitors, which has also decreased slightly between 2011 and 2017; from a high of £175m in 2011 to £144m in 2017. Similarly, international visits have decreased over the same time period, though spend has increased.

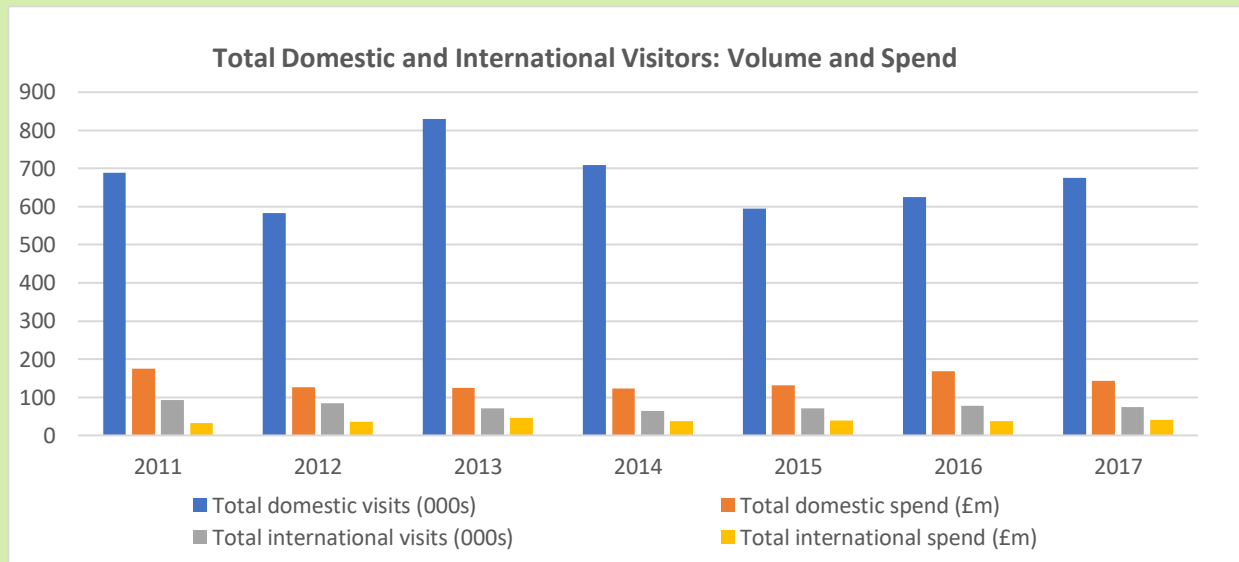


Figure 31: Total Domestic and International Visitors Ayrshire & Arran, 2011 – 2017: Volume and Spend⁶⁹

Reflective of the aspirations to grow the number of visitors to the region, the Ayrshire Growth Deal also includes reference to a Tourism Programme, which includes funding for the Development and Regeneration of The Great Harbour up to £13 million and Investment in Marine Tourism of up to £9.5 million.

⁶⁸ The Scottish Government, Protecting Scotland’s Future: The Government’s Programme for Scotland 2019/20:

<https://www.gov.scot/binaries/content/documents/govscot/publications/publication/2019/09/protecting-scotlands-future-governments-programme-scotland-2019-20/documents/governments-programme-scotland-2019-20/governments-programme-scotland-2019-20/govscot%3Adocument/governments-programme-scotland-2019-20.pdf>

⁶⁹ Visit Scotland, Insight Department: Visitors to Ayrshire & Arran, Trend Information, November 2018: <https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers-2/regional-factsheets/ayrshire-and-arran-.pdf>



JOURNEY TIME REDUCTION, JOURNEY QUALITY AND IMPROVED CONNECTIVITY

Much of the region's road network, including trunk road network, is single carriageway, making it more difficult for motorists to overtake, which has been linked to adversely impacting journey times and journey quality as well as safety concerns associated with driver frustration. A limited number of routes, including the A77/M77 north of Ayr, A71 between Kilmarnock and Irvine and A78 south of Chapel Hill Roundabout, are dual carriageway. There are overtaking lanes on the A77 south of Ayr and on some sections of the A78. Stakeholders noted that improvements in journey time, journey quality and improved connectivity would make the region more attractive to investors. Stakeholders also suggested that connectivity to other parts of Ayrshire could be strengthened should improvements be made to the A737 and B714.

There are also opportunities to improve ferry connectivity; improvements to ferry connections has the potential strengthen the economy, including active travel tourism.

TRAVEL PLANNING, BEHAVIOUR CHANGE AND LOW CARBON

There are opportunities to promote improved travel planning, behaviour change and a shift towards to the use of low carbon technologies in the region. With regards to low carbon, within the region, the percentage of total emissions from transport is 53% in East Ayrshire, 52% in South Ayrshire and 22% in North Ayrshire; the Scotland average is 39%⁷⁰. There are also a low number of Ultra Low Emission Vehicles (ULEVs) in the region; at 1.44 per 1,000 people⁷¹, this is the lowest of any region in Scotland. The Scotland average is 2.72 ULEVs per 1,000 people. Values for all regions are shown in Figure 32. The opportunity to encourage greater uptake of e-bikes was also frequently raised during consultation.

⁷⁰ UK Local Authority and Regional Carbon Dioxide Emissions National Statistics 2005 to 2017 (Department for Business, Energy and Industrial Strategy, 2019) www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017

⁷¹ VEH0132, Licensed ultra low emission vehicles by local authority: United Kingdom. Available at : <https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01>

Ultra low emission vehicles (ULEVs) are vehicles that emit less than 75g of carbon dioxide (CO₂) from the tailpipe for every kilometre travelled. In practice, the term typically refers to battery electric, plug-in hybrid electric and fuel cell electric vehicles.

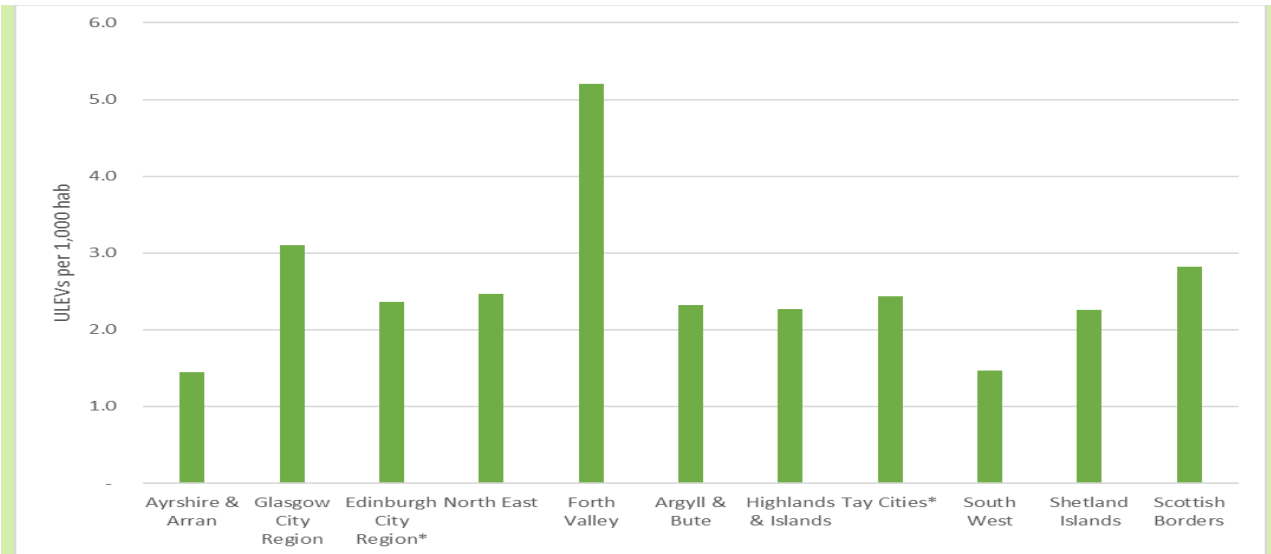


Figure 32: Ultra Low Emission Vehicles per 1,000 people by STPR2 Region

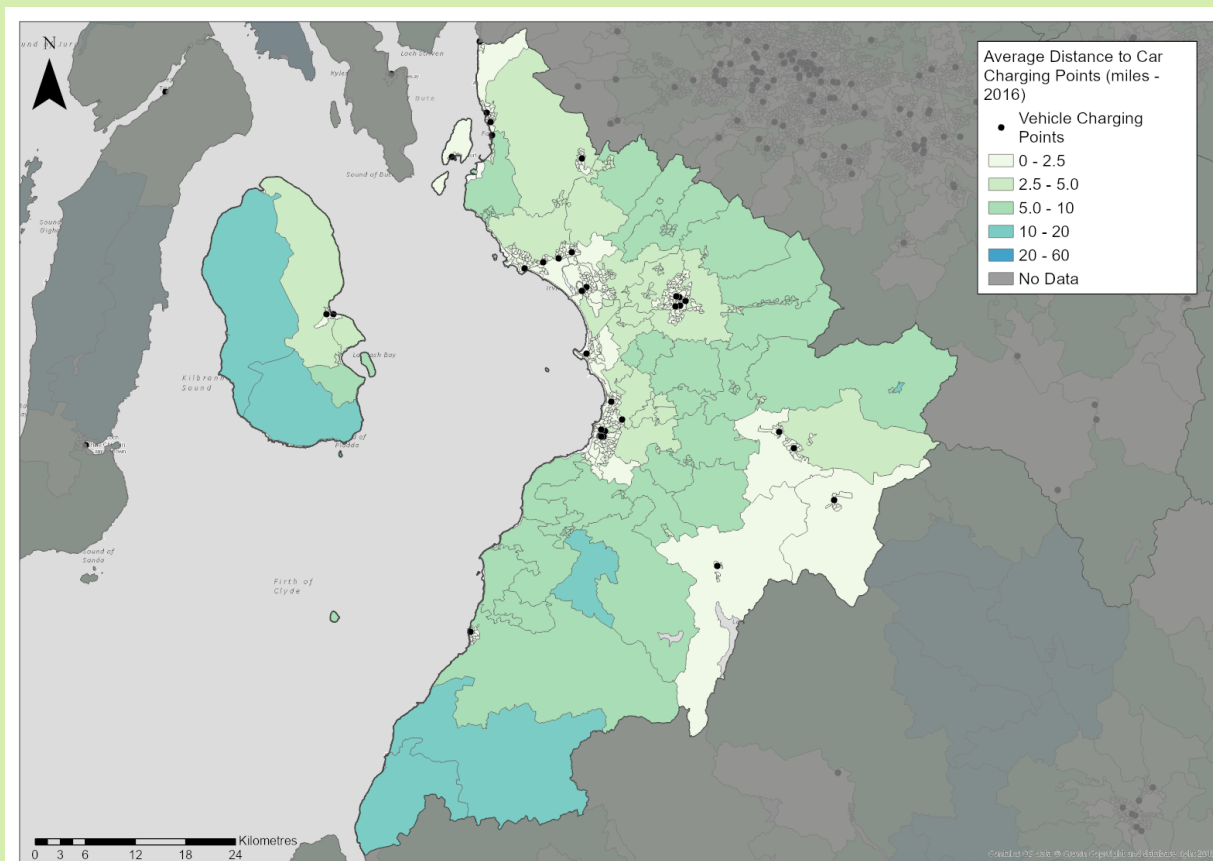


Figure 33: Proximity to nearest EV Charge Point, Ayrshire & Arran (Click image to enlarge figure)

Figure 33⁷³ shows the average distance to car charging points by data zone across the region. There are 44 charging points in the region, but there are a number of areas in south South Ayrshire and western parts of Arran which are between 10 and 20 miles from a charging point. Most points are located in Kilmarnock, Ayr, Irvine, the Three Towns and Largs, but there are also points located in Cumnock, Dalmellington, New

Cumnock, Auchinleck, Brodick and Millport. As a result, data zones in these areas are within 2.5 miles of a charging point.

Opportunities also exist to promote digital connectivity and there is the potential for more people to work from home. Access to Super-Fast Broadband ranges between 87% to 91% in the region, with East Ayrshire experiencing the highest levels in the region with 91% of resident having access⁷⁴. East Ayrshire has the 12th highest percentage of all local authorities in Scotland, with North Ayrshire and South Ayrshire 17th and 18th respectively. Super-Fast Broadband can be linked to increased productivity, particularly if working from home.

There are missing links in the NCN and Scottish Government Cycle route networks in the region, including Kilmarnock to Ayr, Mauchline to Ayr, Cumnock to Kilmarnock and north of Ardrossan to Skelmorlie and Inverkip, and so there are opportunities to promote modal shift should the network be improved. This could also increase the attractiveness of the region as a destination for cycle tourism. The existing active travel network is shown in Figure 34.

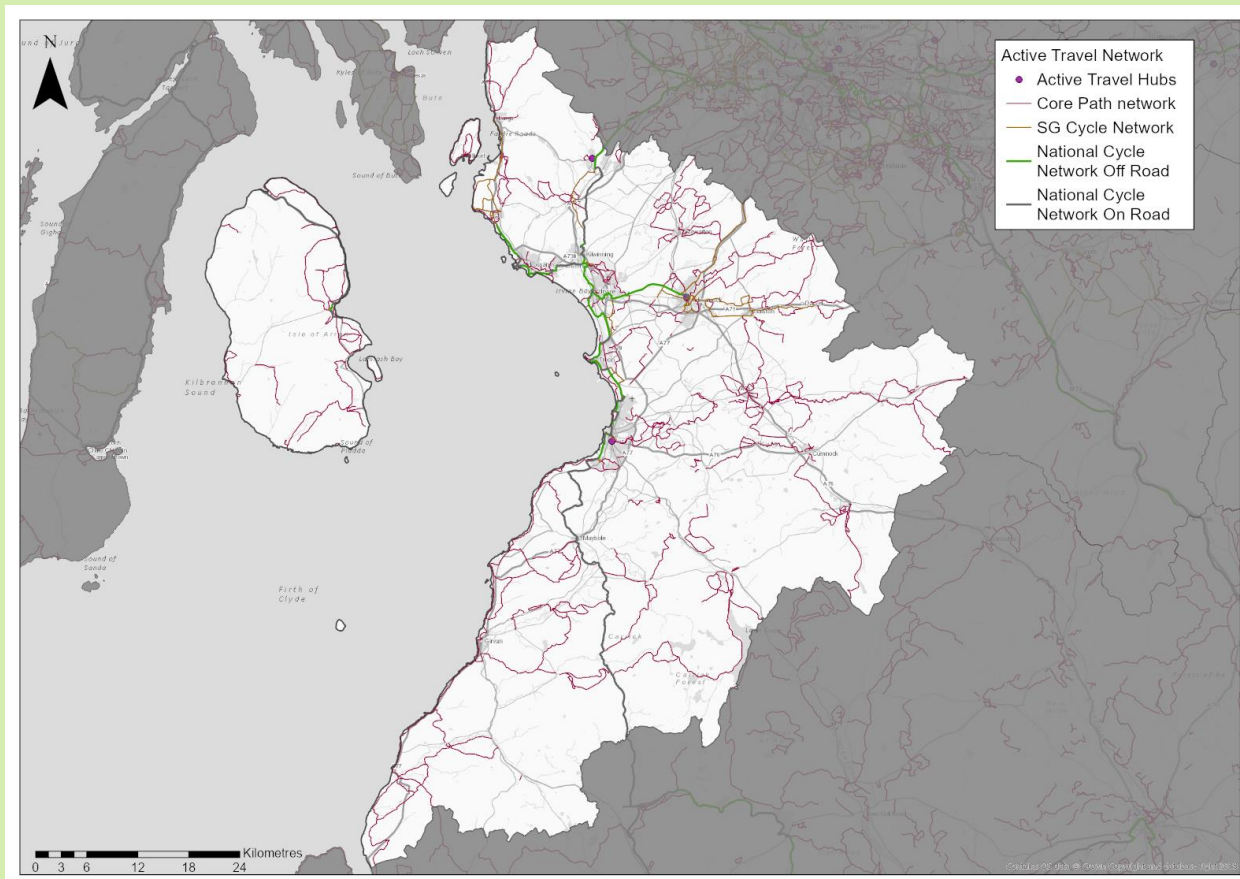


Figure 34: Ayrshire & Arran Active Travel Network (Click image to enlarge figure)

IMPROVED ROUTE RESILIENCE

Opportunities in relation to improving route resilience are primarily related to the economy and how frequent route closures, arising from planned and unplanned

⁷³ Department for Transport Table JTS1010.

⁷⁴ OFCOM Connected Nations.



closures, are often exacerbated by a lack of high quality diversionary routes. This can have an adverse impact on the local economy and depending on the route effected, on the regional and national economy. Should route resilience be improved on routes such as the Kilmarnock – Cumnock – Dumfries railway as an alternative in the event of West Coast Mainline closure, improved diversionary routes on the road network such as the A77 and A78 and more resilient ferries on crossings to Cumbrae and Arran, this has the potential to promote economic growth and attract investment. Evidence related to improving route resilience is noted under the 'Resilience' problem section.

3.2.4. Problems & Opportunities Summary

- **Active Travel Facilities and Safety:** Mode of travel to work by bicycle and foot is lower in the region compared to the Scottish average. This may in part be due to a lack of active travel facilities, including segregated cycle infrastructure for commuting purposes and on-board bike carrying facilities on trains and buses. Safety was also highlighted as a concern.
- **Accessibility:** There are large areas of the region where there is limited access to public transport, particularly in rural areas. TRACC data further demonstrates the problem; poor accessibility restricts peoples access to key services, including employment, education and healthcare.
- **Connectivity and Journey Times:** This has primarily been highlighted as a problem in two areas; between Ayrshire and the M74 (via A70 and A71) and south of Ayr to access the ports at Cairnryan via the A77. Long journey times was noted to impact the economic competitiveness of the region.
- **Resilience:** In the event of A77 route closure the diversionary route has been noted to be long and sub-standard for the volume and type of vehicles using it (e.g. HGVs). The A78 is also prone to flooding which leads to closure. Some 81% of all incidents recorded on the regions trunk roads between 2015-18 were on the A77 or A78. Similarly, ferry cancellations can have an adverse impact on residents accessing key services and, more widely, on the economy.
- **Capacity Constraints and Congestion:** At Bellfield Interchange, which has recorded long queue lengths, the A77/A78 at Ayr at Monkton, Dutch House and Whitletts Roundabouts and the A737/A738 at Kilwinning. Capacity issues, linked to the introduction of RET, have also been recorded on the Ardrossan – Brodick ferry route.
- **Frequency and Fragility of Public Transport:** Limited public transport coverage prevents access to services and can lead to forced car ownership. There is limited integration between public transport, particularly in rural areas, and limited interconnectivity 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 as contributory factors to this decline.
- **Transport Poverty and Affordability:** Transport expenditure and poverty is generally higher in rural parts of the region. The cost of bus travel in the region was noted to be high compared to car (and taxi) and there is a perceived lack of funding to encourage modal shift.
- There are opportunities in the region associated with: Economic Development, particularly in relation to the Ayrshire Growth Deal; Tourism, including, though not



limited to, active travel tourism; Journey Time Reduction, Journey Quality and Improved Connectivity; Travel Planning, Behaviour Change and Low Carbon, such as improving digital connectivity and electric vehicle infrastructure; and Improving Route Resilience.

3.2.5. Future Conditions

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

For Ayrshire & Arran, a review of the national transport model, the Transport Model for Scotland (TMfS), has suggested that between 2014 and 2037, the following trends have been projected⁷⁵; this assumes that current policies remain in place and no interventions beyond those already committed will be undertaken.

- Road Traffic (billion vehicle miles p.a.): a 25% increase in the region, lower than the national growth of 37%.
- Road Congestion (PM Peak Delay seconds/mile): 25% increase in the region, lower than 37% rise across Scotland.
- Bus Passenger mileage forecasts: 16% decrease, higher than the national decline of 5%.
- Rail Passenger mileage forecast 15% increase compared to a 42% rise across Scotland.

Based on these projections, it is clear that there are major challenges ahead which STPR2 must respond to if the transport sector is to play its role in supporting the Scottish Government commitment to meet its net zero emission target.

Other uncertainties in the region concern the future of Prestwick Airport, which is currently under state ownership while work is ongoing to return the airport to the private sector, the future impacts of the RET, and the impacts of the Ayrshire Growth Deal on the transport network in the region. With regards to the Growth Deal, ongoing Regional Transport Working Group engagement will ensure that appropriate consideration is given to growth deal projects alongside other regional developments. This collaborative approach will inform the regional and national appraisal of the strategic transport network being undertaken in STPR2.

⁷⁵ Transport Scotland, Transport Forecasts 2018 Results from Transport Scotland's Land-use and Transport Models: <https://www.transport.gov.scot/media/43316/transport-forecasts-2018.pdf>



4. Transport Planning Objectives

4.1. National and Regional Objectives

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

For STPR2, TPOs have been developed to sit at both the national and regional levels. At a national level, an overarching set of programme level TPOs, supported by national sub-objectives, have been established which are closely aligned with the four priorities, twelve outcomes and 24 policies contained within the National Transport Strategy (NTS2). The national TPOs are presented in Table 2 below.

A series of regional transport planning objectives sit within the overall direction of the national objectives but with a particular focus on the specific evidence based problems and opportunities for Ayrshire & Arran. The draft emerging regional focused sub-objectives are also presented in Table 2 detailed below.

Table 2: STPR2 National Objectives and the Regional Sub-Objectives

NATIONAL OBJECTIVES	AYRSHIRE & ARRAN SUB-OBJECTIVES / OUTCOMES
<p>A sustainable strategic transport system that contributes significantly to the Scottish Government’s net zero emissions target</p>	<ul style="list-style-type: none"> ▪ <i>Reduce the consumption of fossil fuels from the strategic transport system in Ayrshire & Arran and enable a shift to more sustainable modes of transport.</i> ▪ <i>Increase the share of active travel, particularly for shorter, everyday journeys, and for visitors travelling within the Ayrshire & Arran region.</i> ▪ <i>Increase the share of public transport throughout the region by providing viable alternatives to single occupancy private car use.</i> ▪ <i>Reduce emissions generated by the strategic transport system with a focus on the strategic road network, including the most congested interchanges.</i>
<p>An inclusive strategic transport system that improves the affordability and accessibility of public transport</p>	<ul style="list-style-type: none"> ▪ <i>Increase public transport share in the Ayrshire & Arran region by improving integration opportunities for active travel on public transport and at key transport interchanges including ferry terminals.</i> ▪ <i>Improve mobility and inclusion, recognising the needs of remote communities in Ayrshire & Arran and disadvantaged and vulnerable groups.</i> ▪ <i>Reduce transport poverty by increasing travel choice, with a particular focus on communities in Ayrshire & Arran with high</i>



	<p><i>levels of deprivation.</i></p> <ul style="list-style-type: none"> ▪ <i>Reduce the reliance on private car for access to key centres for healthcare, employment and education by improving public transport connectivity in the region.</i>
<p>A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.</p>	<ul style="list-style-type: none"> ▪ <i>Reduce the adverse impacts of the strategic transport system on communities by embedding the place principle in changes to the strategic transport system.</i> ▪ <i>Increase the share of active travel, particularly for shorter, everyday journeys, and for visitors travelling within the Ayrshire & Arran region.</i> ▪ <i>Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of Local Development Plans and the emerging NPF4.</i>
<p>An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.</p>	<ul style="list-style-type: none"> ▪ <i>Increase sustainable access between labour markets and key centres for employment, education and training across the region.</i> ▪ <i>Increase the competitiveness of key domestic and international markets by reducing transport costs and improving journey time reliability for commercial transport routes including links to Glasgow, Glasgow Airport, Prestwick Airport, the M74 corridor and the ports at Cairnryan.</i> ▪ <i>Increase resilience of access to key domestic and international markets to encourage people to live, study, visit and invest in Ayrshire & Arran.</i> ▪ <i>Increase the mode share of freight by sustainable modes in Ayrshire & Arran.</i>
<p>A reliable and resilient strategic transport system that is safe and secure for users.</p>	<ul style="list-style-type: none"> ▪ <i>Improve resilience of the strategic transport system to reduce the impacts of disruption, with a particular focus on the corridors serving Glasgow, the ports at Cairnryan, the Glasgow South Western Line, and lifeline ferry services.</i> ▪ <i>Reduce transport related casualties in line with reduction targets</i> ▪ <i>Improve resilience through climate change adaptation within the management and maintenance of trunk road, rail and ferry infrastructure.</i>

Table 3 demonstrates the alignment of the objectives/outcomes developed for the Ayrshire & Arran region with the identified problems and opportunity themes in the region.



Table 3: Mapping of Problem and Opportunity Themes to Transport Planning Objectives

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme							Opportunity Theme				
		Active Travel Facilities & Safety	Accessibility	Connectivity & Journey Times	Resilience	Capacity Constraints & Congestion	Frequency & Fragility of Public Transport	Transport Poverty & Affordability	Economic Development	Tourism	Journey Time Reduction, Quality & Connectivity	Travel Planning, Behaviour Change & Low Carbon	Improved Route Resilience
A sustainable strategic transport system that contributes significantly to the Scottish Government’s net zero emissions target	Reduce the consumption of fossil fuels from the strategic transport system in Ayrshire & Arran and enable a shift to more sustainable modes of transport.												
	Increase the share of active travel, particularly for shorter, everyday journeys, and for visitors travelling within the Ayrshire & Arran region.												
	Increase the share of public transport throughout the region by providing viable alternatives to single occupancy private car use.												
	Reduce emissions generated by the strategic transport system with a focus on the strategic road network, including the most congested interchanges.												
An inclusive strategic transport system that improves the affordability and accessibility of public transport	Increase public transport share in the Ayrshire & Arran region by improving integration opportunities for active travel on public transport and at key transport interchanges including ferry terminals.												
	Improve mobility and inclusion, recognising the needs of remote communities in Ayrshire & Arran and disadvantaged and vulnerable groups.												
	Reduce transport poverty by increasing travel choice, with a particular focus on communities in Ayrshire & Arran with high levels of deprivation.												
	Reduce the reliance on private car for access to key centres for healthcare, employment and education by improving public transport connectivity in the region.												
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 changes to the strategic transport system.												
	Increase the share of active travel, particularly for shorter, everyday journeys, and for visitors travelling within the Ayrshire & Arran region.												
	Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of Local Development Plans and the emerging NPF4.												
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland	Increase sustainable access between labour markets and key centres for employment, education and training across the region.												
	Increase the competitiveness of key domestic and international markets by reducing transport costs and improving journey time reliability for commercial transport routes including links to Glasgow, Glasgow Airport, Prestwick Airport, the M74 corridor and the ports at Cairnryan.												
	Increase resilience of access to key domestic and international markets to encourage people to live, study, visit and invest in Ayrshire & Arran.												
	Increase the mode share of freight by sustainable modes in Ayrshire & Arran.												



A reliable and resilient strategic transport system that is safe and secure for users	Improve resilience of the strategic transport system to reduce the impacts of disruption, with a particular focus on the corridors serving Glasgow, the ports at Cairnryan, the Glasgow South Western Line, and lifeline ferry services.												
	Reduce transport related casualties in the region in line with reduction targets												
	Improve resilience in the region through climate change adaptation within the management and maintenance of trunk road, rail and ferry infrastructure.												



5. Approach to Option Generation and Sifting

5.1. Strategic Options

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

Specifically, this will include:

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

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

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

A strategic project will not include:

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



- Routine and cyclic maintenance measures.

5.2. Approach

The approach to the generation of options for STPR2, including the options identified at the regional level for Ayrshire & Arran, is summarised in Figure 35 overleaf.

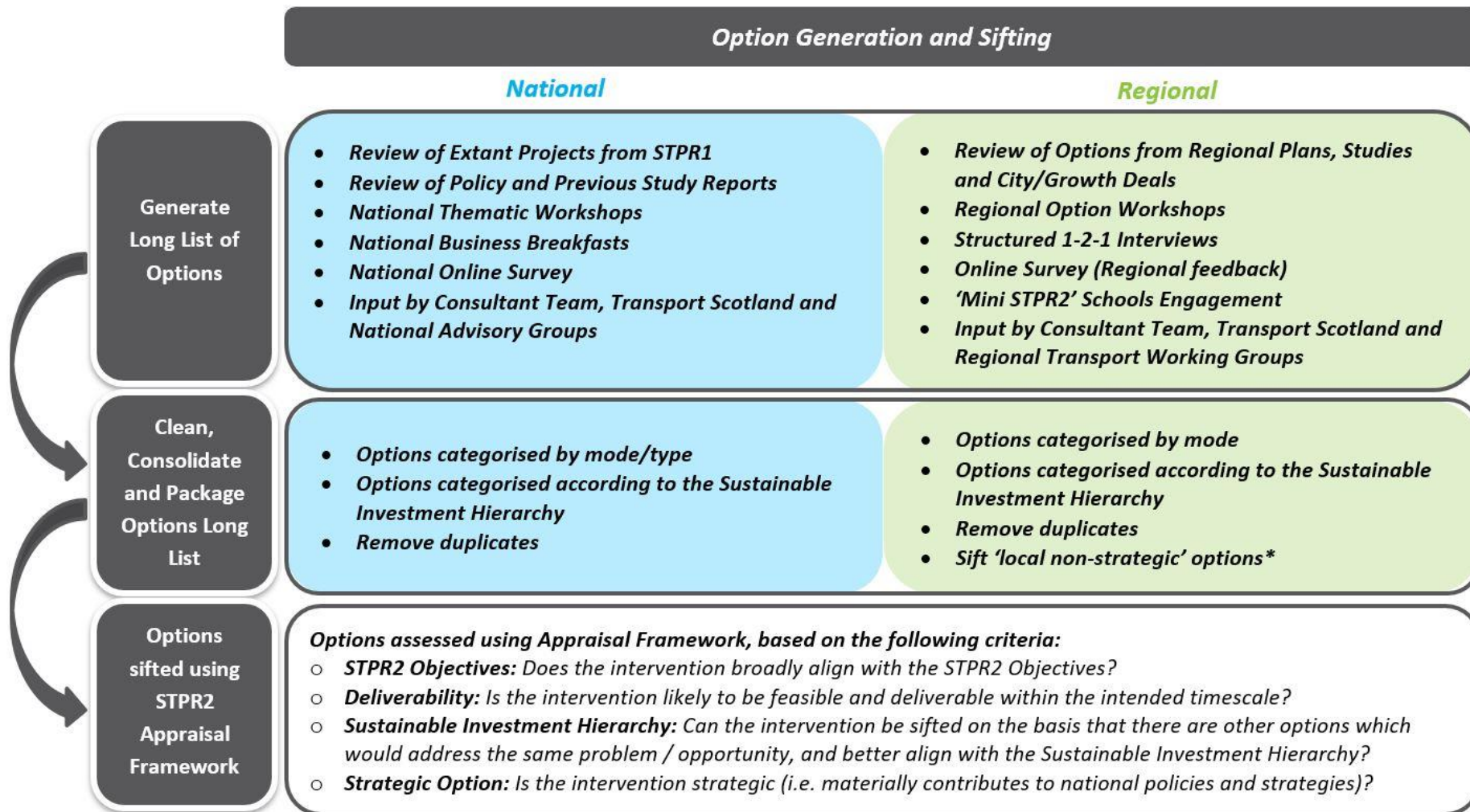


Figure 35: Approach to Option Generation and Sifting

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

As noted, a long list of interventions for consideration through STPR2 is currently being developed from a range of national and regional option generation exercises. At the Ayrshire & Arran level, work has included option workshops held in Ardrossan and Kilmarnock in November 2019, the findings from the online survey as well as a review of interventions identified from recent previous studies completed in the region, including the findings from the Ayrshire Transport Summit held in 2018.

The process of option generation for STPR2 is being informed and structured around the sustainable investment hierarchy which is outlined in the NTS2.



Figure 36: The Sustainable Investment Hierarchy

5.3. Next Steps

Going forward, the long list of options will be developed and sifted in line with the approach set out in Section 5.2, with the resulting short list of interventions appraised in line with the STAG based Appraisal Framework developed for STPR2.

Commenting on this Report

As part of ongoing engagement, comments on this draft Case for Change Report can be submitted using a comments form that can be accessed [here](#). The closing date for comments is midnight on Wednesday 8th April 2020.

APPENDICES



Appendix A: Figures

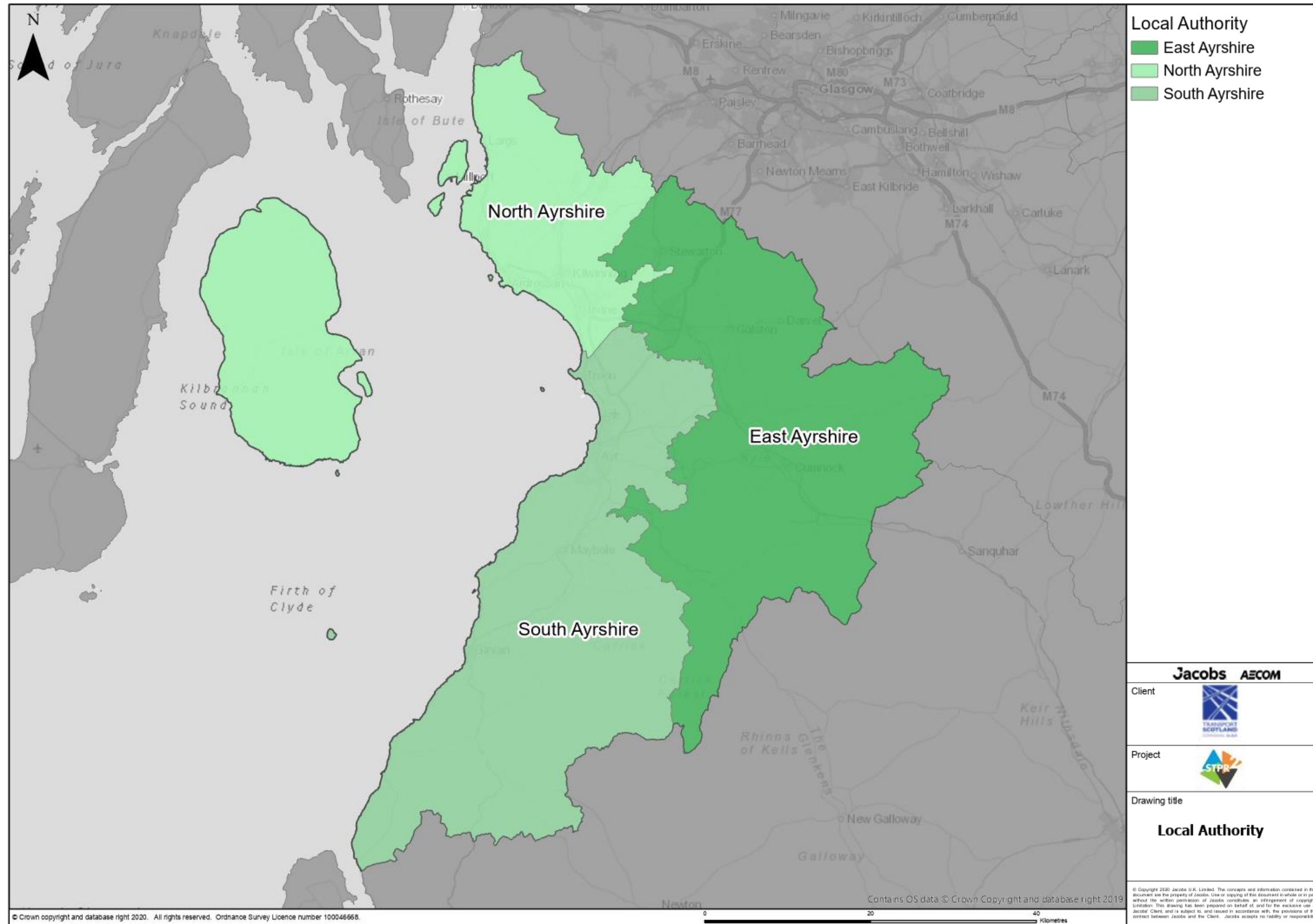


Figure A 1: Ayrshire & Arran Study Area (Click image to go back to main report)

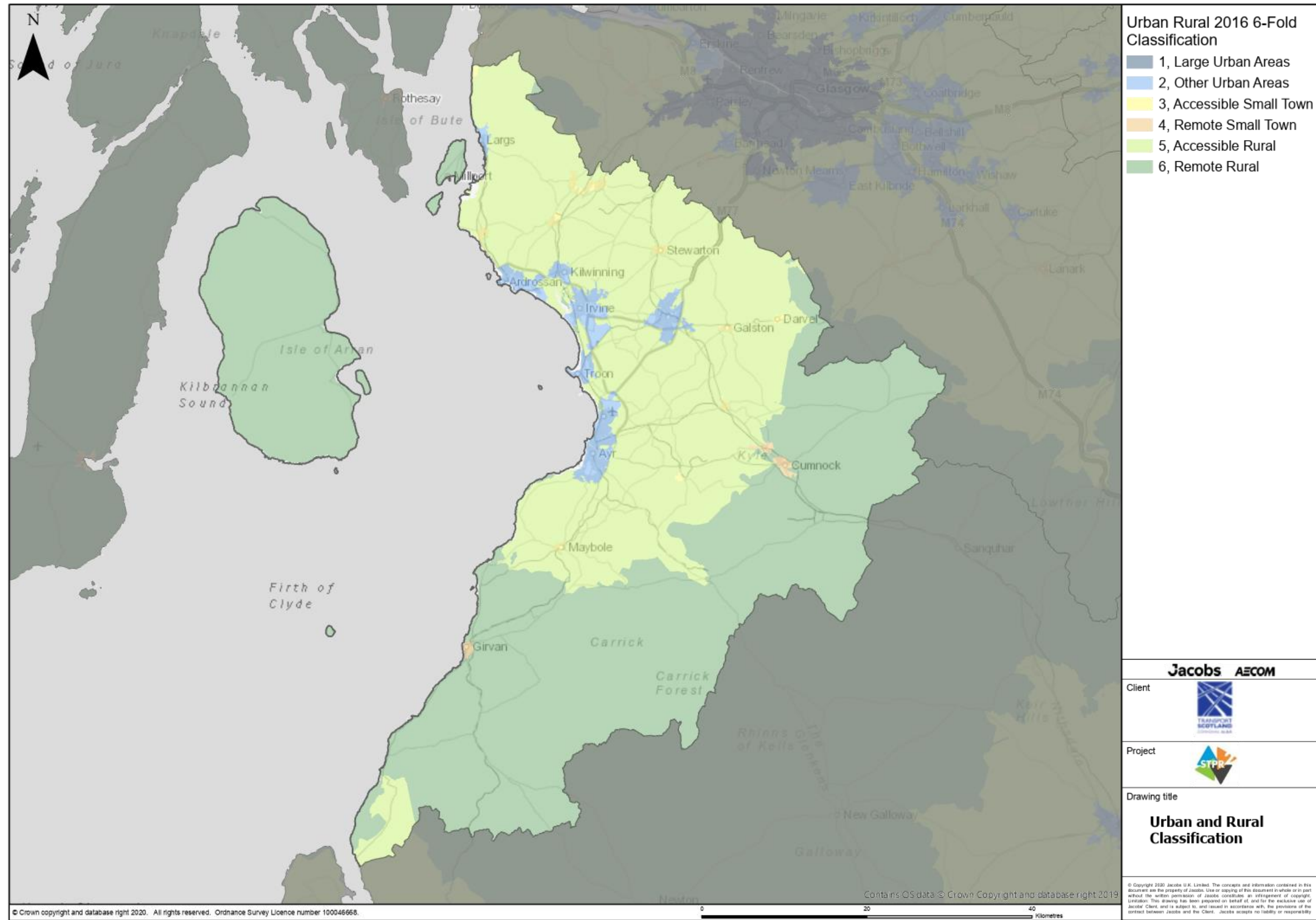


Figure A 2: Urban Rural 2016 6-Fold Classification (Click image to go back to main report)

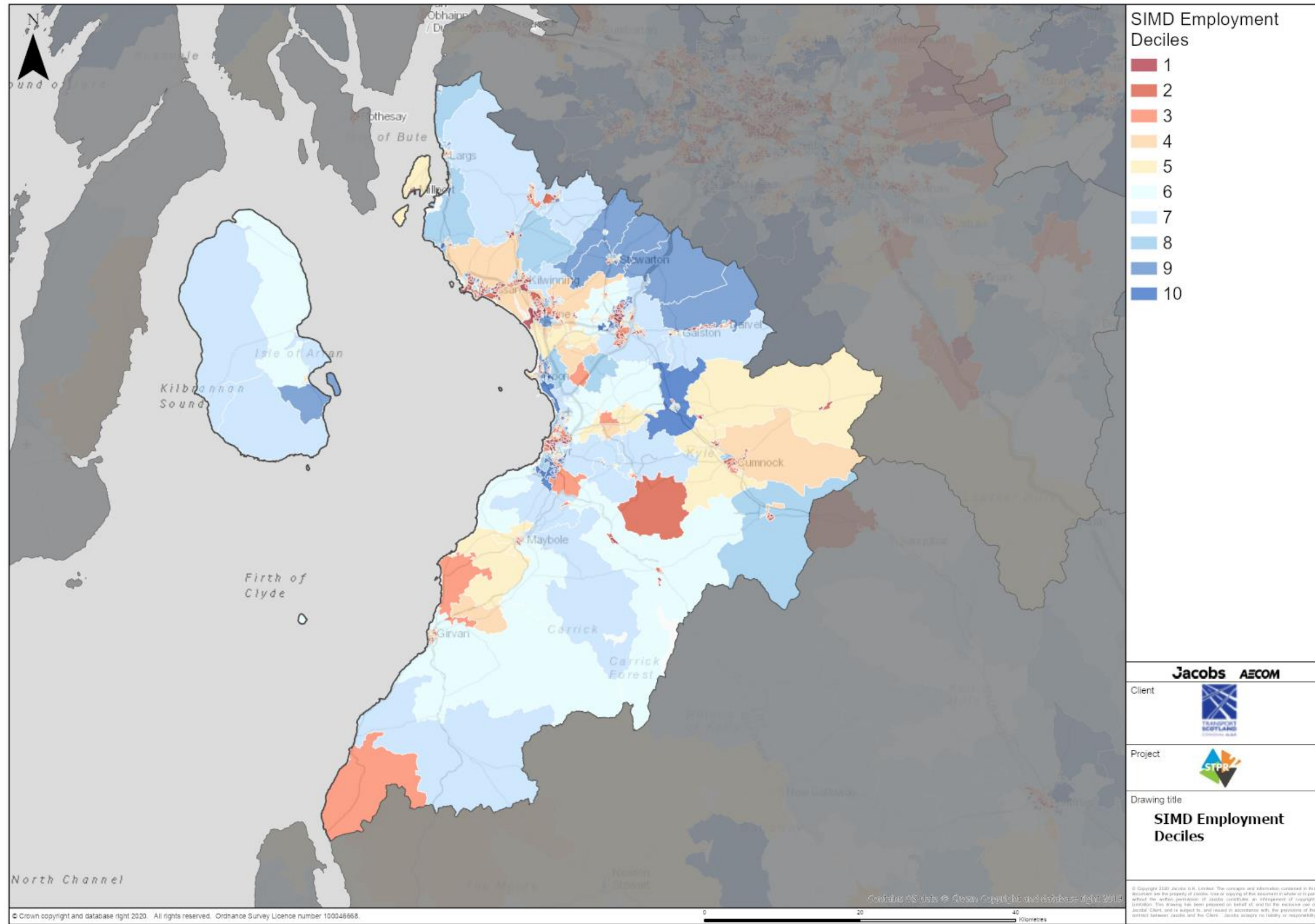


Figure A 3: SIMD Employment Domain (Click image to go back to main report)

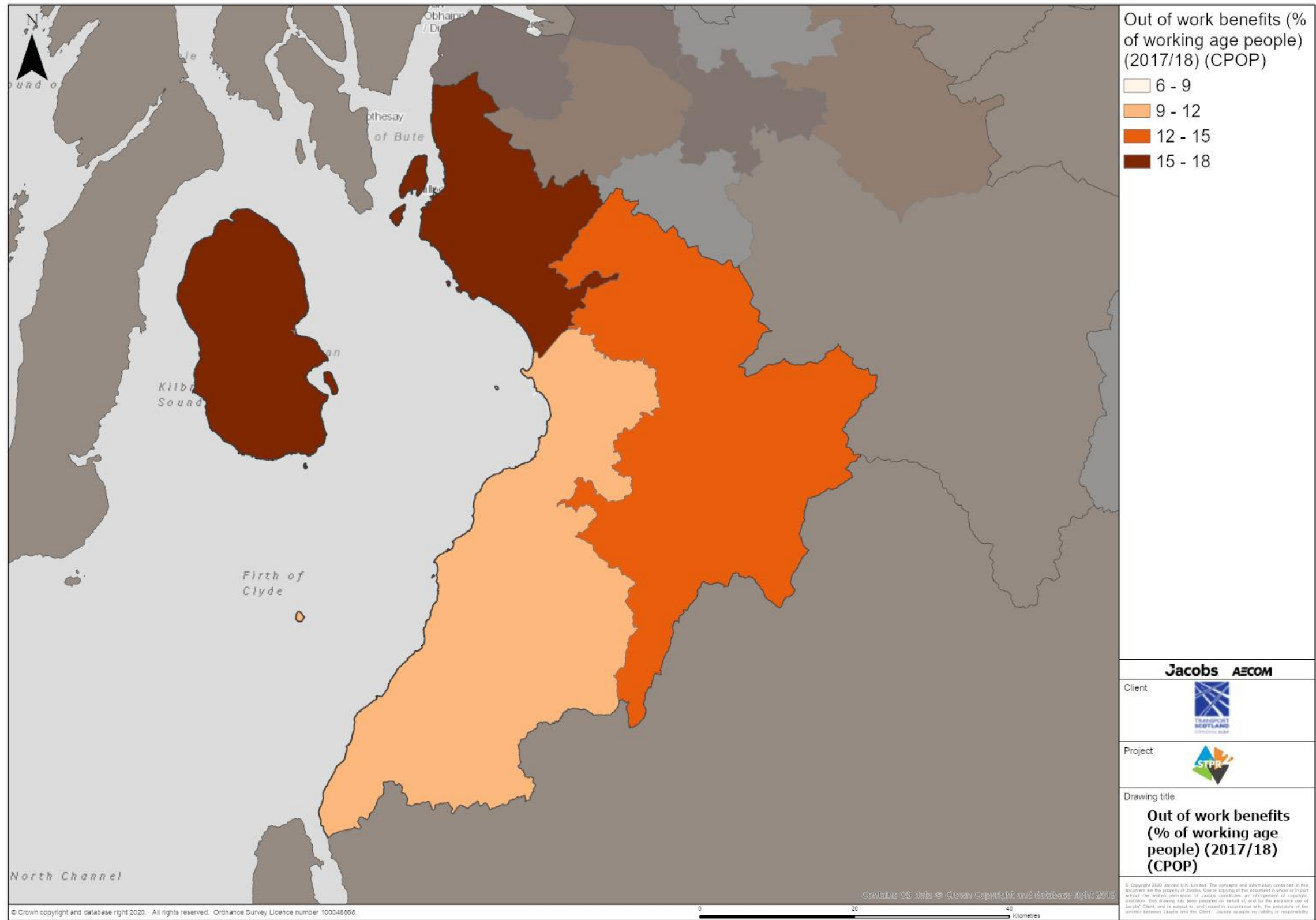


Figure A 4: Out of Work Benefits (Click image to go back to main report)

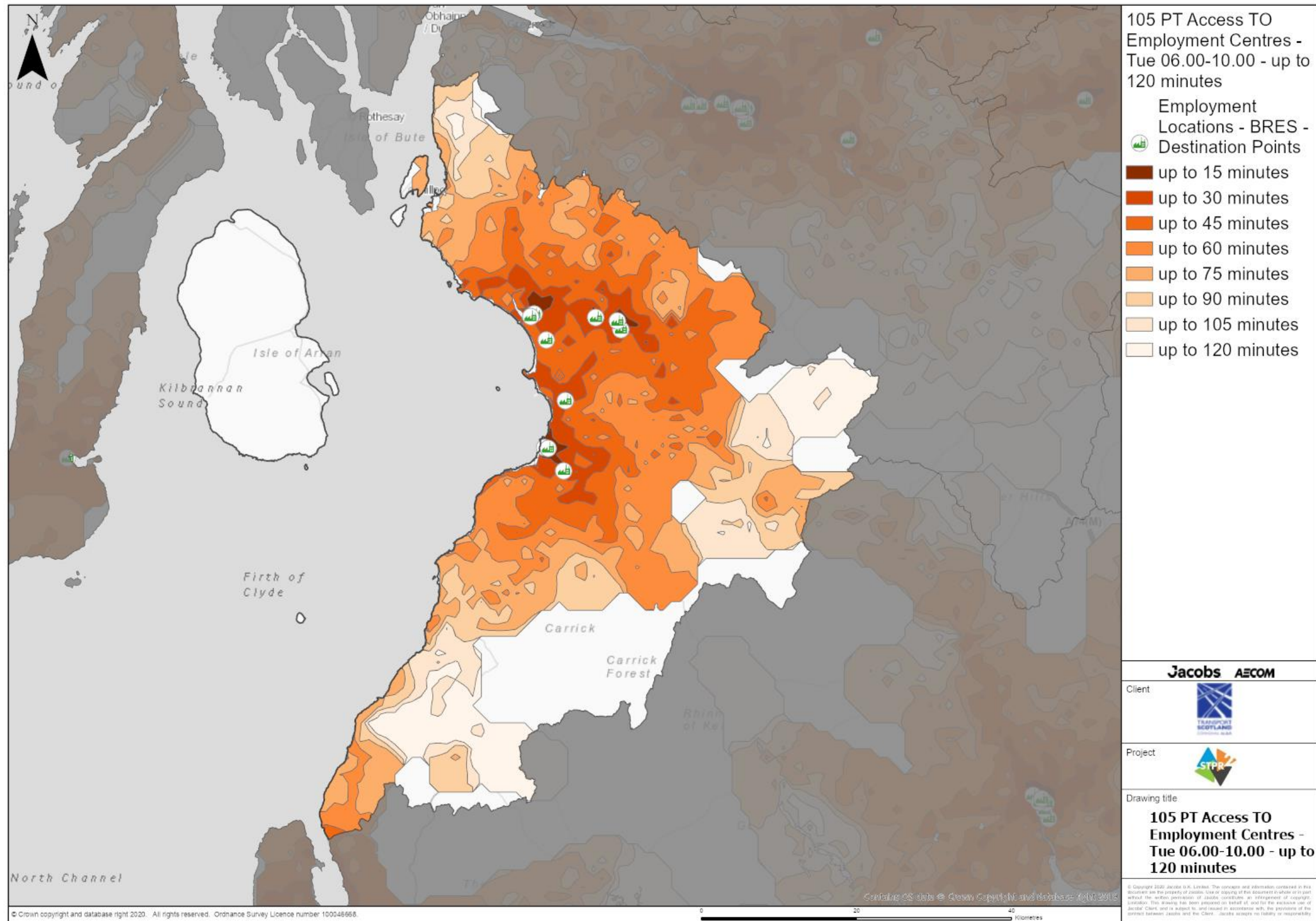


Figure A 5: TRACC Access to Employment (Click image to go back to main report)

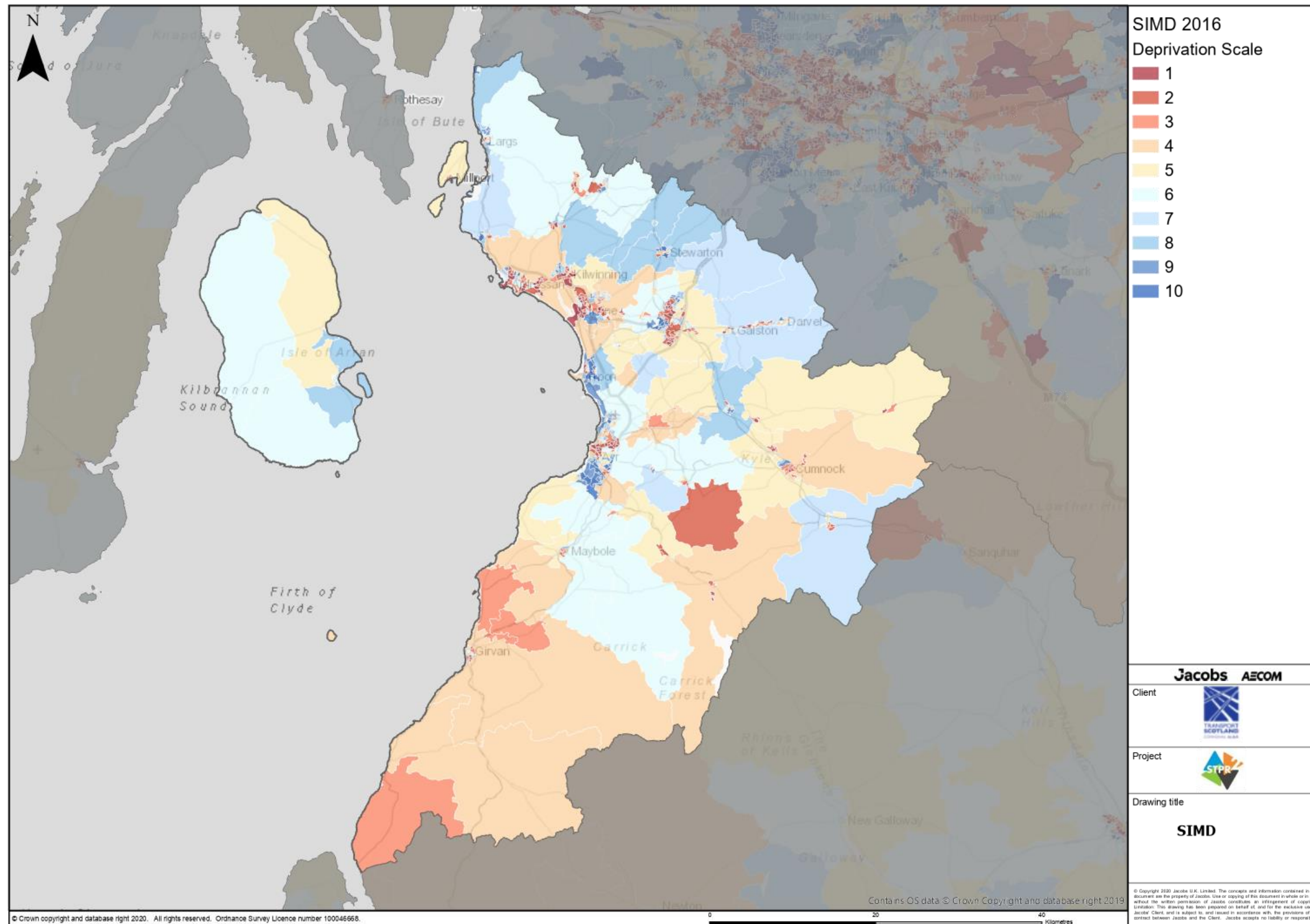


Figure A 6: Scottish Index of Multiple Deprivation 2016 (Click image to go back to main report)

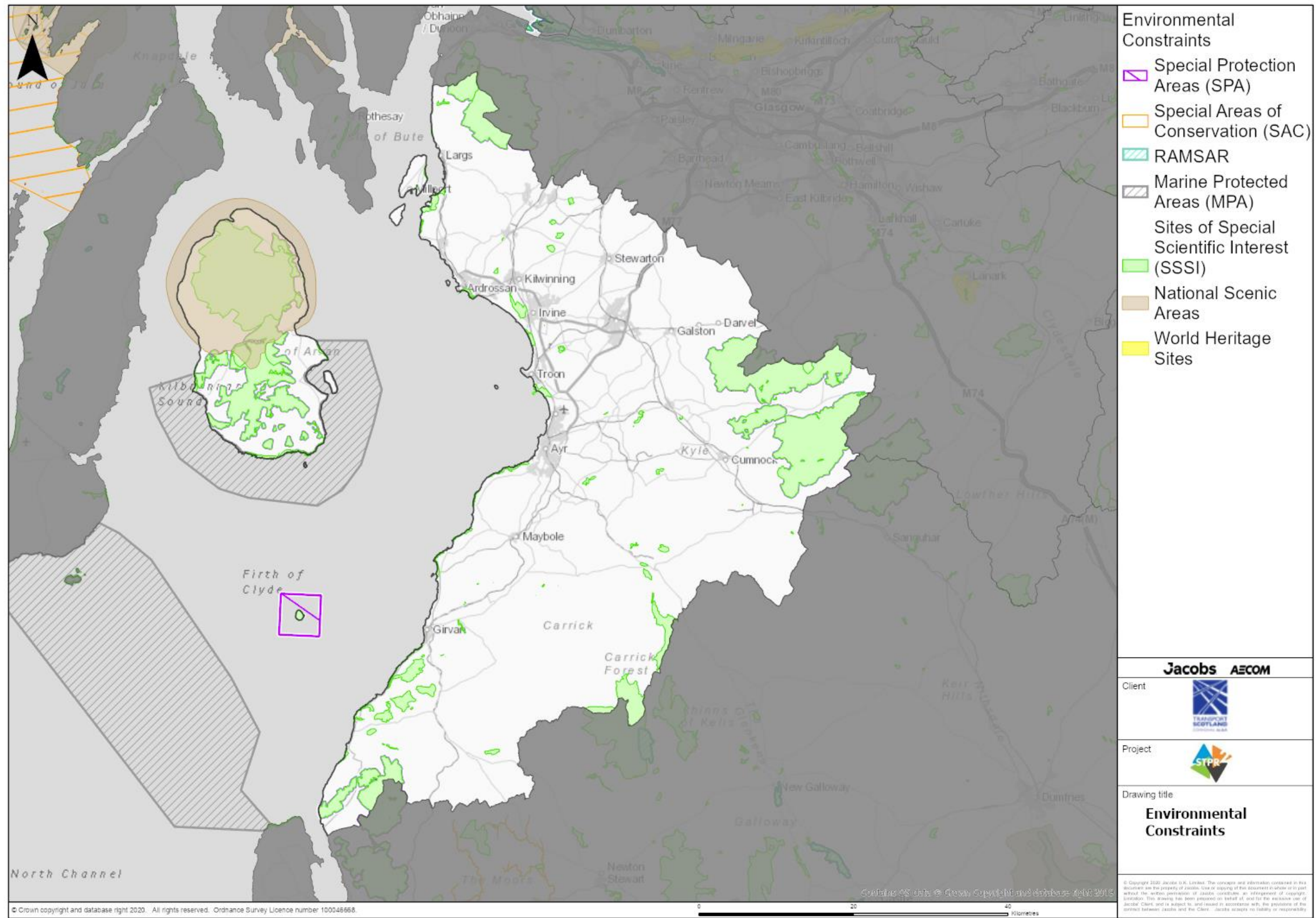


Figure A 7: Environmental Designations (Click image to go back to main report)

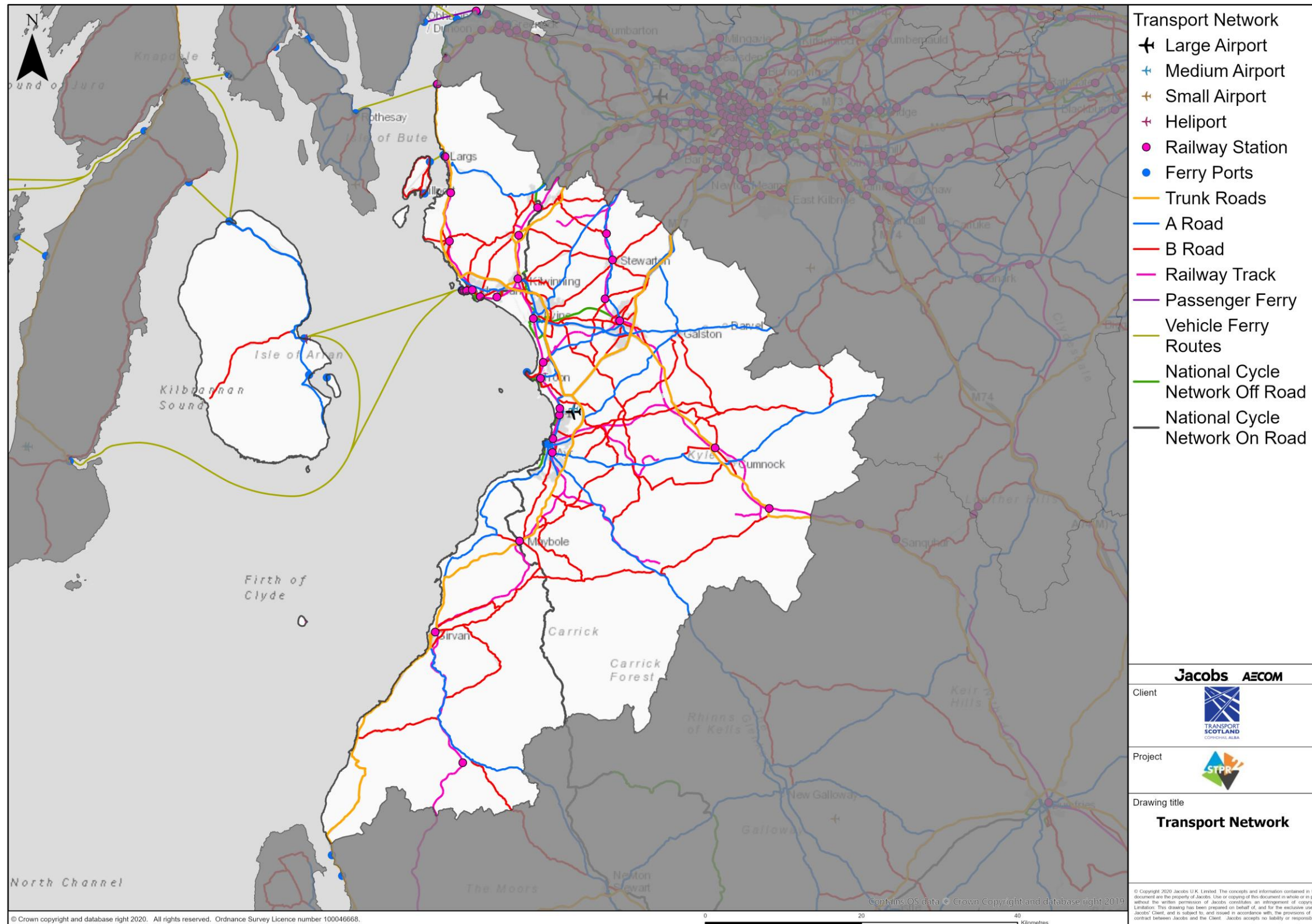


Figure A 8: Ayrshire & Arran Transport Network (Click image to go back to main report)

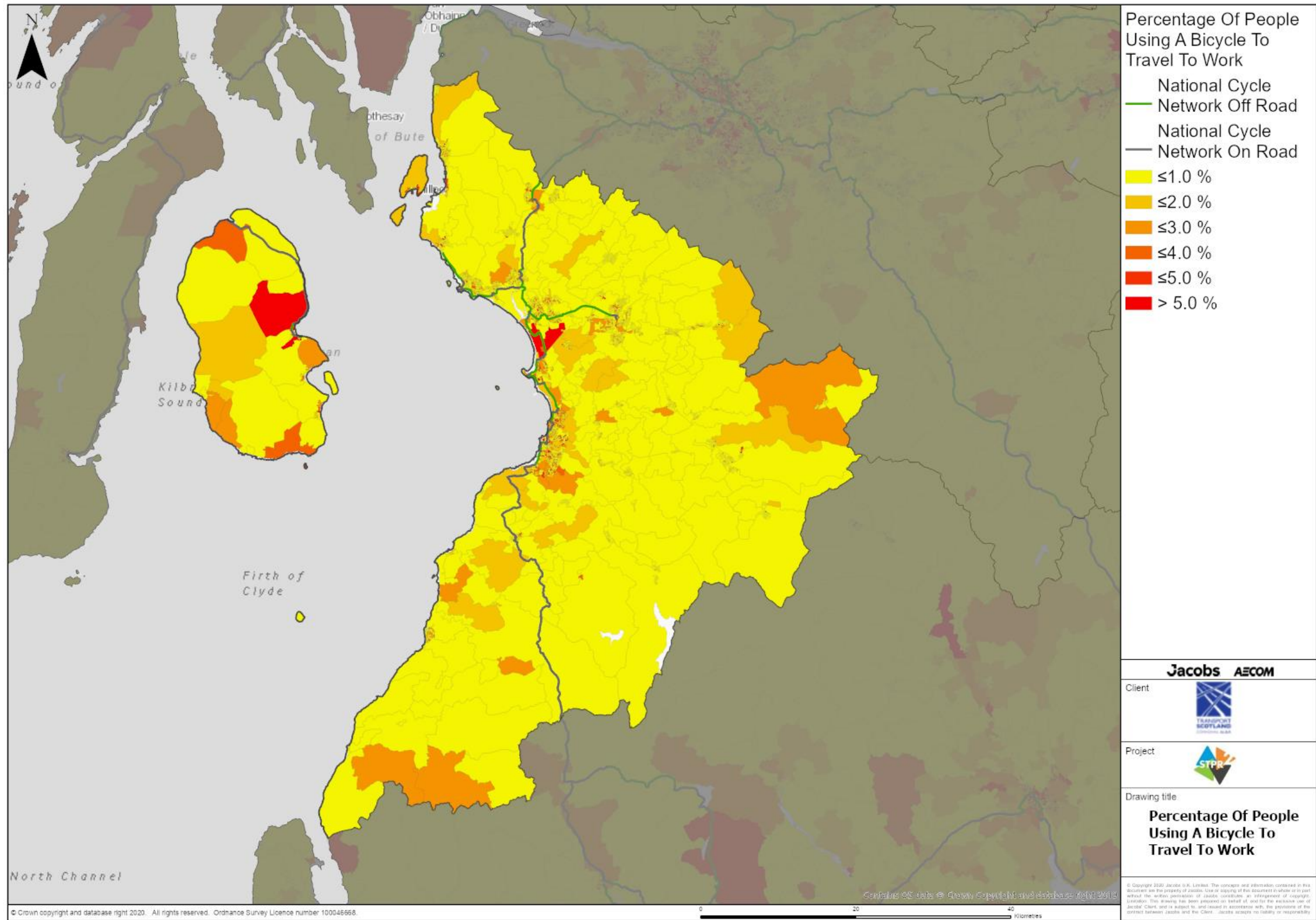


Figure A 9: Percentage of People Travelling to Work by Bicycle (Click image to go back to main report)

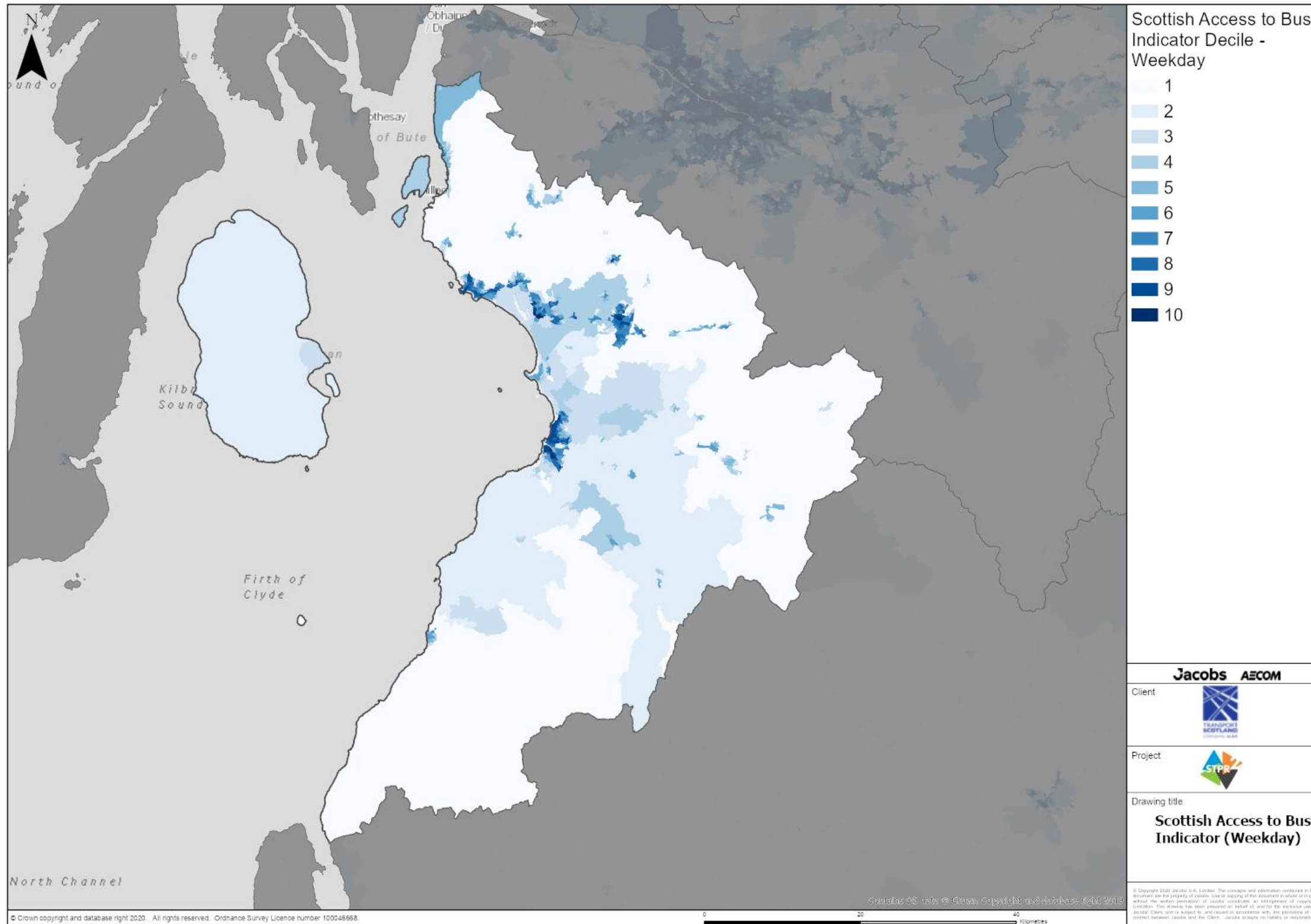


Figure A 10: Scottish Access to Bus Indicator, Weekday (Click image to go back to main report)

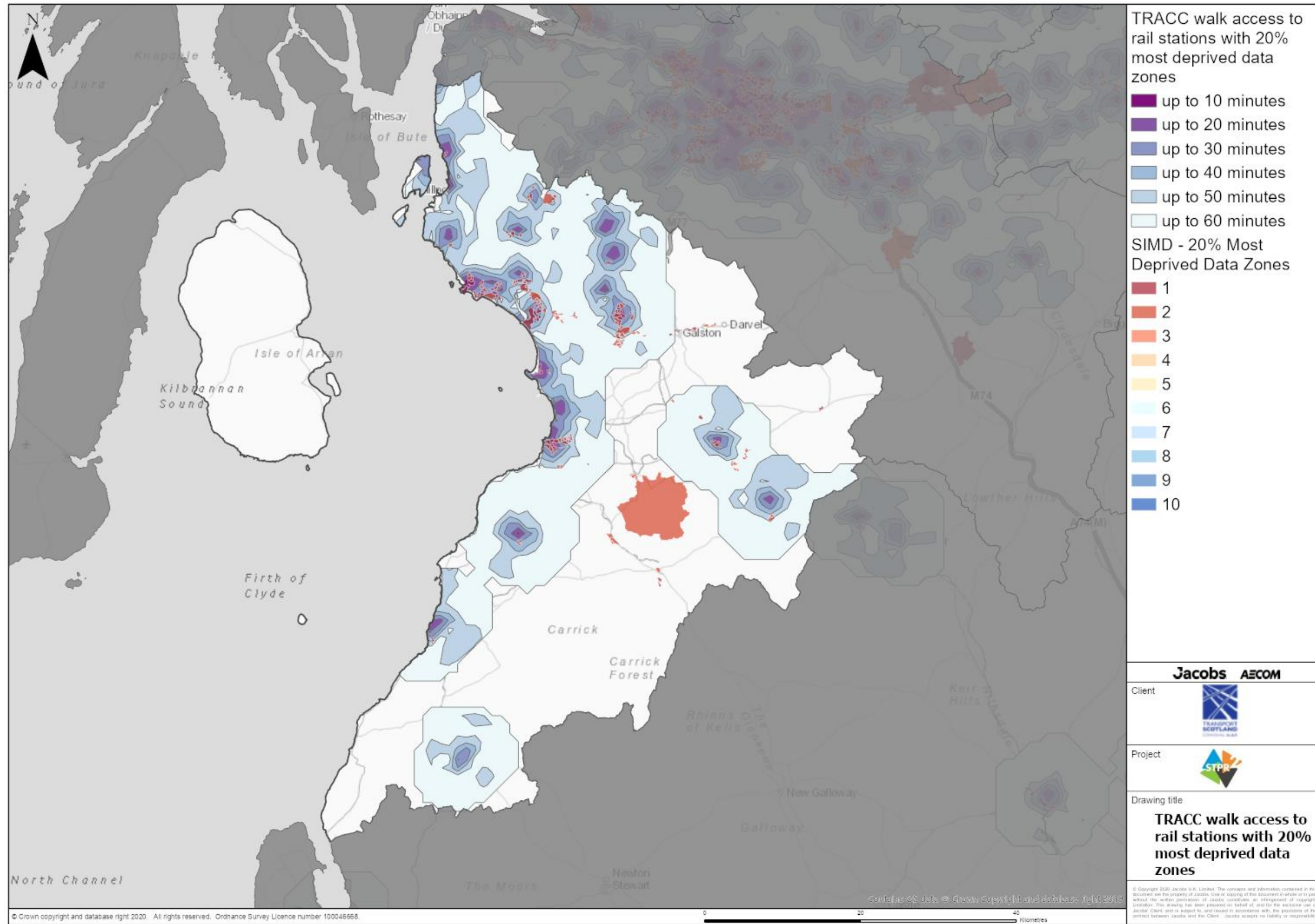


Figure A 11: TRACC Walk Access to Rail Stations and 20% most deprived SIMD data zones (Click image to go back to main report)

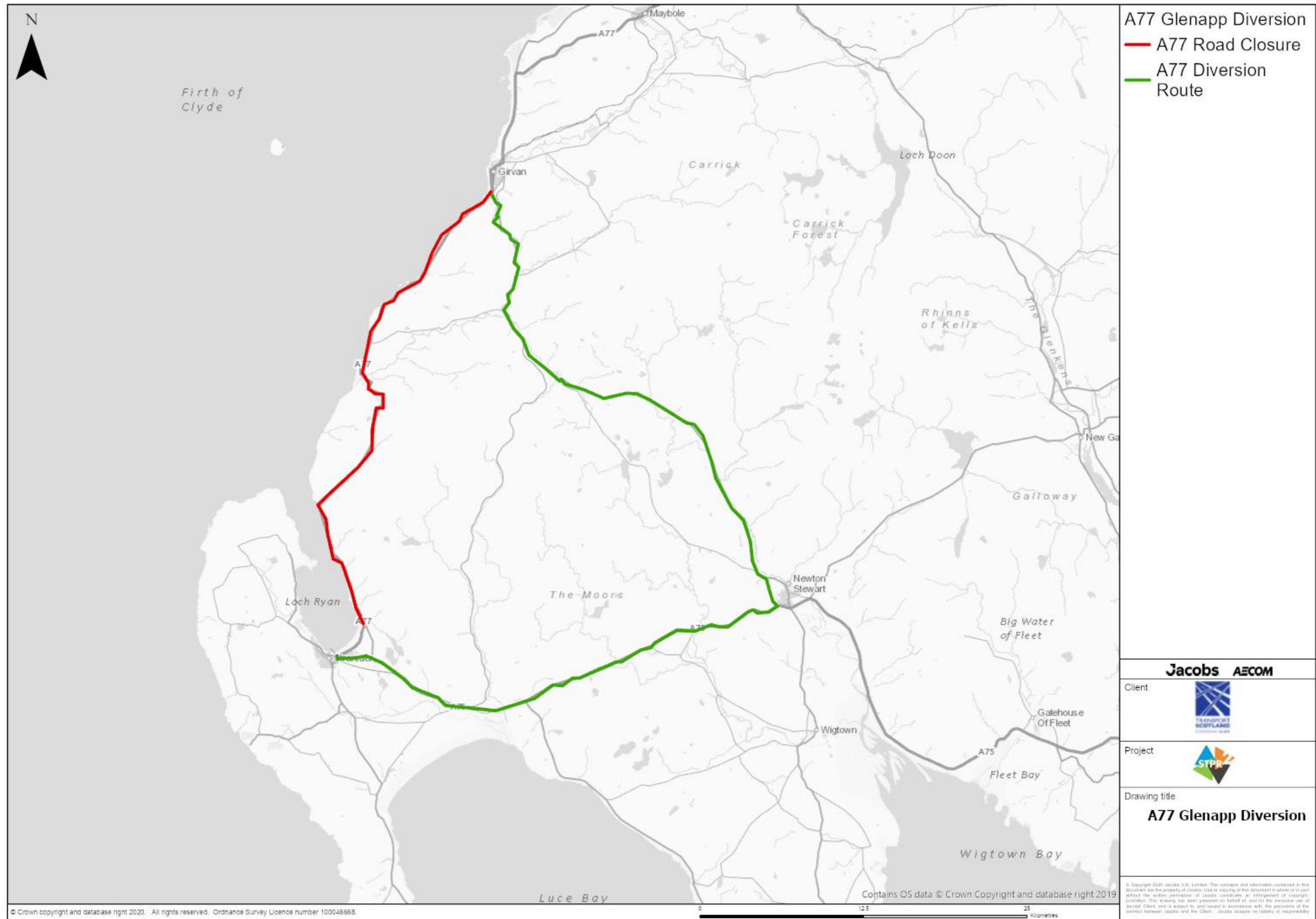


Figure A 12: A77 Diversionary Route (Click image to go back to main report)

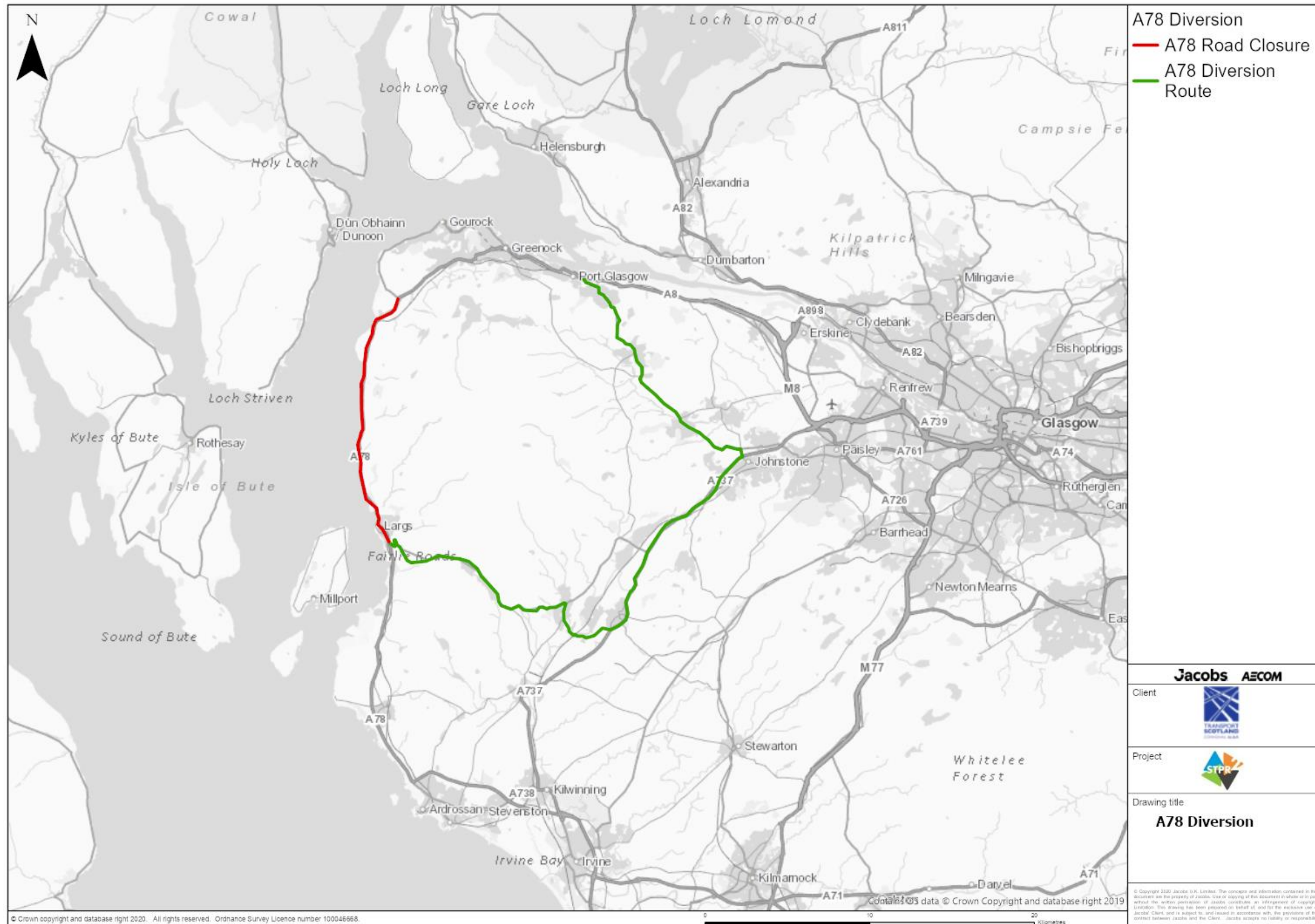


Figure A 13: A78 Diversionary Route (Click image to go back to main report)

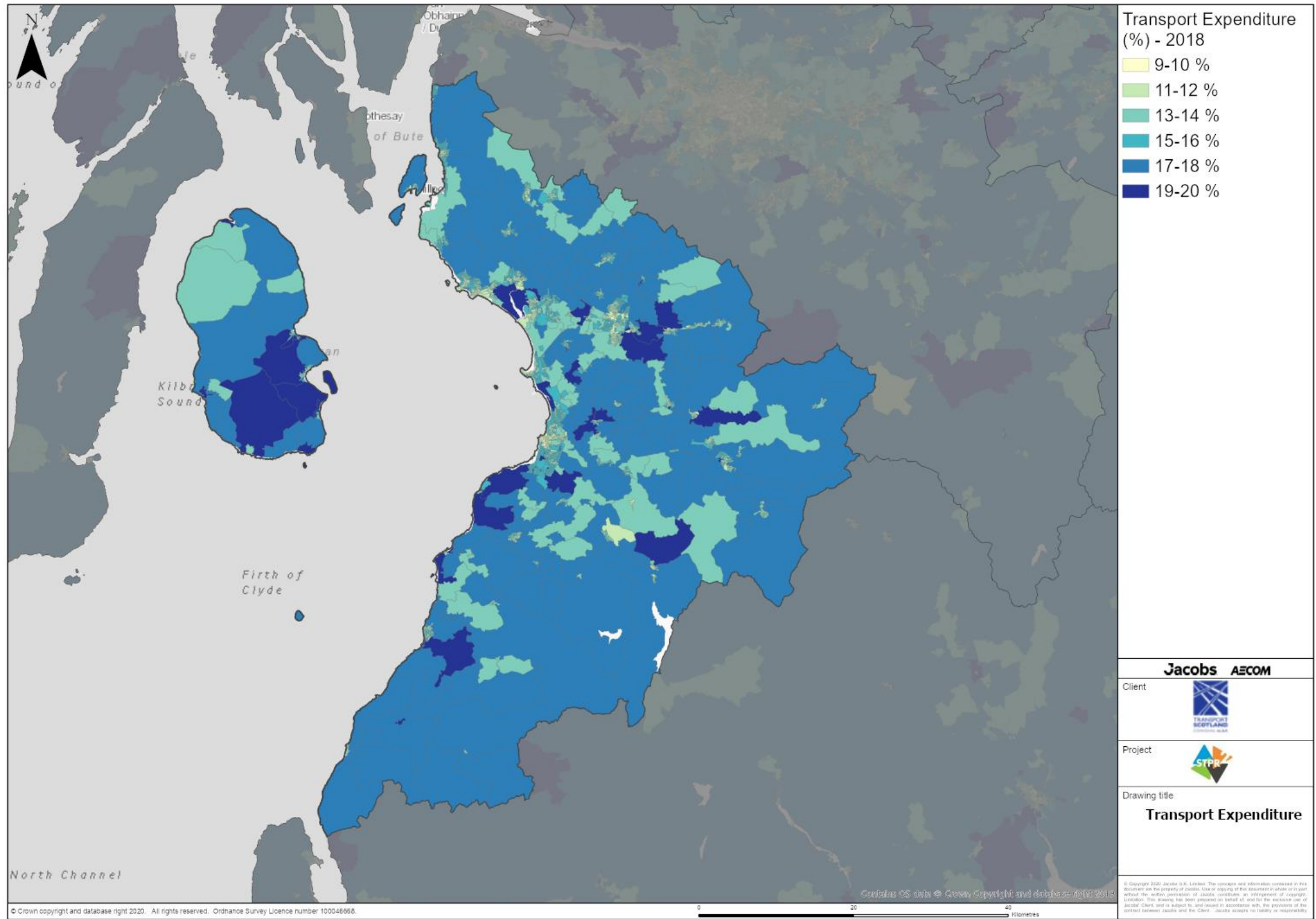


Figure A 15: Transport Expenditure in Ayrshire & Arran (Click image to go back to main report)

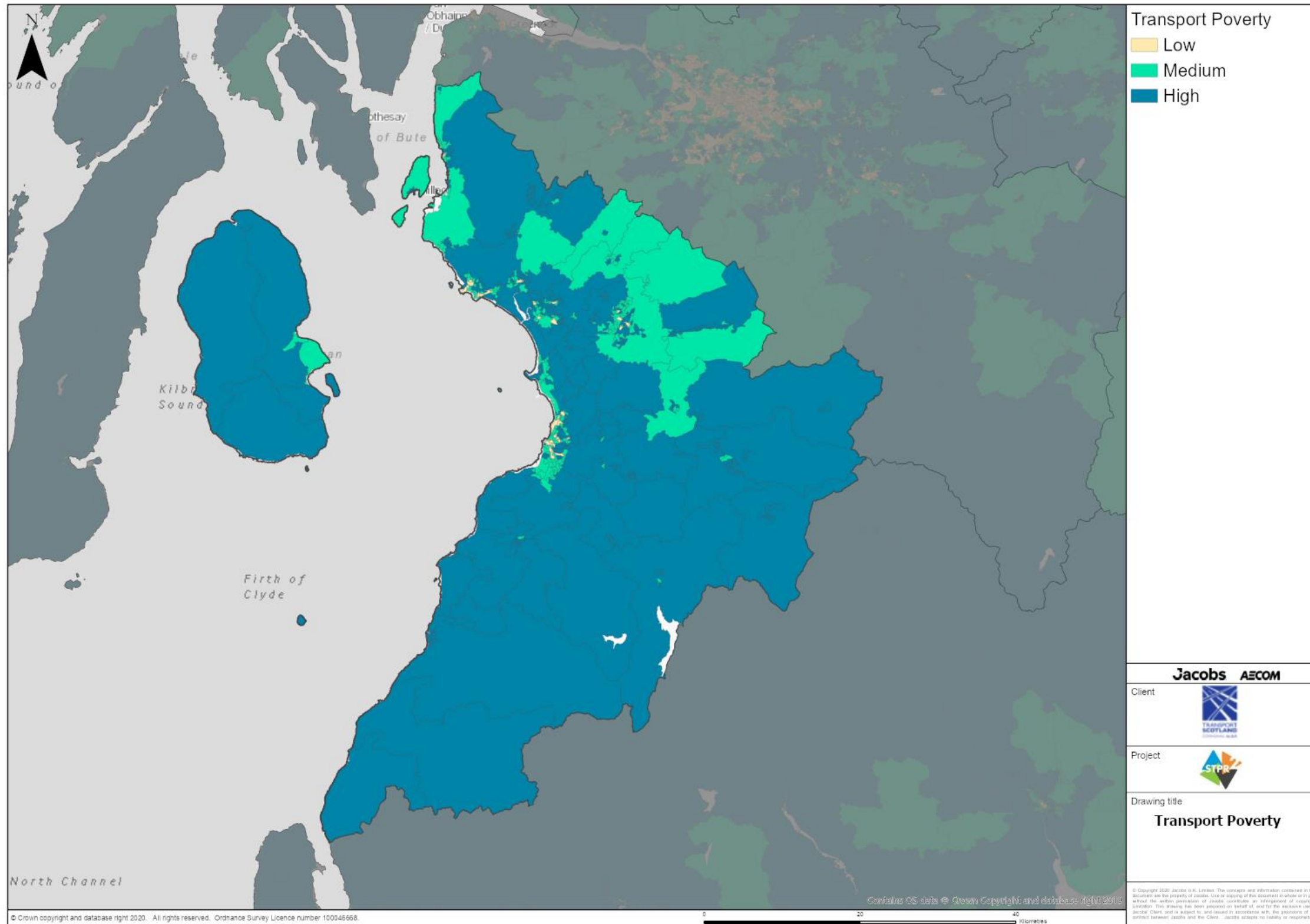


Figure A 16: Transport Poverty in Ayrshire & Arran (Click image to go back to main report)

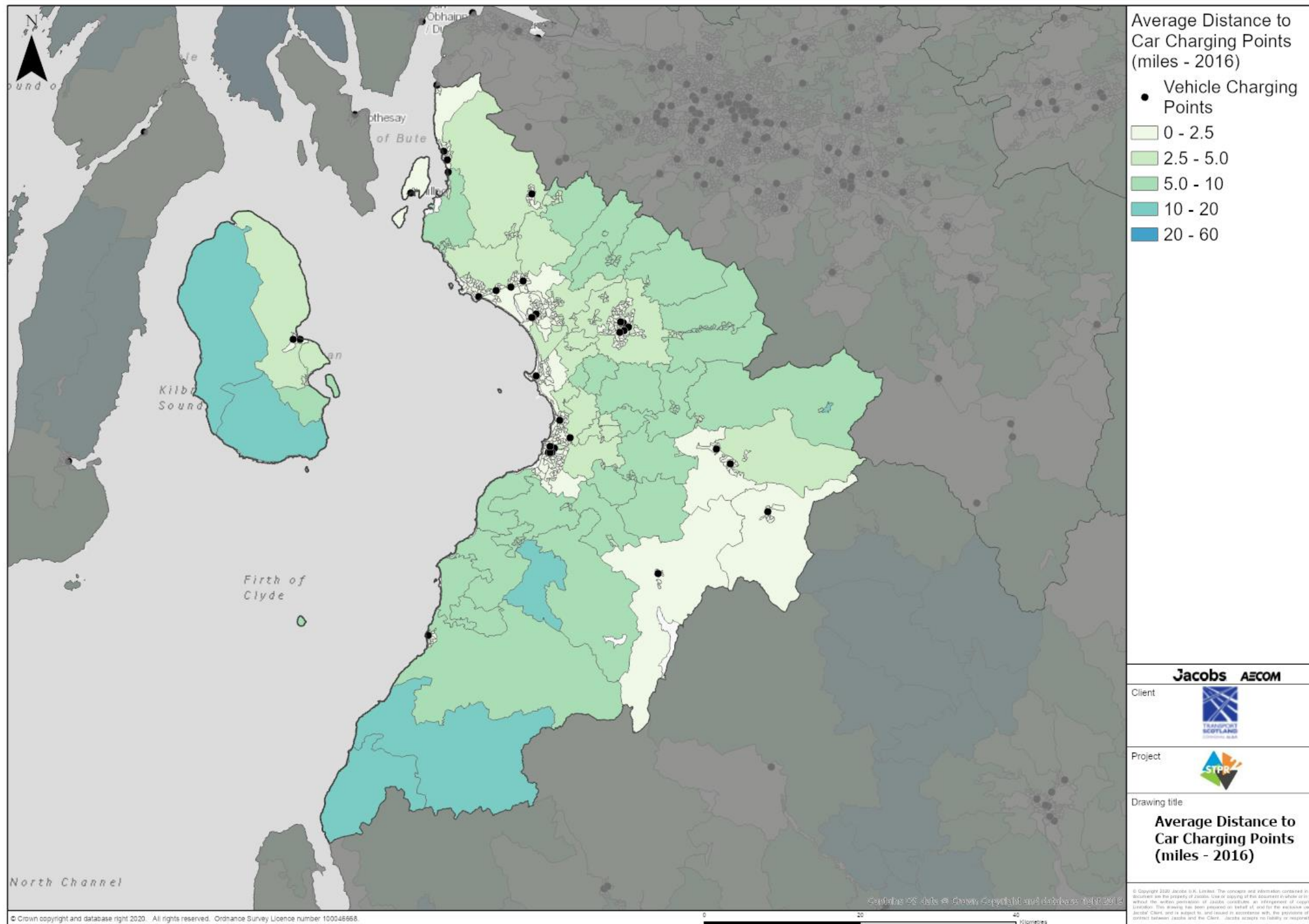


Figure A 17: Proximity to nearest EV Charge Point, Ayrshire & Arran (Click image to go back to main report)

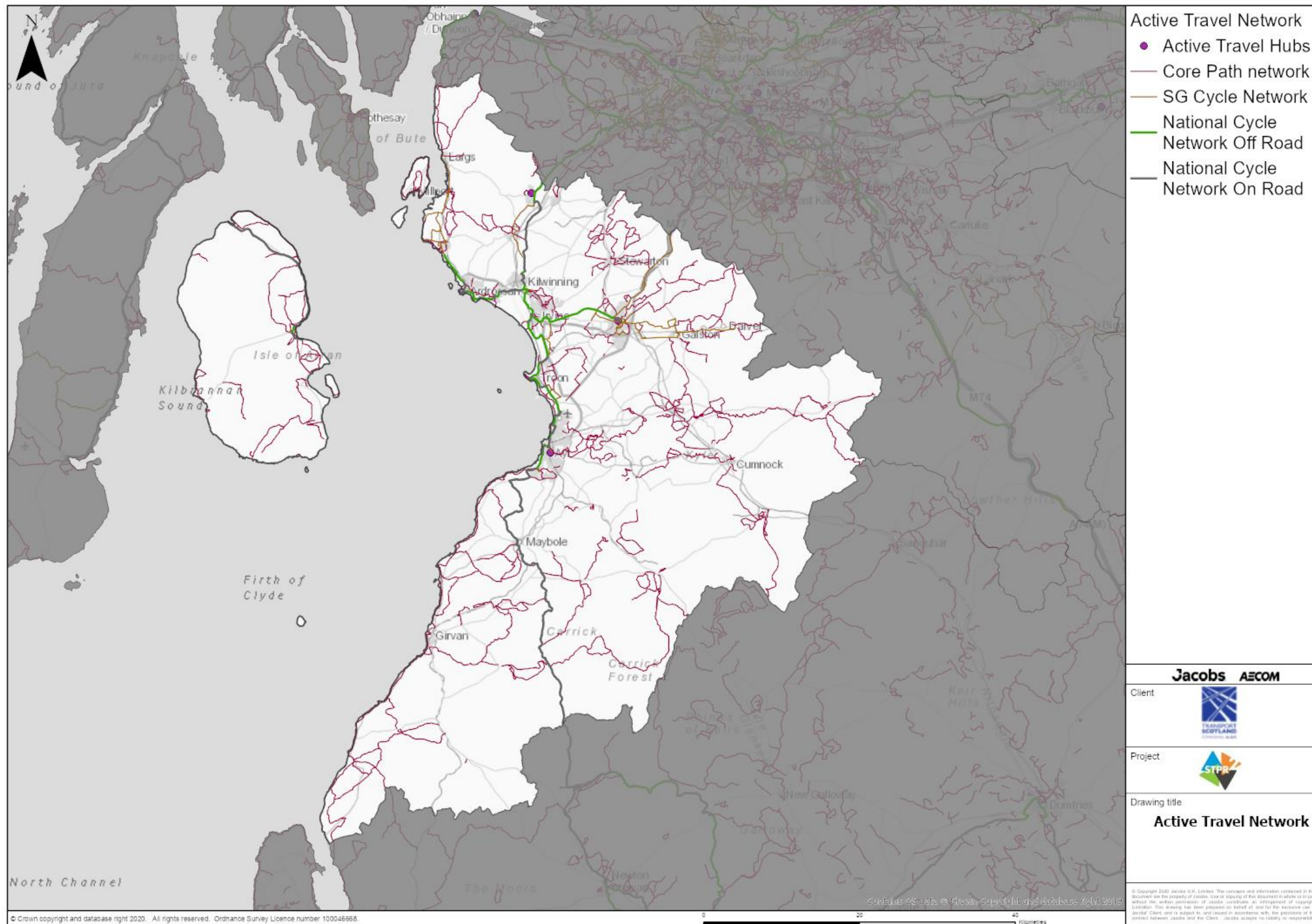


Figure A 18: Ayrshire & Arran Active Travel Network (Click image to go back to main report)

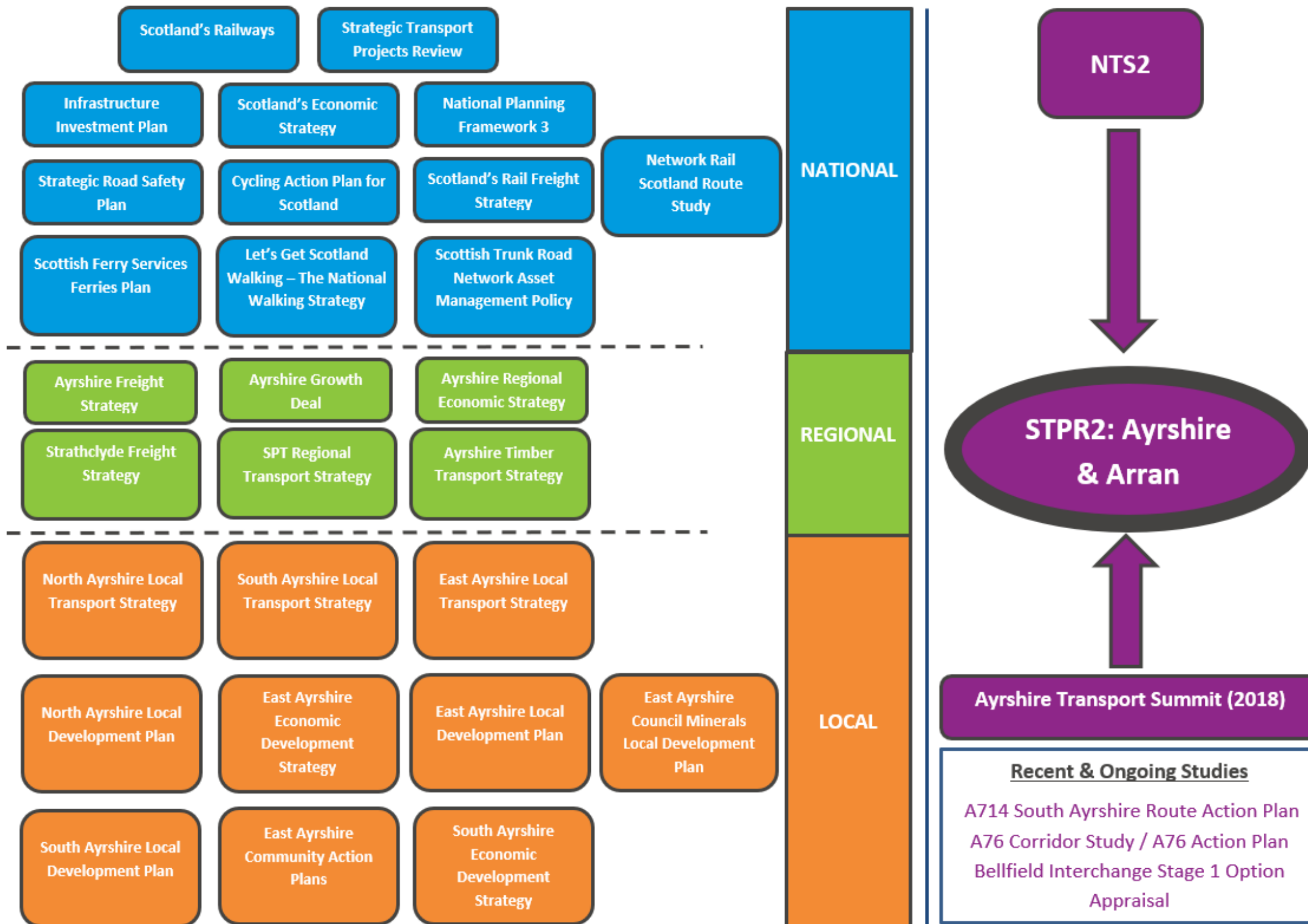


Figure A 19: Strategy and Policy Overview (Click image to go back to main report)

TRAVEL TIME (MINS)

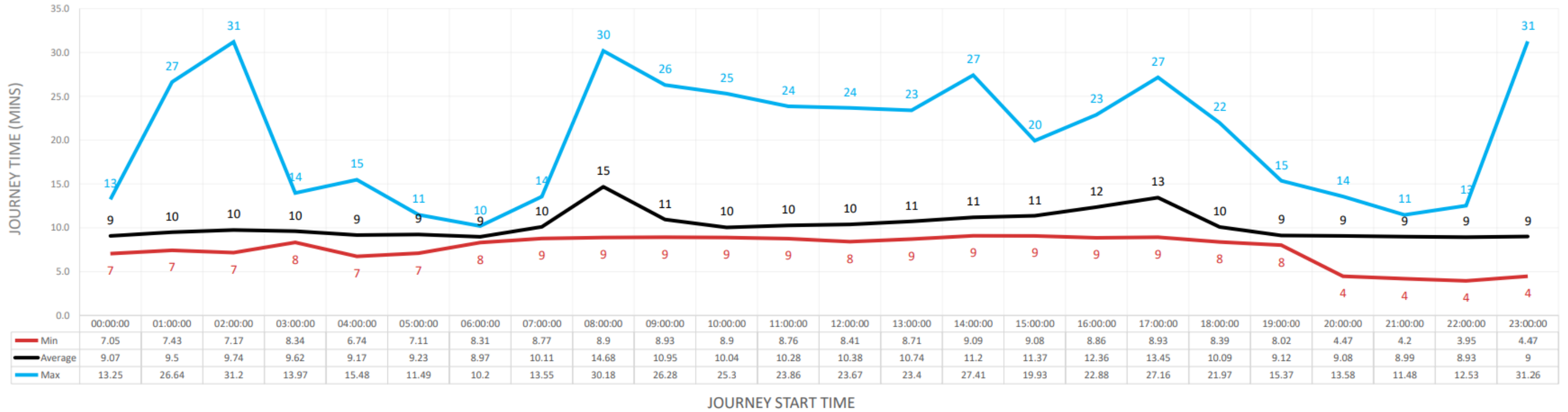


Figure A 20: Monkton Roundabout to Bankfield Roundabout (A77) INRIX Journey Times (Click image to go back to main report)



Appendix B: List of Policy Documents

THEME	TITLE	AUTHOR	YEAR
Development	East Ayrshire Local Development Plan	East Ayrshire Council	2017
Development	Minerals Local Development Plan: Proposed Plan	East Ayrshire Council	2018
Development	South Ayrshire Local Development Plan	South Ayrshire Council	2014
Development	North Ayrshire Local Development Plan	North Ayrshire Council	2014
Development	North Ayrshire Local Development Plan 2	North Ayrshire Council	2019
Development	Infrastructure Investment Plan	The Scottish Government	2015
Development	National Planning Framework 3	The Scottish Government	2014
Economy	Ayrshire Growth Deal – Heads of Terms Agreement	North, South and East Ayrshire Councils, The Scottish Government, UK Government	2019
Economy	East Ayrshire Economic Development Strategy 2014 – 2025	East Ayrshire Council	2014
Economy	South Ayrshire Economic Development Strategy 2013 – 2023	South Ayrshire Community Planning Partnership	2013
Economy	North Ayrshire Economic Development & Regeneration Strategy 2016 – 2025	North Ayrshire Council	2016
Economy	Millport & Cumbrae Economic Plan 2015	Douglas Wheeler Associates to North Ayrshire Council	2015
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	The Scottish Government	2017



	Strategy		
Environment	North Ayrshire Environmental Sustainability & Climate Change Strategy	North Ayrshire Council	2017
Environment	Ayrshire Flood Risk Management Strategy	Ayrshire Local Plan District, 2016	2016
Other	East Ayrshire Community Action Plans	Various	Various
Other	Glasgow Prestwick Airport Strategic Plan 2017 – 2022	Glasgow Prestwick Airport	2017
Tourism	Ayrshire & Arran Tourism Strategy	Ayrshire Economic Partnership	2012
Tourism	Making Waves in North Ayrshire: Tourism Action Plan 2018 – 2022	North Ayrshire Council	2018
Tourism	East Ayrshire Tourism Action Plan	East Ayrshire Council	2017
Transport	Ayrshire Transport Summit	All Ayrshire Alliance	2018
Transport	A Catalyst for Change, The Regional Transport Strategy for the west of Scotland 2008-21	SPT	2008
Transport	Freight Strategy for Strathclyde	SPT	2018
Transport	Ayrshire Freight Strategy	Ayrshire Roads Alliance	2016
Transport	South West Scotland Transport Study, Initial Appraisal: Case for Change	Transport Scotland	2020
Transport	A76 Corridor Study	East Ayrshire and Dumfries & Galloway Councils	2015
Transport	A714 South Ayrshire Route Action Plan	Ayrshire Roads Alliance	2014
Transport	Ayrshire Timber Transport Strategy	Ayrshire Joint Structure Plan and Transportation	2005



		Committee	
Transport	Accessing a sustainable future: The East Ayrshire Local Transport Strategy 2009-2014	East Ayrshire Council	2009
Transport	South Ayrshire Council Local Transport Strategy 2009 – 2014	South Ayrshire Council	2009
Transport	North Ayrshire Local Transport Strategy 2015-20	North Ayrshire Council	2015
Transport	North Ayrshire Council Road Safety Plan	North Ayrshire Council	2015
Transport	North Ayrshire Council Town Centre Parking Strategy 2014 – 2020	North Ayrshire Council	2014
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	Network Rail Scotland Route Study	Network Rail	2016
Transport	Cycling Action Plan for Scotland	Transport Scotland	2017
Transport	Let's Get Scotland Walking	The Scottish Government	2014



Appendix C: Stakeholder Engagement

ENGAGEMENT TYPE	DATE	VENUE	PURPOSE AND DETAILS	NO. OF ATTENDEES
Problems & Opportunities Workshop	Tuesday 18 th June 2019	Ardrossan Civic Centre, Ardrossan	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.	16
	Friday 21 st June 2019	Palace Theatre Complex, Kilmarnock		16
Structured Interviews	July – October 2019	-	Interviews with key stakeholders, including Senior Officers within the three Ayrshire local authorities, Regional Transport Partnership officers and Business representatives, to identify transport related problems and opportunities and potential options for the region.	16
Interventions Workshop	Wednesday 20 th November 2019	Ardrossan Civic Centre, Ardrossan	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.	16
	Thursday 21 st November 2019	Palace Theatre Complex, Kilmarnock		15
Elected Members Briefing / Workshop	Friday 24 th January 2020	North Ayrshire Council, Cunninghame House, Irvine	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.	30



Online Survey	Monday 2 nd December 2019 – Friday 10 th 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.	185 responses
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