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Consultancy Support Services Contract

Initial Appraisal: Case for Change
Tay Cities Region
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Abbreviations

ABBREVIATION	
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
MaaS	Mobility as a Service
NCN	National Cycle Network
NPF	National Planning Framework
NSA	National Scenic Area
NTS	National Transport Strategy
RTS	Regional Transport Strategy
SABI	Scottish Access to Bus Indicator
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEPA	Scottish Environmental Protection Agency
SIMD	Scottish Index of Multiple Deprivation
SMRCS	Scottish Road Maintenance Condition Survey
SPA	Special Protection Area
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.

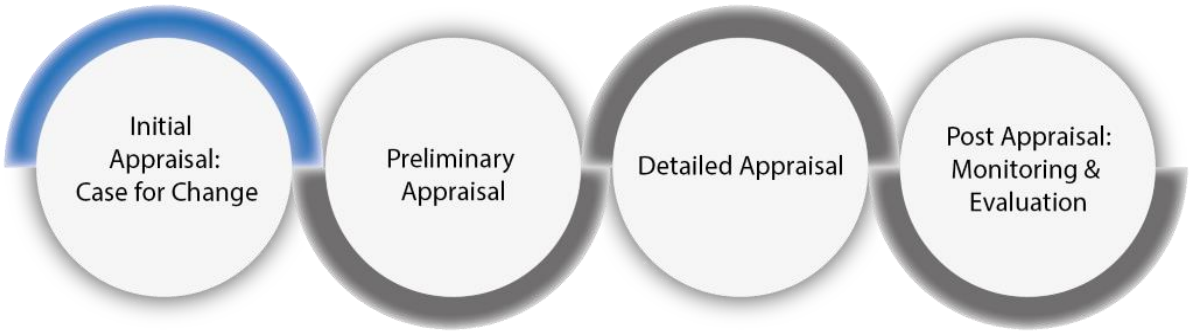


Figure 1 – The Four Key Phases to the Scottish Transport Appraisal Guidance

This report sets out the *Initial Appraisal: Case for Change* for the Tay Cities 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 Tay Cities 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 Tay City Region.

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

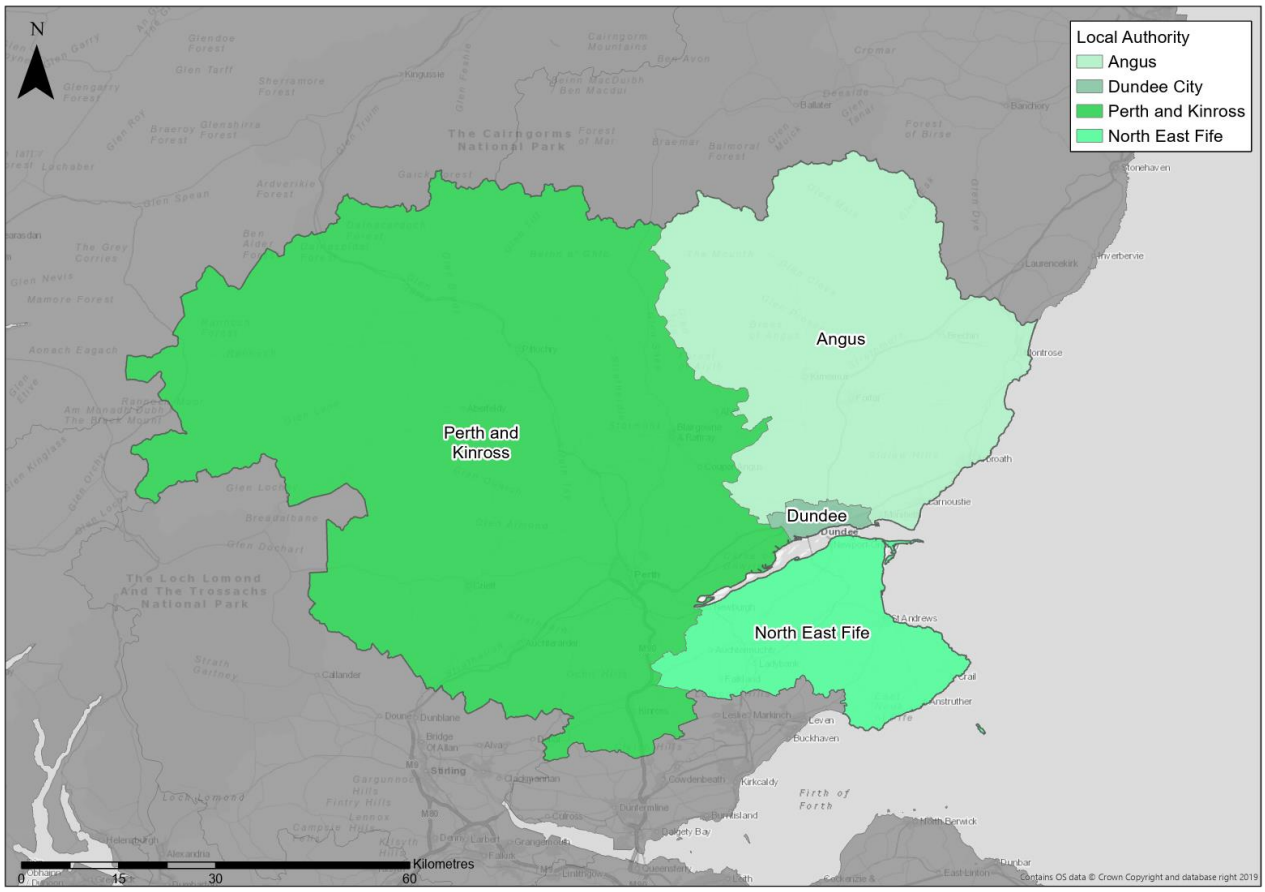


Figure 2 - Tay Cities Region Study Area (click image to enlarge figure)

The Tay Cities Region comprises the four local authorities of Perth & Kinross, Dundee City, Angus and parts of Fife. For the purposes of STPR2, Fife Council spans two regions, with the southern part of Fife included in the Edinburgh and South East Scotland (ESES) region and North East Fife included in the Tay Cities Region. This is to align with the North East Fife area as included in The Tay Cities Deal.

The region has an extensive and complex transport network, reflecting the diverse nature of the different parts of the region and needs of its people.

To reflect the regional approach of STPR2 a Regional Transport Working Group (RTWG) has been established with representatives from the four councils, Tactran and SEStran (Regional Transport Partnerships), Network Rail, ScotRail, Scottish Natural Heritage, Sustrans, Transport Scotland and the STPR2 consultant team.

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

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

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

The following Chapter sets out the Socio-Economic, Environmental and Transport Context for the Tay Cities Region.

2. Context

2.1. Policy Context

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

- **Programme for Government**; sets out the Scottish Government's ambitions and aims to make Scotland a more successful country with opportunities and increased wellbeing for all.
- **The National Transport Strategy 2 (NTS2)**; 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 and wellbeing.
- **Climate Emergency**; declared by the Scottish and UK Governments and multiple local authorities, including Dundee City, Angus and Fife Councils in 2019. As part of this, the Climate Change Bill commits the Scottish Government to a target of net zero emissions of all greenhouse gases by 2045.
- **Tactran Regional Transport Strategy 2015-2036 Refresh**; which sets out the strategic direction and outcomes to be achieved over its lifespan to 2036, which is to deliver: "*a transport system, shaped by engagement with its citizens, which helps deliver prosperity and connects communities across the region and beyond, which is socially inclusive and environmentally sustainable and which promotes the health and well-being of all*". It then identifies six objectives for transport in the region:
  - Economy: To ensure transport helps to deliver regional prosperity.
  - Accessibility, Equity and Social Inclusion: To improve accessibility for all, particularly for those suffering from social exclusion.
  - Environment: To ensure that the transport system contributes to safeguarding the environment and promotes opportunities for improvement.
  - Health & Well-Being: To promote the health and well-being of communities.
  - Safety & Security: To improve the real and perceived safety and security of the transport network.
  - Integration: To improve integration, both within transport and between transport and other policy areas.
- **SEStran Regional Transport Strategy**; which sets a vision and objectives for transport in the South East Scotland region (including Fife) to 2025. Its objectives are:
  - Economy – To ensure transport facilitates economic growth, regional prosperity and vitality in a sustainable manner.
  - Accessibility – To improve accessibility for those with limited transport choice (including disabled people) or no access to a car, particularly those who live in rural areas.

  - Environment – To ensure that development is achieved in an environmentally sustainable manner.
  - Safety and Health – To promote a healthier and more active SEStran area population.

- **Tay Cities Deal**; which brings together public, private and voluntary organisations in the council areas of Angus, Dundee, Fife and Perth & Kinross to deliver a smarter and fairer region. It will see funding of up to £300 million for the region from the UK Government, the Scottish Government, and regional partners over a period of 10-15 years. It seeks to:
  - grow the base of knowledge-led businesses
  - support more businesses to trade internationally
  - attract investment
  - attract and retain talented people
  - improve connectivity to, from and around the region
  - increase economic participation
  - reduce inequalities.
- **Local Transport Strategies**; which set out the transport objectives and priorities for the Local Authorities within the Tay Cities Region.
- **Other Regional and Local Policy Documents**; such as the Strategic Development Plan, and Local Development, City, Economic Plans and Strategies which set out non-transport-specific objectives and priorities, but for which transport plays a key role in both the enabling and delivery of their outcomes.

In addition to the four Priorities presented above, the NTS2 supports the adoption of a Sustainable 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.

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.

A full list of reviewed documents is contained in Appendix B.

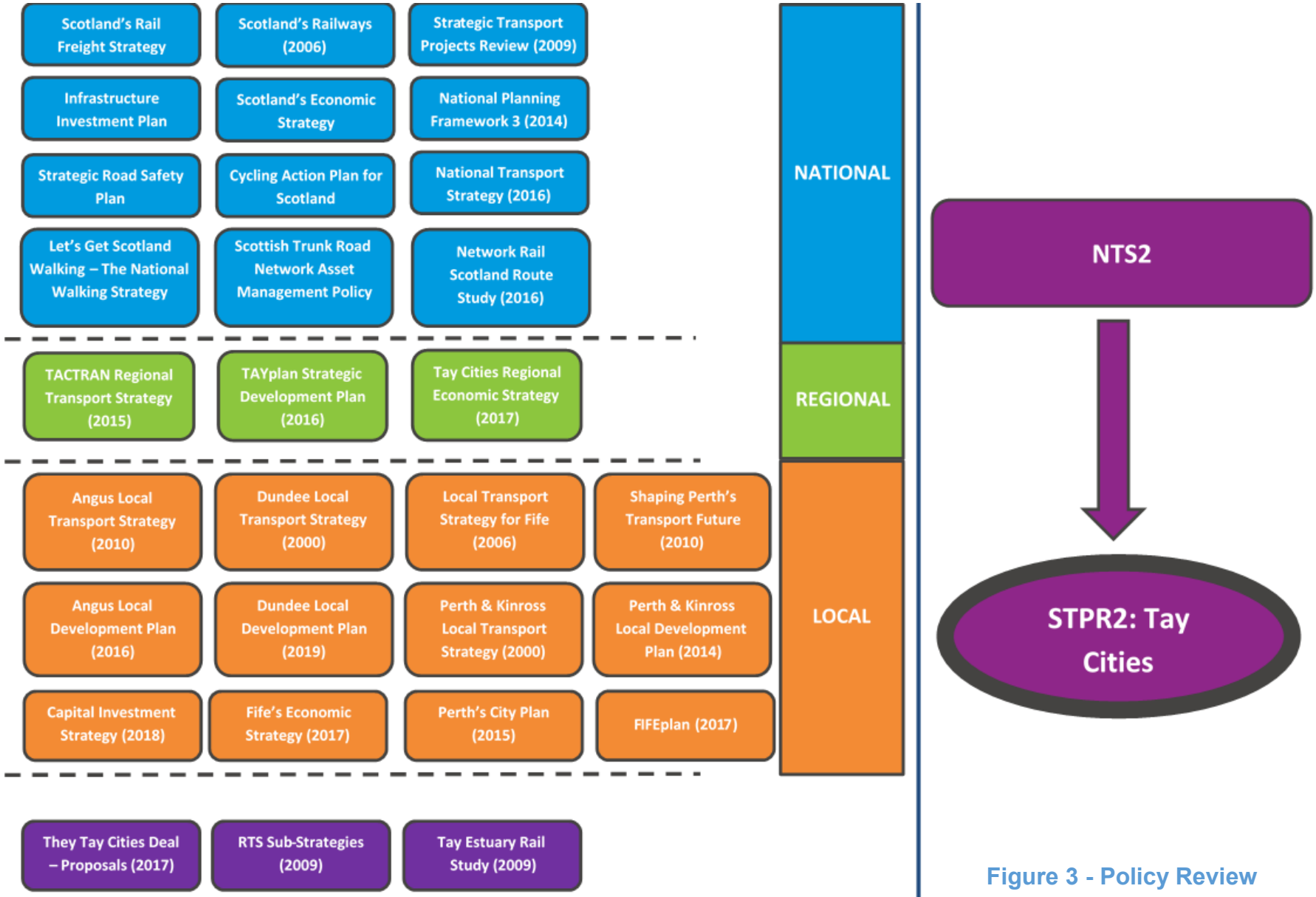


Figure 3 - Policy Review

2.2. Geographical Context

The Tay Cities Region comprises a broad mix of urban and rural settlements and areas, including examples of each of the Scottish Government's 6-fold urban-rural classifications: a Large Urban Area (Dundee), Other Urban Areas (including Perth, Arbroath), Accessible Small Towns (e.g. Cupar, Auchterarder, Brechin), Remote Small Towns (e.g. Blairgowrie, Crieff) and the remaining areas classed as either Accessible Rural or Remote Rural[3].

Of the region's total population, 32% live in large urban areas, 26% in other urban areas, 11% in accessible small towns, 3% in remote small towns, 23% in accessible rural areas and 4% in remote rural areas.

Figure 4 below shows the rural/urban makeup of the region.

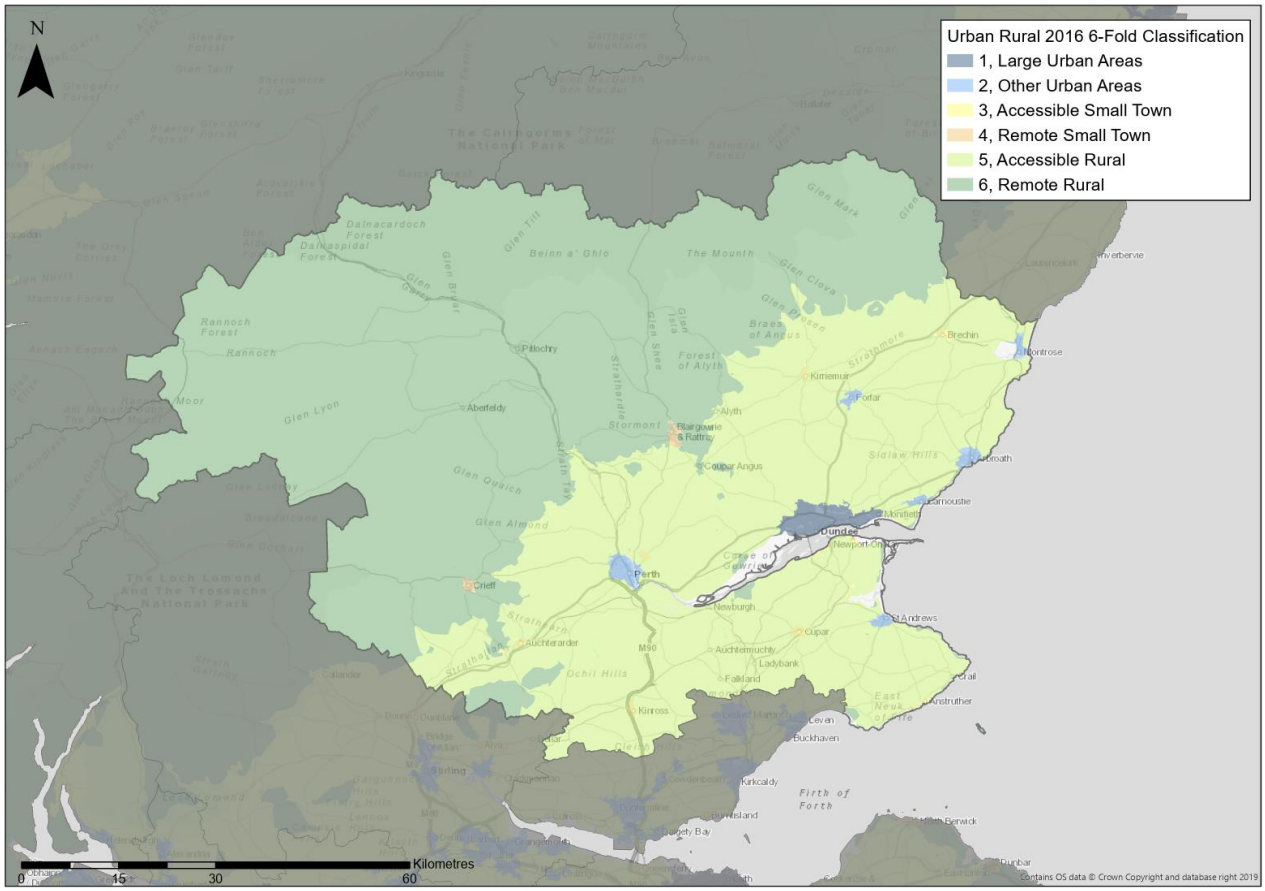


Figure 4 – Scottish Government Urban Rural 2016 6-fold Classification (click image to enlarge figure)

2.3. Socio-Economic Context

2.3.1. *Benchmarking*

To compare the performance of socio-economic indicators for the region, benchmark categories were created using the urban rural classification. The classification defines the urban and rural areas across Scotland, based upon two main criteria: population and

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

accessibility. This area classification is split and defined across categories ranging from large urban area to remote rural, where the geographies of local authorities are divided up in percentage terms across these categories. The local authorities selected are considered the most representative for each of the benchmark categories, generally being the top five or six local authorities within that related category.

The four benchmark categories are:

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

2.3.2. *Population*

The Tay Cities Region has a population of 491,306 (9.0% of the total population of Scotland) based on 2018 mid-year population estimates from National Records Scotland (NRS). Settlement sizes taken from NRS mid-2016 population estimates are presented in Figure 5, demonstrating that whilst Dundee and Perth are the largest settlements, many of the region's people live in smaller urban areas. Many are along the Dundee-Carnoustie-Arbroath-Montrose coastal corridor, but the region also has towns in more rural settings, such as Forfar and Blairgowrie to the north; and Cupar and St Andrews to the south of the Tay.

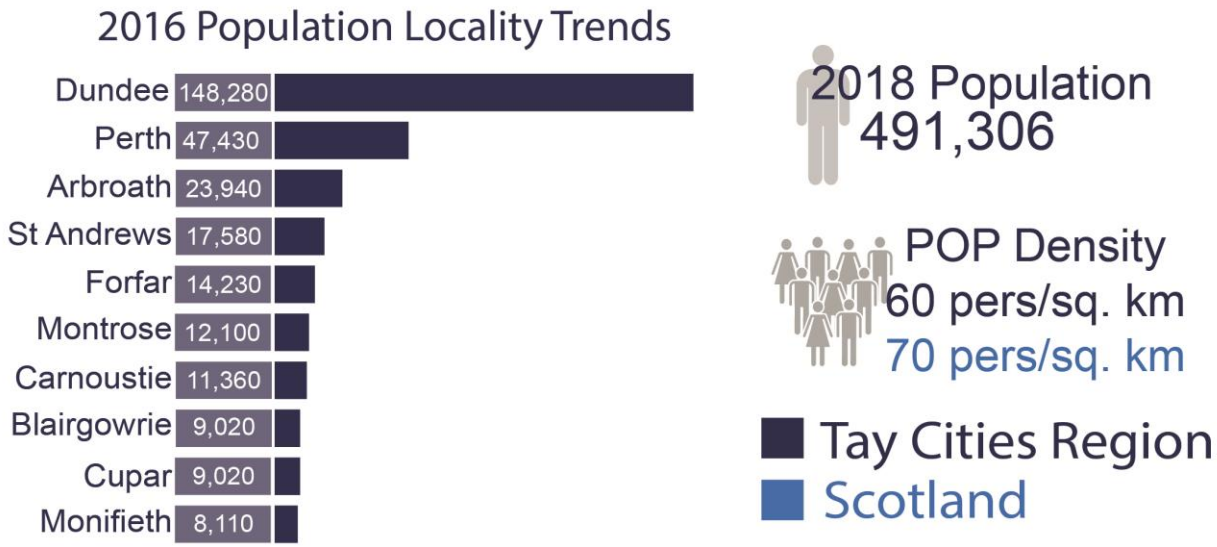
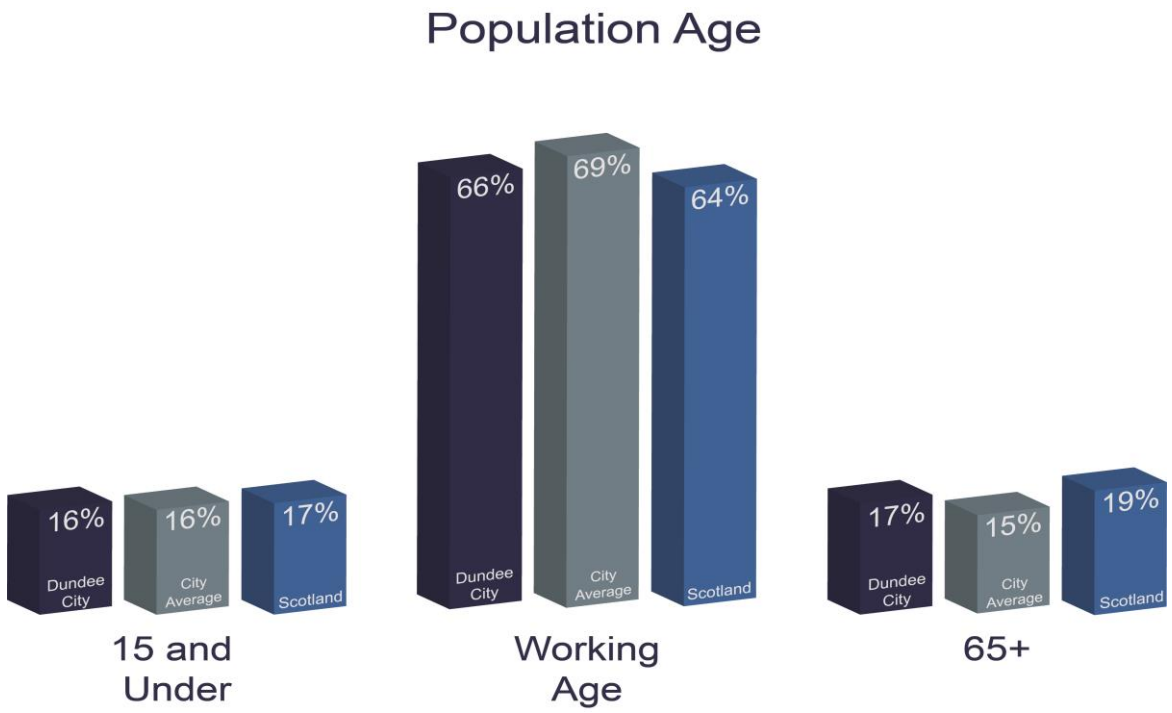


Figure 5 - Tay Cities Region Largest Settlements by Population 2016 (NRS); and 2018 Population and Population Density (NRS)

The Tay Cities Region (outwith Dundee City) has a smaller working age population than the Scottish Regional average; there are 2% fewer people aged 15 and under and 4% more people aged over 65, which indicates an older population demographic in the region than for the rest of Scotland, as a whole. Figure 6 shows that the Tay Cities Region has an older population than comparable areas.



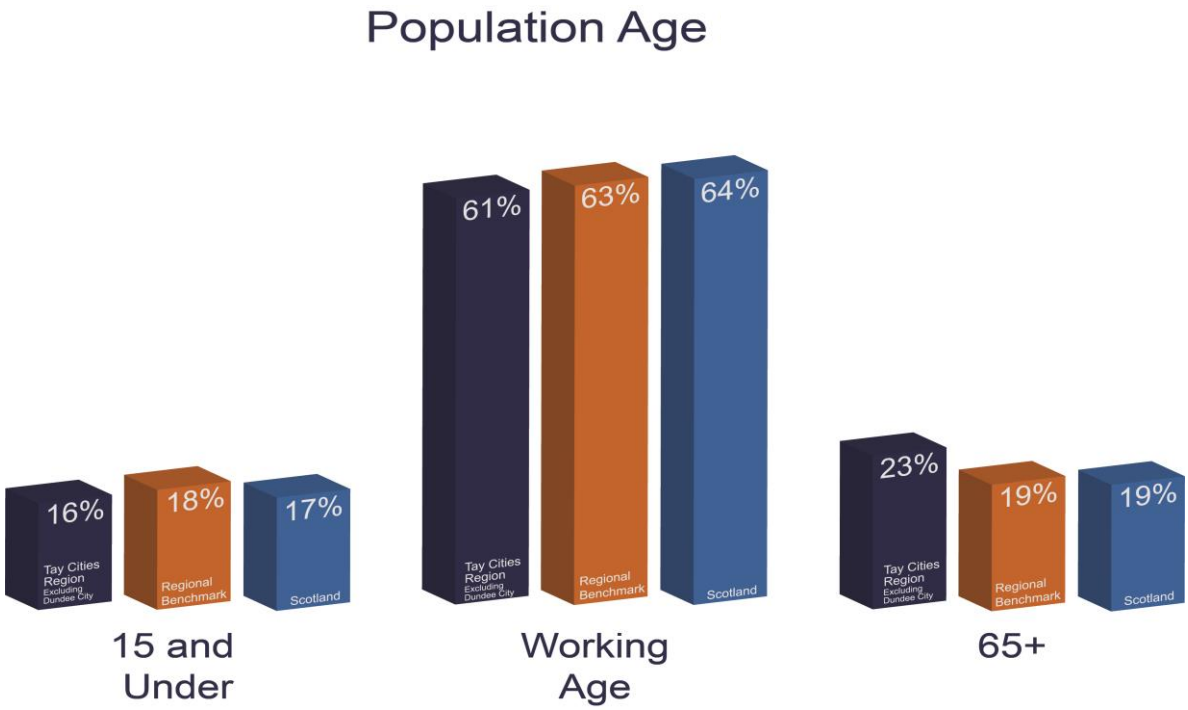


Figure 6 - Top: Dundee City percentage of total population by age; Bottom: Tay Cities Region (excluding Dundee) percentage of total population by age (NRS 2018)

Dundee City (the Council area) has a slightly lower proportion of people of working age than other Scottish Cities (66% compared with 69%), and a higher older population percentage than the Scottish Cities average.

Since 2011, there has been population growth in the region, but this has been at a much lower rate than the Scottish Cities and Urban benchmarks.

2.3.3. *Travel to Work – Mode Share*

Travel to work mode share is a key metric in providing context for the key transport trends of the region. Figure 7 provides the mode share for travel to work across the region based on Census 2011 information. Car is the most popular mode of travel to work in the region as a whole and represents 60% of the share in Dundee City; more than 10% greater than the Scottish Cities benchmark. As a region, the car mode share in Tay Cities is lower than the national average. Walking and cycling shares are greater than the national average, especially in Perth; and bus and rail mode shares are lower than other benchmarks. Notably, there is a higher proportion of people who work from home across the region than the national average.

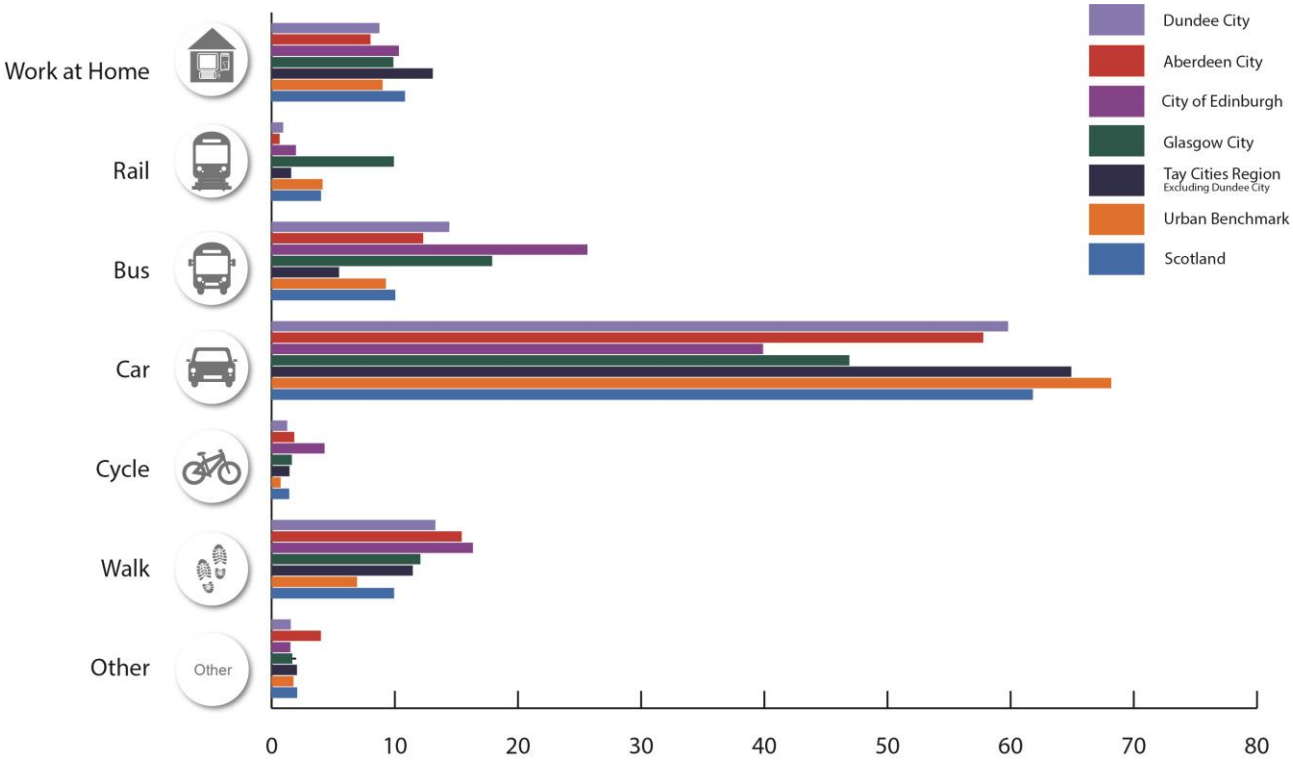


Figure 7 - Travel to work mode share for Tay Cities Region and benchmarks

2.3.4. *Travel to Work – Distance Travelled*

Figure 8 shows the percentage of the working population that travel within distance bands (0-10km, 10-30km etc.) to work. There is a higher than average proportion (15.3% in Dundee City and 16.4% in the wider Tay Cities Region) of people travelling very short distances to work in the region (under 2km), slightly higher than the Scottish Cities and Urban benchmark, as well as the national average.

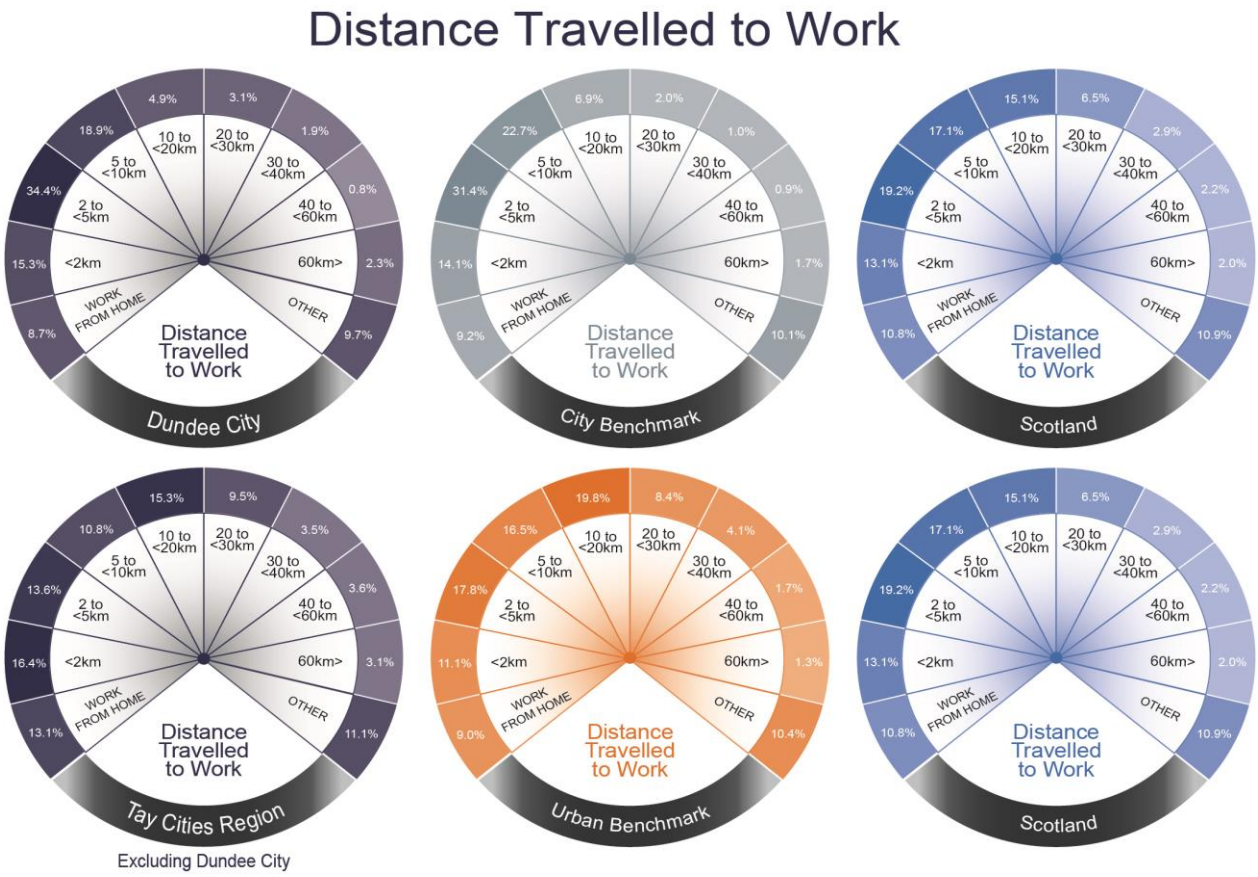


Figure 8 - Percentage of working population distance travelled to work (2011 Census)

The majority of working population from Dundee City (69%) travel less than 10km to work, which is generally in line with the Scottish Cities benchmark (68%). The working population outside of Dundee City in the Tay Cities Region travelling over 30km to work is 10%, which is higher than the Urban benchmark (7%).Within the region, Angus has the highest proportion of very short distance travelled to work (less than 2km), and also the highest proportion of very long distance travelled to work (60km and over). Perth & Kinross had the highest proportion of people working from home. The most common distance travelled to work by residents of Perth & Kinross and Dundee City was 2km to 5km. The most common distance travelled to work by residents of North Fife was between 10km and 20km.

Figure 9 illustrates the travel to work movements between local authorities within the Tay Cities Region[4], as well as movements to and from neighbouring regions to the north/north east and south/south east. In total, 76% of residents of the Tay Cities Region (including data for all of Fife) work within their own local authority boundary, this being highest in Dundee (85%). Thirteen percent of the region's population work within another of the Tay Cities Region authorities, and 11% work outwith the Region. However, journeys from Fife (presumably mostly from the South of Fife) to Edinburgh skew these regional figures: of residents of Angus, Dundee City and Perth & Kinross, 7% work outwith the Tay Cities Region.

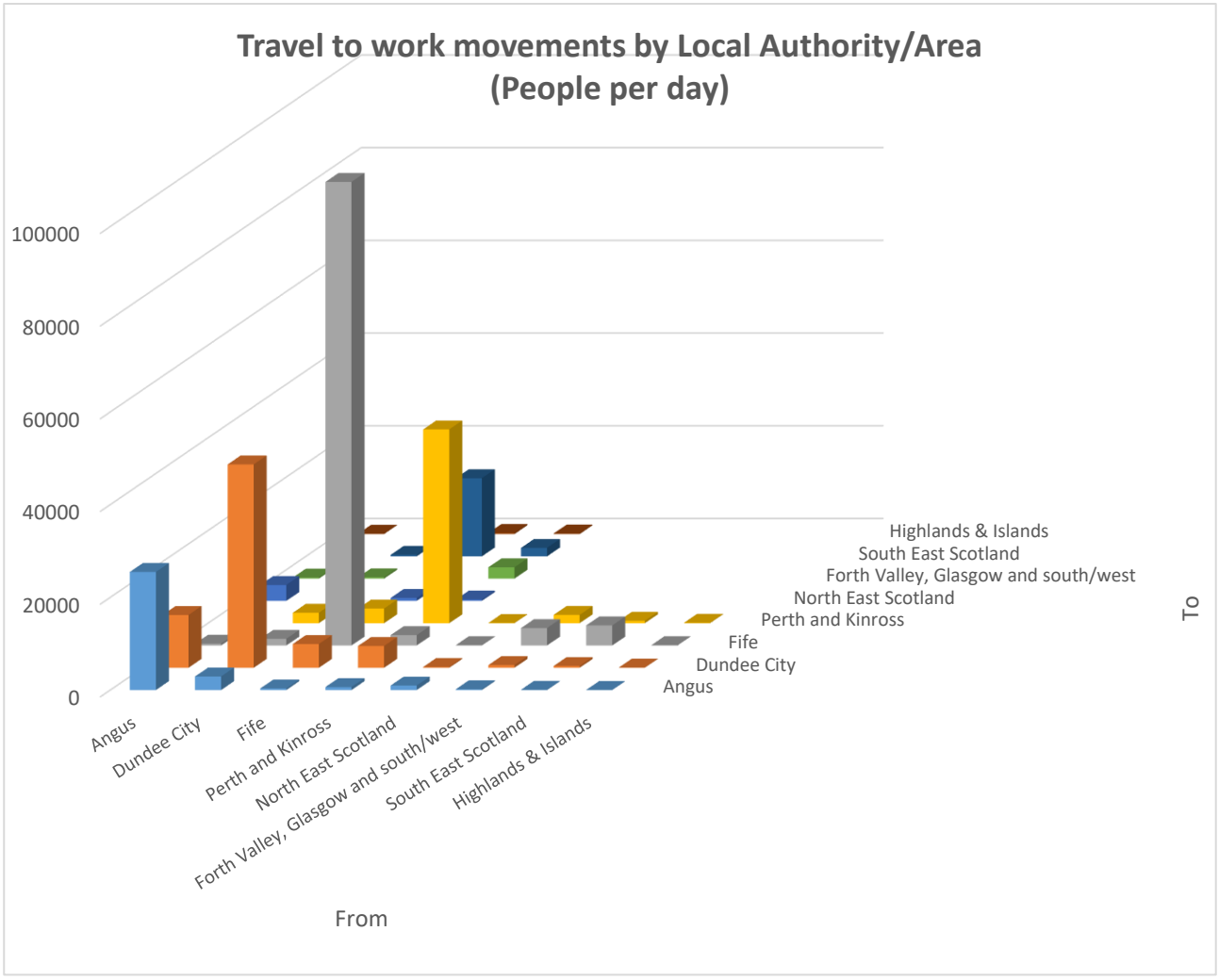


Figure 9 - Travel to Work by Local Authority (Census 2011)

As noted, the majority of travel to work is contained within each respective local authority area, especially in Dundee City where 85% of the population works within the local authority boundary. Table 1 shows the proportions of work locations of each authority's residents more clearly. The most notably cross-boundary flow is from Angus to Dundee City; over a quarter of Angus' population work in Dundee City.

[4] Data for Fife shows all of the Council area: commuting to South East Scotland area from that part of Fife which is in the Tay Cities Region is anticipated to be much lower

Table 1 - Travel to Work Percentage of Residents Working in Area (Census 2011)

WORKPLACE AREA	HOME LOCATION AUTHORITY			
	Angus	Dundee City	Fife	Perth & Kinross
Angus	60%	6%	0%	1%
Dundee City	27%	84%	4%	9%
Fife	1%	3%	78%	4%
Perth & Kinross	3%	4%	2%	77%
North East Scotland	8%	1%	0%	1%
Forth Valley, Glasgow and south/west	1%	1%	3%	5%
South East Scotland	0%	1%	13%	3%
Highlands & Islands	0%	0%	0%	0%

2.3.5. *Travel to School – Mode Share*

Hands-Up Survey Scotland data[5] show that between 53% and 57% of primary school pupils travel to school by active modes (walking, cycling or scooting) in each of the Tay Cities Region's authorities, in each case a little higher than the national average of 52.5% (data for 2018). However, the region shows wide variances in the proportion of secondary school children that travel actively: 61% in Angus and 52% in Dundee City but 39% in Perth & Kinross and 38% in Fife[6] compared to the national average of 44%.

2.3.6. *Household Income and Transport Expenditure*

In 2018 the median full-time gross weekly earnings in Scotland was £563.20. Within the Tay Cities Region all local authority areas were below the national average, with north east Fife, at 14.6% below average, performing the worst in the region and Dundee City performing the best, at 1.0% below average[7]. In Scotland an average of 14% of household spending was on transport and travel between 2016 and 2018, equating to an average weekly expenditure of £68.20[8].

Transport expenditure in the Tay Cities Region is varied. In both cities and larger towns, such as St Andrews and Montrose, transport expenditure is generally comparable to the Scottish average, with the majority of urban areas ranging between 9% and 16% of household spending. In deeper rural areas of Perth & Kinross, Angus and north east Fife transport expenditure is generally high, reaching 20% of household income in areas.

[5] https://www.sustrans.org.uk/our-blog/projects/2019/scotland/hands-up-scotland-survey/
[6] This is for all of Fife. Disaggregated data for north east Fife only is not available
[7] ONS Annual Survey of Hours and Earnings
[8] Scottish Transport Statistics 2018

2.3.7. *Economic Activity*

Economic activity refers to an estimation from Census 2011 data whether usual residents aged 16 to 74 were in work or actively looking for work. Annual economic activity estimates are produced by the Office for National Statistics.

Dundee City economic activity levels were 71.7% in 2018, a drop of 2.9% from 2014, and 3.5% lower than the Scottish Cities benchmark. Economic activity for the Tay Cities Region excluding Dundee City was 79%, a drop of 0.3% from 2014, and 0.3% higher than the national average.

The average employment rate in Dundee City was 67%, which was 3.6% lower than the Scottish Cities benchmark and noticeably lower than the rest of the Tay Cities Region which has an employment rate of 76%.

The Tay Cities Region (including all of Fife, as disaggregated data for North Fife is not available) contributed 16% of Scotland's total benefits claimants (the area has 14.5% of the country's population). The number of claimants in the area increased by 4.4% between 2014 and 2018. Fife had the highest proportion of benefits claimants in the region (9%) in 2018, followed by Dundee City (4%) and Perth & Kinross (1%).

Figure 10 illustrates the industry sector disaggregation for employed residents in the Tay Cites Region according to the 2017 UK Business Register and Employment Survey (BRES). The graph on the left indicates the sector breakdown for Dundee City, as well as the Scottish Cities benchmark and national average; the graph on the right highlights the performance of the region, excluding Dundee City, against the regional benchmark and national average.

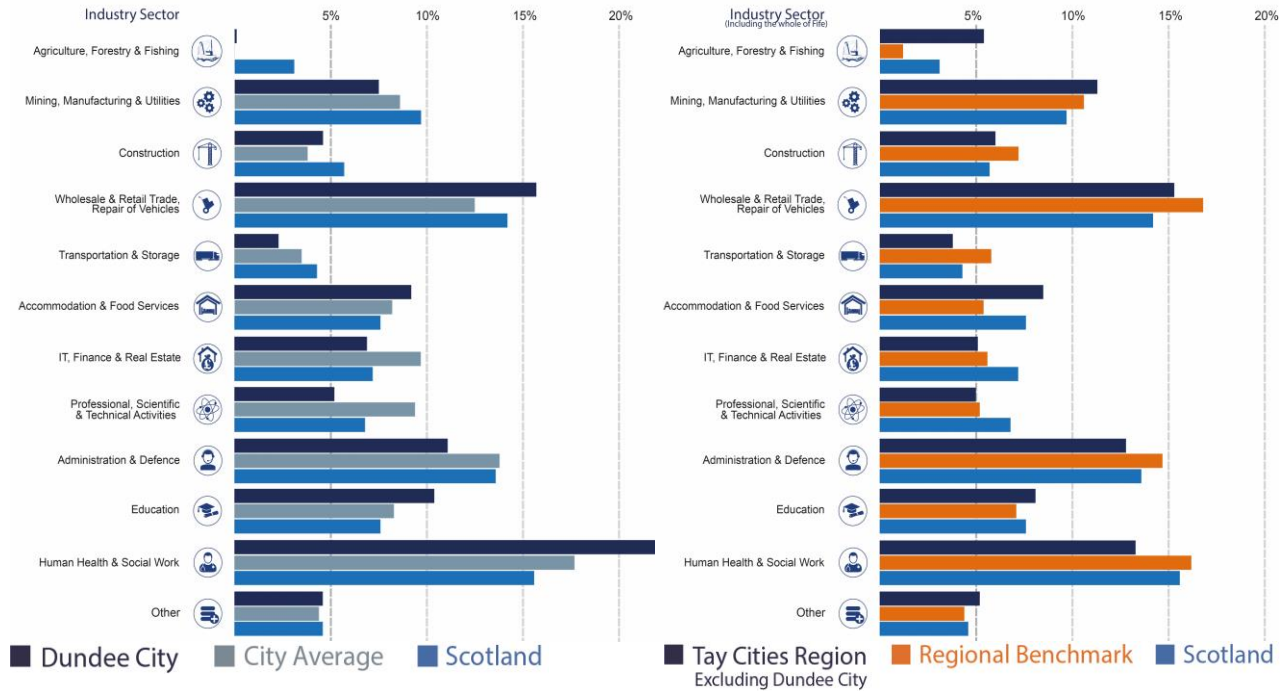
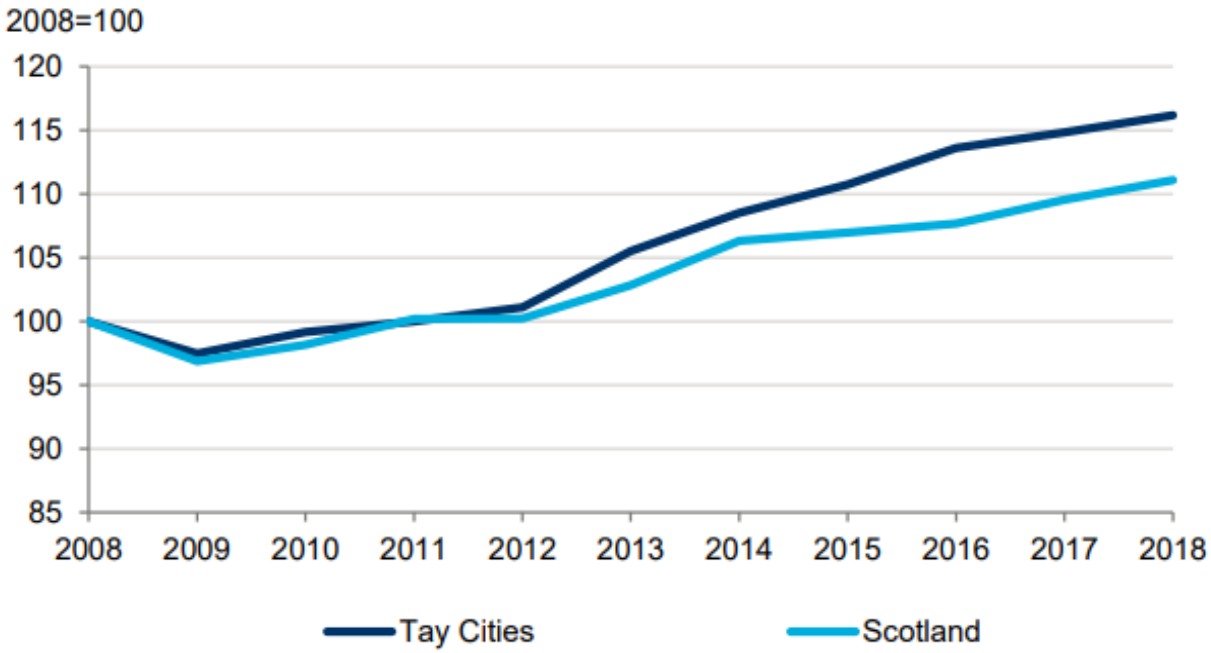


Figure 10 - Percentage of people working in each industry sector for Tay Cities Region (BRES 2017)

In the Tay Cities Region (but excluding Dundee), the largest percentage of people work in the Wholesale/Retail trades (16%), followed by Health and Social Work, and Mining/Manufacturing/Utilities both at 14%. Employment patterns in Dundee City are rather different than the rest of the region: the largest sector is Health & Social Work at nearly 23%, which is 5% higher than the Scottish Cities average. This is followed by Wholesale/Retail Trades (15%), Education (11%) and Admin & Defence (11%). Dundee City has a smaller percentage of people working in sectors such as Information Technology, Finance and Real Estate (~7%) and Professional, Scientific and Technical Activities (<5%) than its city benchmark.

Total Gross Value Added (GVA) by the Tay Cities Region[9] in 2016 was £17,132 million, which was 13% of Scotland's GVA (for 9% of the country's population). Regional GVA increased by 24.0% between 2011 and 2016, which was 5.6% more than the national benchmark increase. Regional GVA per head was £21,802 in 2016, which was an increase of 22.4% in the same period.

Figure 11 shows the Tay Cities regional GVA performance compared to that of Scotland between 2008 and 2018, illustrating that Tay Cities Region has been outperforming the national average growth consistently since 2012.



Source: Oxford Economics

Figure 11 - Index of GVA, Tay Cities Region and Scotland, 2008-2018[10]

[9] This data is presented for the region as defined for STPR2 (i.e. Angus, Perth & Kinross, Dundee City and North East Fife)

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

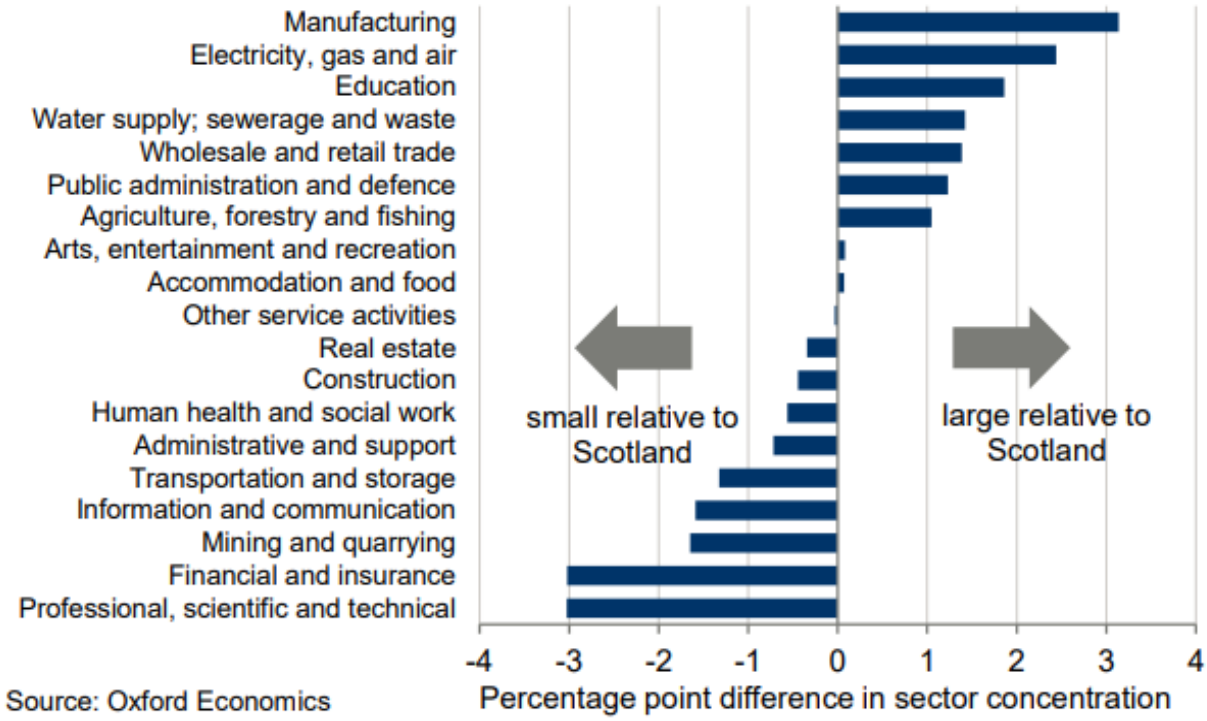


Figure 12 - Sector GVA share, Tay Cities Region and Scotland, 2008 - 2018

Figure 12 highlights the sectoral split relative to Scotland. This demonstrates the relative importance of manufacturing, energy and education to the region's economy, and that the region has a limited concentration of Scotland's professional, scientific and financial economy.

2.3.8. *Access to Employment*

Figure 13 illustrates the accessibility in the region to key employment centres by scheduled bus and rail services during a typical weekday morning between 6am and 10am.

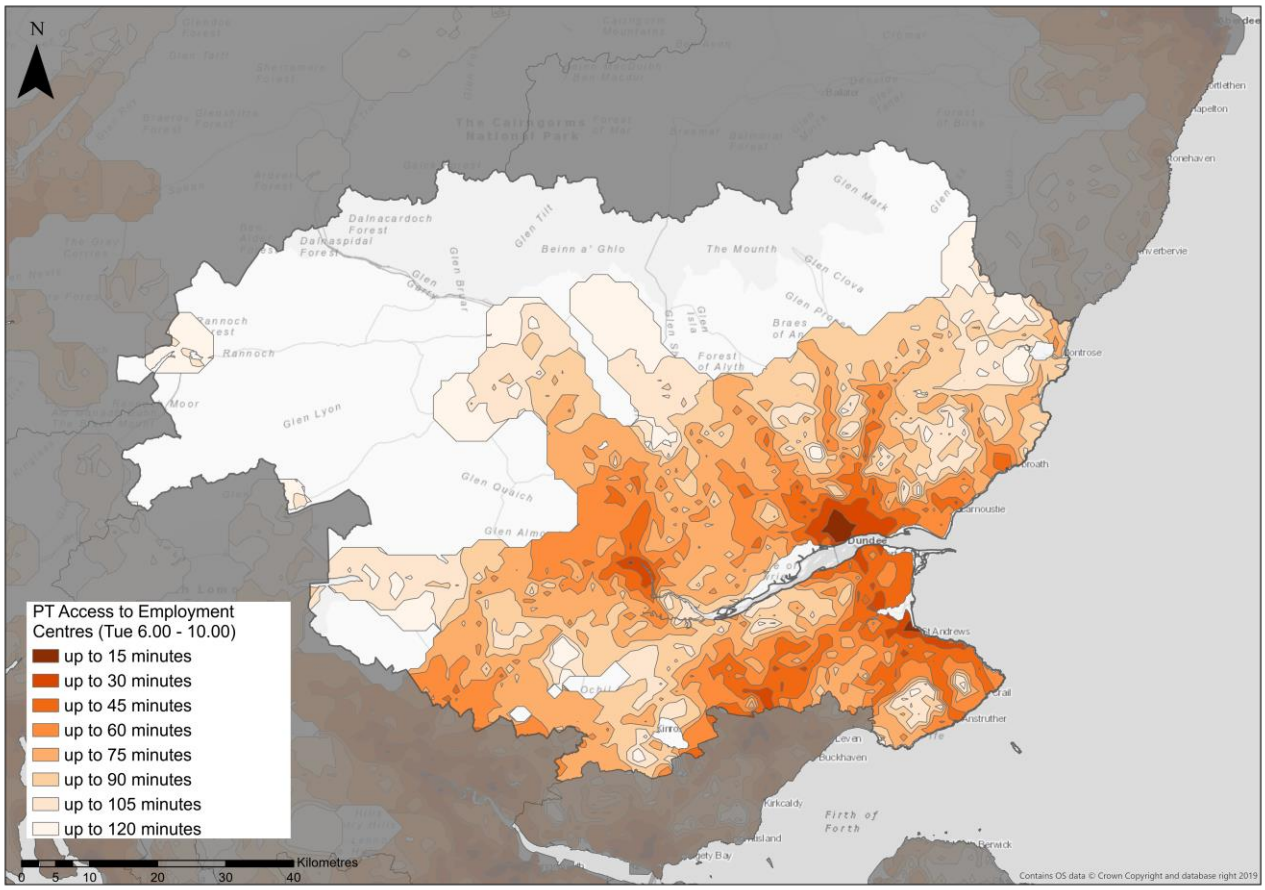


Figure 13 - AM journey time isochrones to key employment areas, by public transport (click image to enlarge figure)

Approximately 82% of the population can access employment centres within a 60-minute journey times by public transport. In Perth and Dundee City access is generally good, with most urban and suburban areas able to access employment centres with a journey time of 30 minutes or less. In North East Fife access is not as good as Perth and Dundee City, but approximately 95% of the population can access employment opportunities within a 60-minute journey time. In rural Angus and Perth & Kinross accessibility is more varied, with approximately 70% and 68% of the population respectively able to access employment centres within a 60-minute journey time. In the deeper rural areas, access to key employment sites by public transport often takes longer than two hours or is impossible using scheduled services.

2.3.9. *Access to Education*

Figure 14 illustrates journey times to further and higher education centres by scheduled bus and rail during a typical weekday morning between 6am and 10am. It shows that most residents of the urban areas of the region have reasonable access to educational opportunities, but that many residents of rural locations do not and highlights the geographic inequity of accessibility.

Within the region approximately 90% of the population can access further and higher education within a 60-minute journey time by public transport. Dundee city has the highest percentage of population able to access higher and further education within 60 minutes by public transport at approximately 99%, while Perth and Kinross is the lowest at approximately 75%.

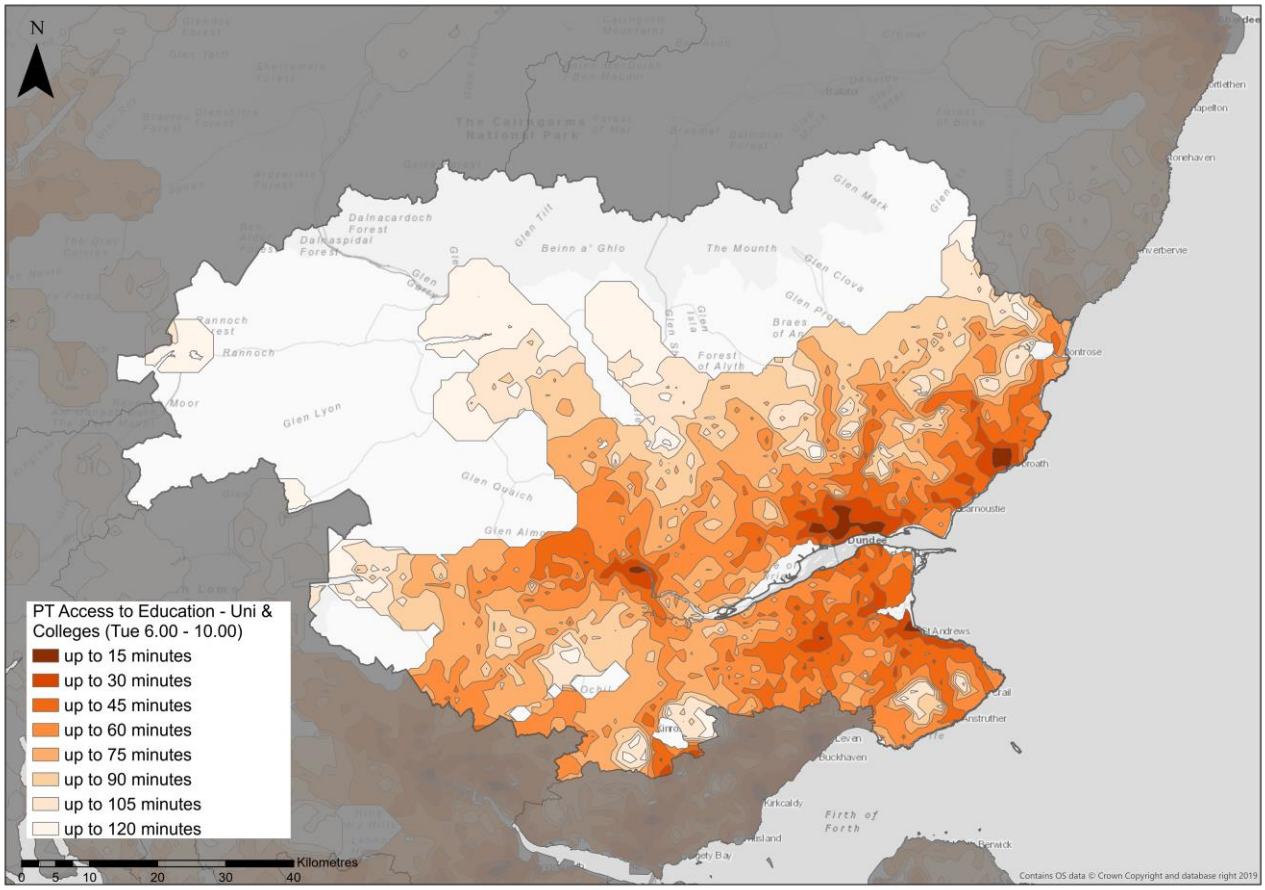


Figure 14 - AM period journey time isochrones to further and higher education, by public transport (click image to enlarge figure)

2.3.10. *Deprivation and Health*

The Social Index of Multiple Deprivation (SIMD) demonstrates the socio-economic issues experienced in the Tay Cities Region. In the region, Dundee City is the local authority with the highest percentage of data zones that are deprived, with 36.7% of its datazones in the 20% most deprived nationally. North East Fife had the lowest percentage with 1.0%. Figure 15 illustrates the SIMD 2016 datazones in the Tay Cities Region.

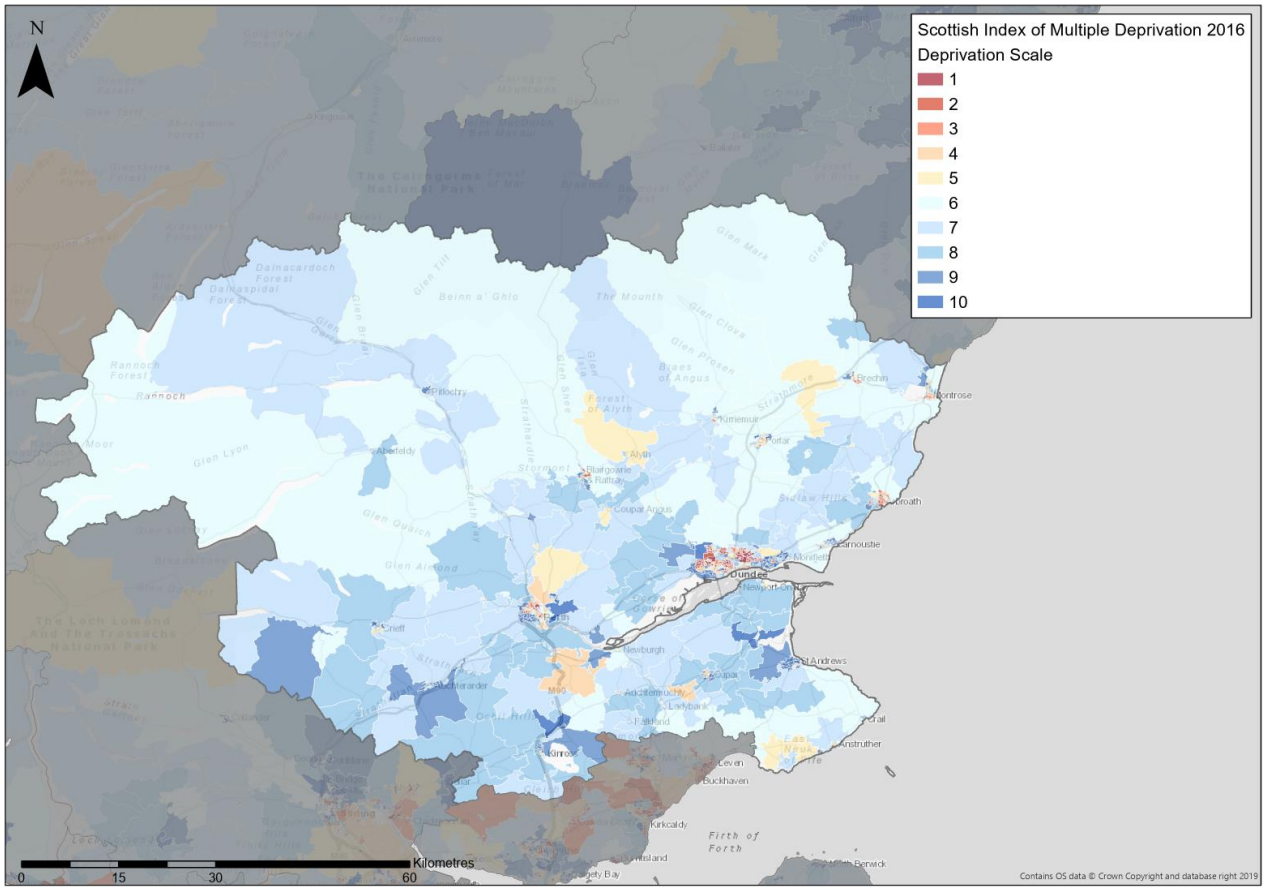


Figure 15 - SIMD datazone locations for Tay Cities region, coloured by decile ranking (click image to enlarge figure)

Within the region deprivation is generally low; 14.7% (92 zones) of the region's data zones were within the 20% most deprived nationally and 7.5% (47 zones) were within the 10% most deprived. As illustrated in the map, pockets of deprivation are mostly in Dundee City, but there are others in parts of Arbroath, Brechin, Blairgowrie, Cupar, Forfar and Montrose.

When compared to Scottish Cities, Dundee City has the second highest proportion of data zones in deprivation, behind Glasgow City. Just over one third (69 zones) of Dundee City datazones were within the 20% most deprived nationally and 21.8% (41 zones) were within the 10% most deprived.

The Tay Cities Region has a relatively high proportion of children living in poverty (after housing costs) at 24.7% (End Child Poverty, 2019) while 20.8% of children are in families with limited resources (Scottish Government, 2010).

SIMD Health rankings, as displayed in Figure 16, indicate that health quality throughout the region is varied. In Dundee City, 16% of the datazones within the region are ranked in the lowest 10% for health in Scotland, while in contrast North East Fife, Angus and Perth &

Kinross have 0%, 1% and 2% respectively. Twenty-five percent of North East Fife's datazones are in the top decile (i.e. healthiest) in Scotland, while 4%, 8% and 10%, respectively of those from Dundee City, Perth & Kinross and Angus are.

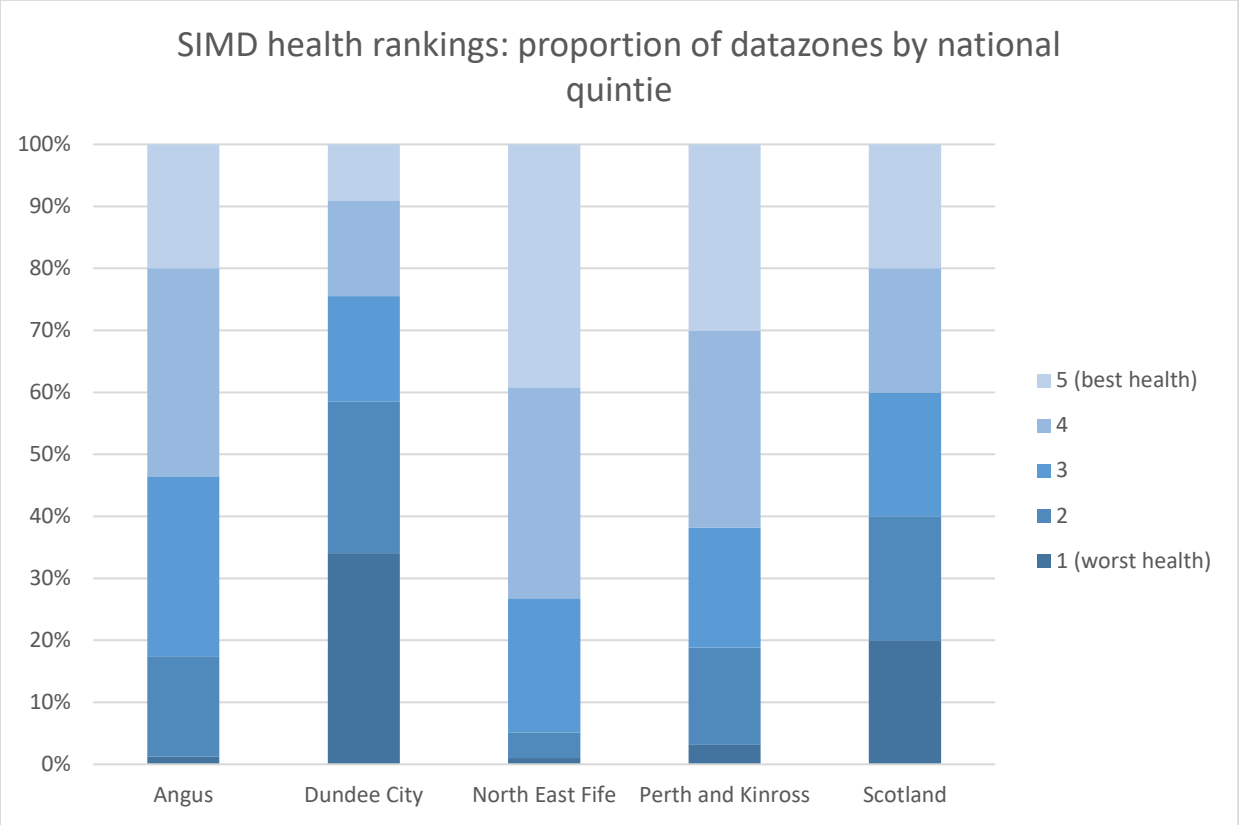


Figure 16 - SIMD Health datazones in Tay Cities Region

Figure 17 illustrates accessibility to healthcare (hospitals and GP surgeries) in the region by public transport. Access to healthcare facilities from most towns and the two cities in the region is within a 30-minute journey by bus or train. However, there are large areas of rural Angus and rural Perth & Kinross which cannot access healthcare within a two-hour journey.

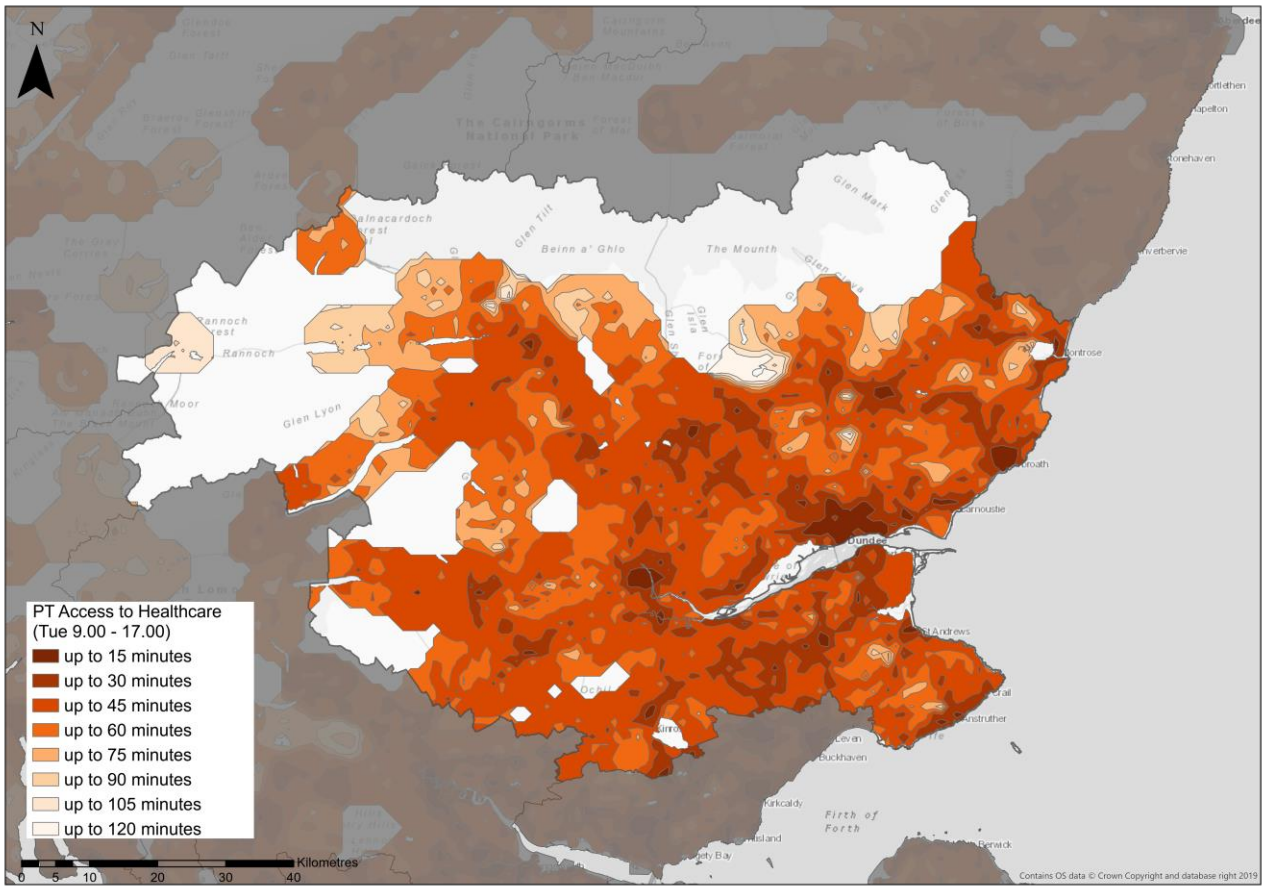


Figure 17 - AM period journey time isochrones to healthcare (hospitals and GPs), by public transport (click image to enlarge figure)

The Scottish Household Survey data includes information on the proportion of the population of each local authority area which has a long-term physical or mental health condition, which can be used as a proxy as an indicator of health outcomes, and also of the ability of people to use all modes of transport.

Each of the Tay Cities Region's local authorities have significantly higher proportions of their populations that have a long-term physical or mental health condition than the Scottish average of 22% (Angus 27%, Perth & Kinross 28%, Fife 29% and Dundee City 32%). This highlights that particular consideration in the planning and delivery of transport services in the region is needed.

According to the 2011 Census data (NRS, 2011) 19.8% of the population in the region's day-to-day activities are limited a little or a lot by their disability (including data for all of Fife). Applying this proportion to the number of residents of the Tay Cities Region, around 97,000 residents have a limiting disability.

2.4. Environmental Context

2.4.1. *Environmental Designations*

Tay Cities Region has many locations with environmental designations. These include:

- 194 Sites of Special Scientific Interest
- 11 Special Protection Areas
- 22 Special Areas of Conservation
- 4 National Scenic Areas
- A section of the south of the Cairngorms National Park is located within Perth & Kinross and Angus local authorities.

As seen in Figure 18 the majority of the designations are situated towards the north/north west of the region and around the coast and Tay Estuary.

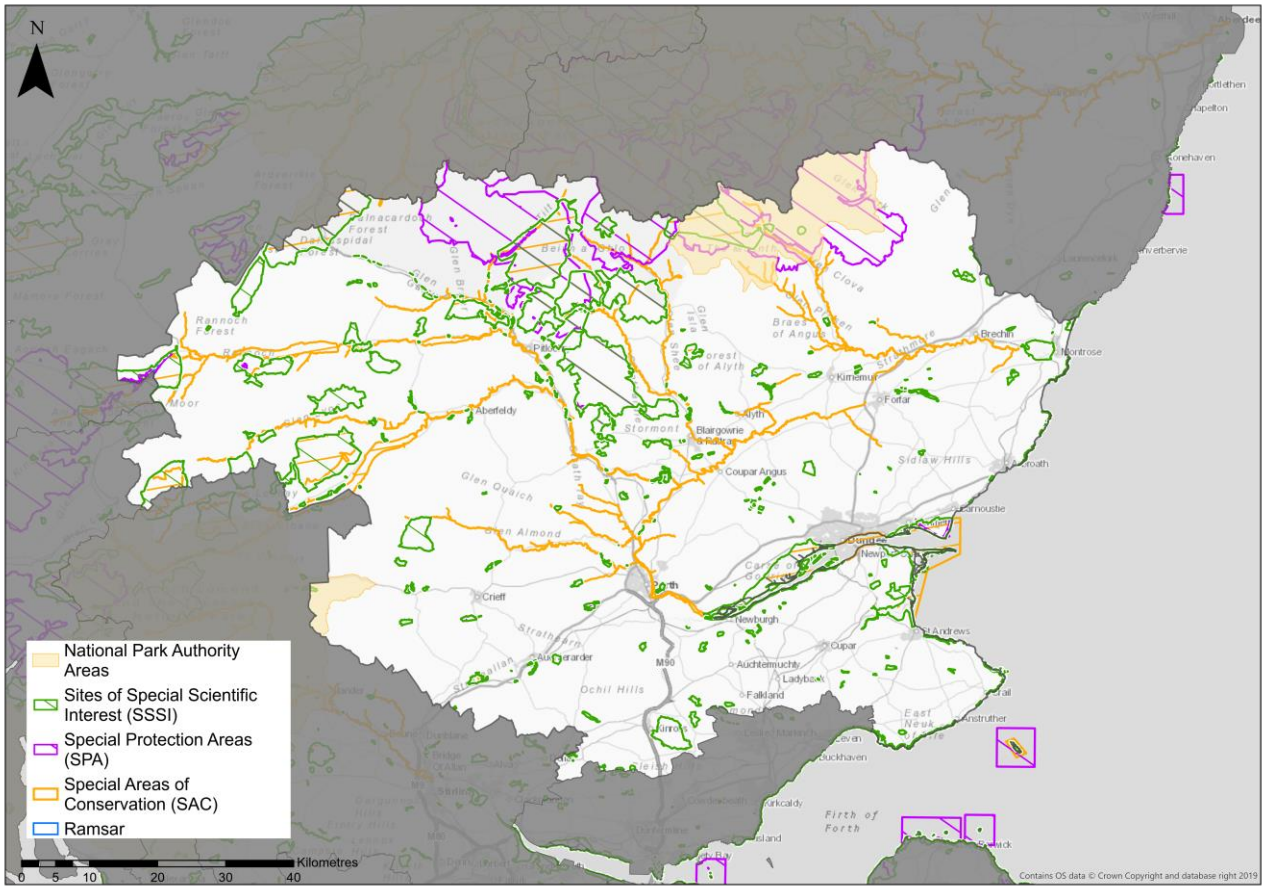


Figure 18 - Environmental designations map for Tay Cities Region (click image to enlarge figure)

2.4.2. *Carbon Emissions*

Net carbon emissions per capita, and the proportion of carbon emissions from transport, in 2017 are outlined in Table 2.

Table 2 - Net Carbon Emissions Per Capita[11]

AREA	PER CAPITA CARBON EMISSIONS, 2017, KT CO_2	PROPORTION OF TOTAL EMISSIONS FROM TRANSPORT
Perth & Kinross	6.8	48%
Angus	5.6	39%
Fife	5.2	29%
Dundee City	4.4	31%
Scotland average	5.0	32%

Figure 19 shows that total carbon emissions in the region (from all sources) have fallen broadly in line with the Scottish average in recent years, (emissions in 2017 in both Scotland and the region were both estimated to be around 68% of the 2005 totals). However, the proportion of emissions from transport in the region is higher than the national average and becoming more so (from being two percentage points higher in 2005 to four percentage points higher in 2017).

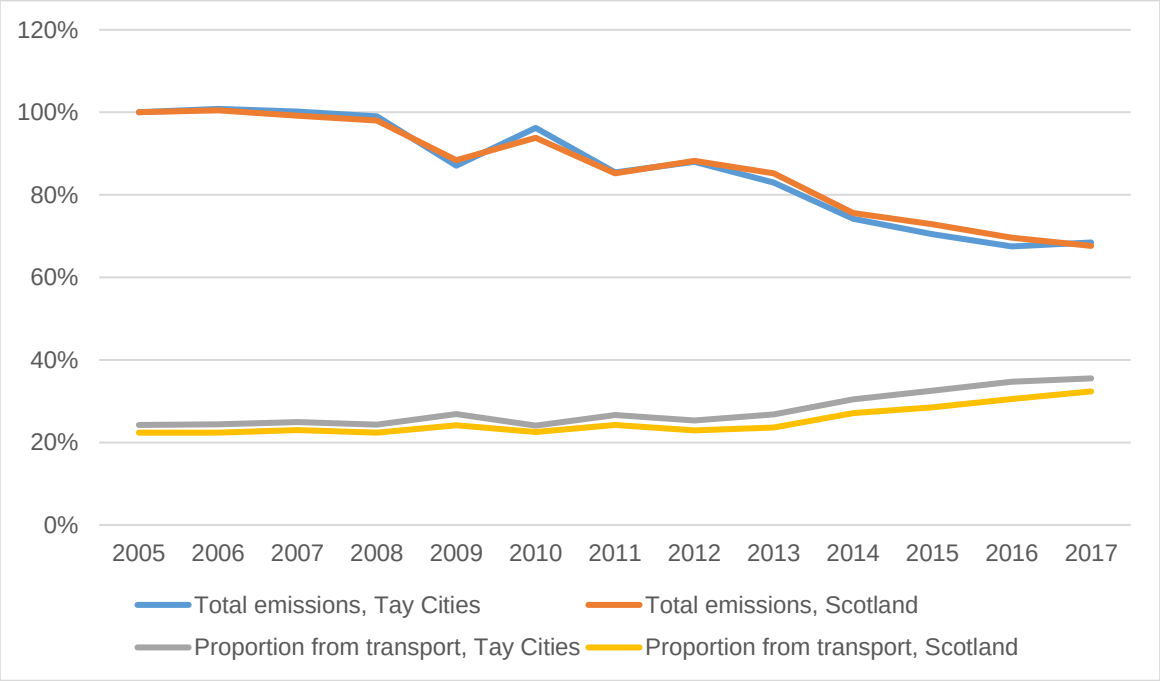


Figure 19 - Regional and national carbon emissions by year

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

2.4.3. *Air Quality*

There are four Air Quality Management Areas (AQMAs) in the region, located in the cities of Dundee and Perth and also in Cupar and Crieff. Each has been declared because of concerns regarding emissions of both Nitrogen Dioxide and Particulate Matter, and transport is a significant source of local pollution in all instances.

2.5. Transport Context

Figure 20 shows the key transport network in the region, including the National Cycle Network (NCN), rail lines and the trunk road network. It demonstrates that Tay Cities Region has a wide-ranging transport network, with many strategic connections routing through, notably routes linking the Central Belt and further south to the north and north east of Scotland.

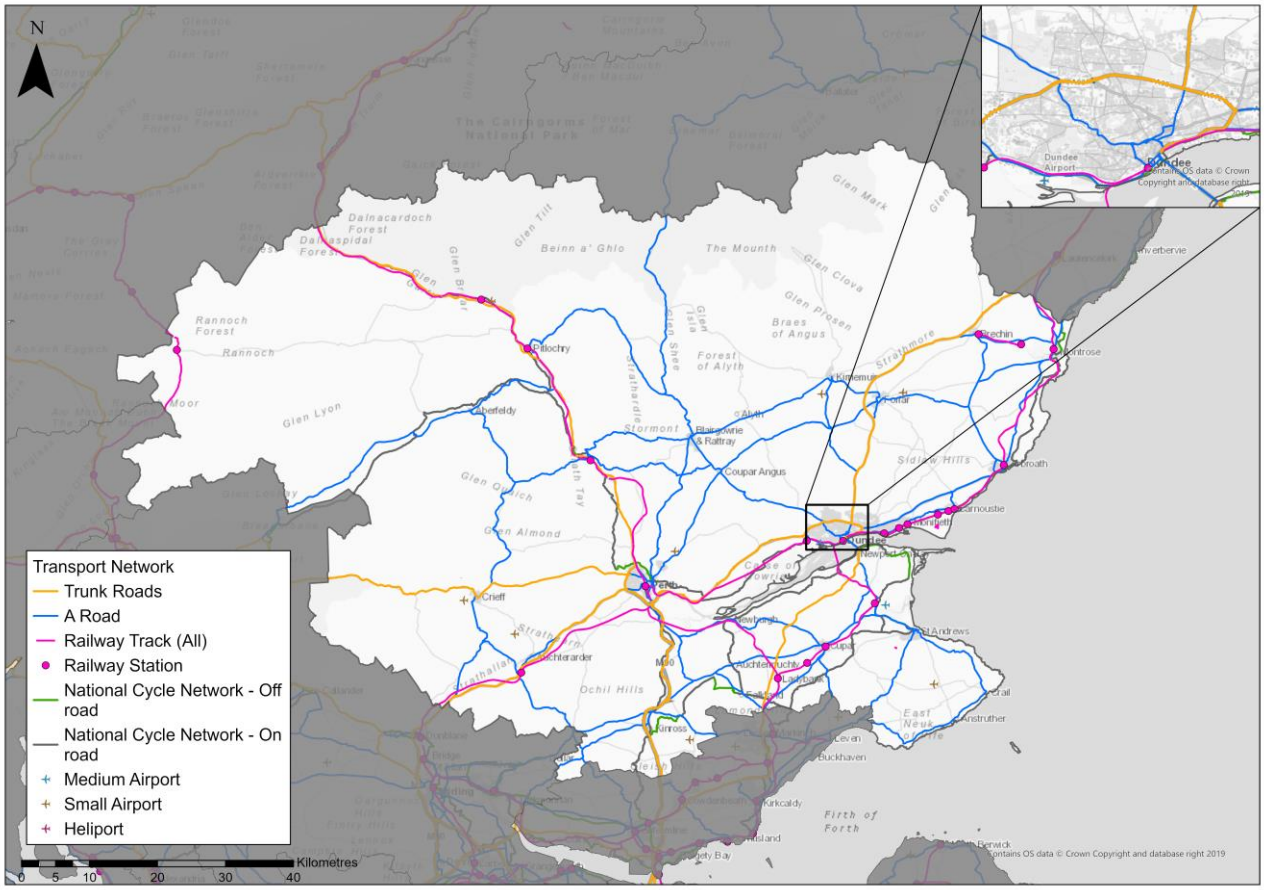


Figure 20 - Tay Cities Region Transport Network (click image to enlarge figure)

2.5.1. *Active Travel Network*

There is a diverse range of off road and on road cycle routes, including sections of the National Cycle Network:

- NCN1 - from Kinross – North Fife – Dundee (via Tay Bridge), then follows the coast through to Arbroath and Montrose.
- NCN77 - between Dundee and Pitlochry via Perth.
- NCN775 - from NCN1 in Milnathort to Perth where it links with Route 77.
- NCN776 - links Route 1 in Falkland with Route 777 in Newburgh.
- NCN777 - along the south side of the Tay Estuary, linking Route 776 in Newburgh with Route 1 at Newport-on-Tay.

There are also other active travel routes, including each of the local authority's Core Paths networks, other walking and cycling networks and 'quiet routes' on some minor rural roads. Each regional authority also has a range of initiatives underway to encourage and enable more active travel, including school traffic exclusion area and 20mph zones.

2.5.2. *Walking*

Figure 21 illustrates the proportion of people not walking in the previous seven days (as asked in the Scottish Household Survey)[12]. Nationally, 31% of people report that they had not walked as a means of transport in the previous week, and 39% that they had not walked for pleasure. The levels in Dundee City, Perth & Kinross and Fife are similar to the national average, meaning that around a third of people do not walk regularly.
The proportion of people walking in Angus is substantially lower: 40% do not walk for transport regularly, and 46% not for leisure.

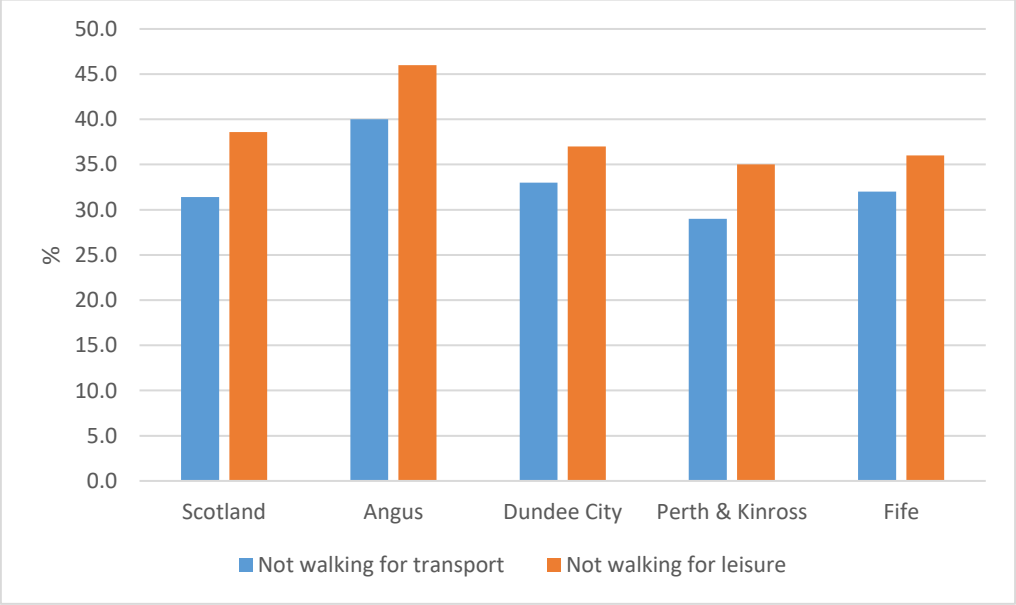


Figure 21 - Proportion of people not walking in previous seven days

[12] Transport and Travel in Scotland, LA tables. 2017 (data for 2016)

2.5.3. *Bus & Coach Network*

There is an extensive bus network in the region, though the frequency of services differs widely depending on the time of day and location. Most local bus services in the region are operated by Stagecoach and National Express (Xplore Dundee), with other operators[13] providing more localised and schools services. Longer-distance bus and coach services, largely operated by Scottish Citylink, Megabus and Parks of Hamilton, provide connections between some of the region's main settlements and onward to Inverness, Aberdeen, Edinburgh and Glasgow.

Community transport providers offer an effective, flexible and cost-effective service for some journeys in the region that are unable (due to personal circumstances or lack of other services) to be made by scheduled public transport. The Community Transport Association lists four providers in the region[14], though previous work undertaken by Tactran and local authorities has indicated that there are many organisations and services operating in the region. All are, however, available only in certain geographic areas and/or to specific groups of users, so there are (as in all regions) significant gaps in provision.

According to Transport and Travel in Scotland 2017 data[15], 56% of adults in Dundee City use a bus at least once a month, above the national average of 43%. This is a similar proportion as in Glasgow City, but well below the Edinburgh average of 82%. The other areas of the region are below the national average (40% in Fife, 37% in Perth & Kinross, and only 29% in Angus).

Although the number of regular users is relatively low, bus use in the Tay Cities Region has held up reasonably well in the last 15 years, with the region showing modest growth in the number of regular users against a declining national picture:

[13] Including Wisharts (Friockheim), Burnbrae Garage, Docherty's Midland Coaches, Elizabeth Yule, Smith & Sons Coaches, Sweeney's Garage

[14] Dundee Community Transport SCIO, Strathcare (Crieff), Comrie Community Bus Trust and Killin Community Bus Company

[15] https://www.transport.gov.scot/media/43115/la-tables-tatis-2017.xls

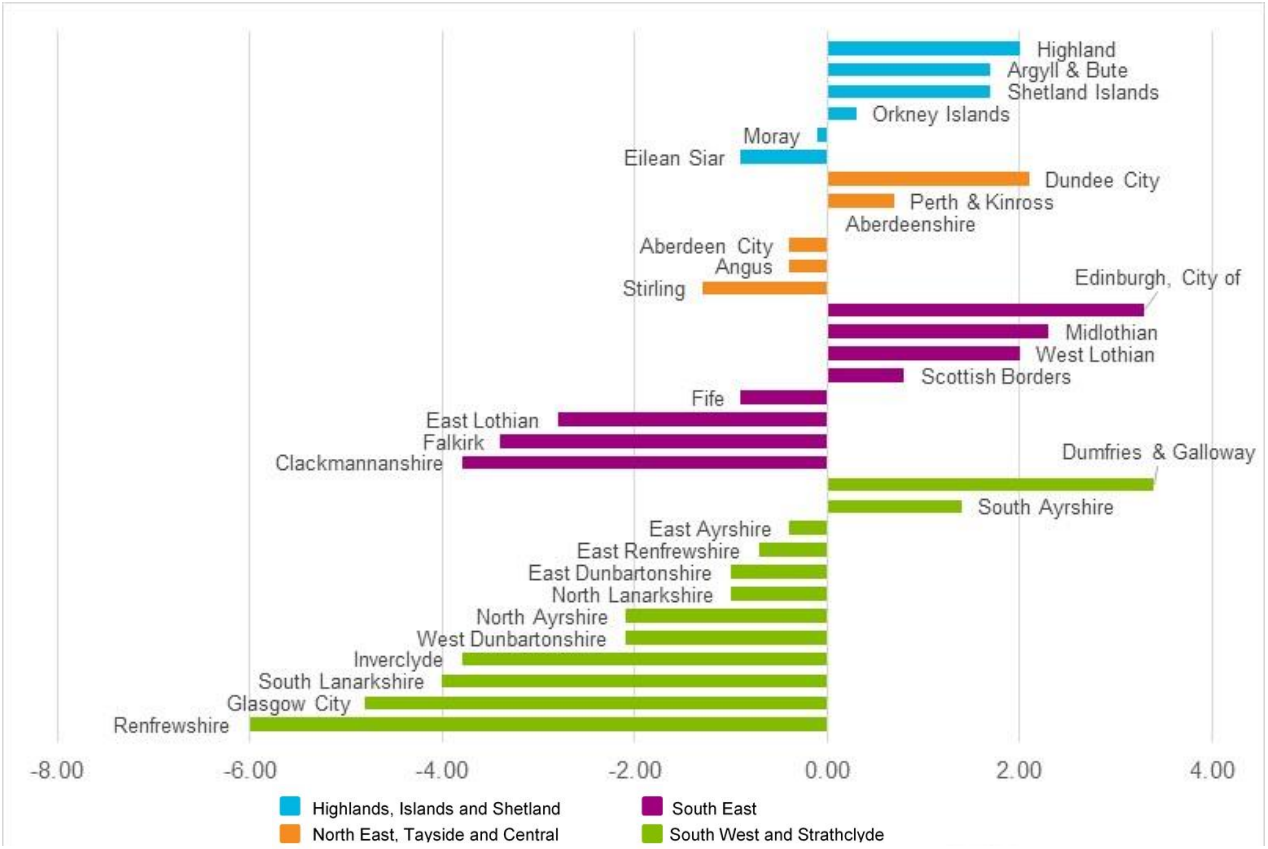


Figure 22 - Change in share of population (%) using the Bus Four or More Days a Week, 2003/04 – 2017 (Source: Transport and Travel in Scotland 2017)

2.5.4. *Rail Network*

There are 20 rail stations in the Tay Cities Region - two in Dundee City, four in North Fife, seven in Perth & Kinross and seven in Angus. They are served by combinations of the five rail lines that pass through the Region:

- East Coast Main Line (ECML) Aberdeen – London
- Central Belt (Glasgow and Edinburgh) – Aberdeen
- Highland Main Line (HML) Perth – Inverness
- Edinburgh – Perth
- West Highland Line (Rannoch station is in Perth & Kinross).

Rail journey times for centre to centre journeys between the main settlements within the region and the main destinations beyond it (Aberdeen, Edinburgh and Glasgow) are largely competitive with that of car, with the exception of Perth – Edinburgh, where rail journeys typically take around 50% longer than car.

Combined boardings and alightings at the region's top three busiest stations in 2018/19 were at Dundee (2,015,782), Perth (1,112,068) and Leuchars (644,262).

There have been significant increases in rail usage across the region in recent years, with 8% more boardings and alightings at the region's 20 stations in 2018/19 than 2014/15. Sixteen of the region's stations saw growth over that period. Of the 10 busiest stations in the region, Carnoustie has seen the largest growth, with patronage increasing over 38% between 2014 and 2019; however, a spike in 2018 is likely attributed to Carnoustie Golf

Links hosting a major sporting event in July 2018. Gleneagles and Leuchars stations have both seen patronage growth of over 20% over the same five-year period. The two largest stations in the region, Dundee and Perth, have seen 8.9% and 3.1% growth respectively.

Of the 10 busiest stations in the region, only two have seen patronage decline over the last five years, Arbroath and Montrose, in both cases because passenger numbers towards Aberdeen have declined more than passenger numbers towards Dundee have increased. Montrose has shown consistent year on year decline, resulting in a 19.6% decline since 2014.

2.5.5. *Ports, Maritime and Aviation*

There are three commercial ports in the Tay Cities Region:

- Port of Dundee
- Montrose Port
- Perth Harbour

The ports have different operators, and each has their own individual characteristics, but between them provide services in the region to the oil & gas and other freight sectors (including forest products and dry bulk goods), and the cruise ship market

Highlands and Islands Airports Ltd (HIAL) operate Dundee Airport, which at the time of writing (February 2020) has one scheduled route (to/from London Stansted airport with two flights per day Monday – Friday and one on Sundays, operated by Loganair). The airport has previously offered scheduled flights to a broader range of destinations, including London City, Birmingham, Belfast and Amsterdam.

2.5.6. *Road Network*

The trunk road network in the Tay Cities Region consists of the following routes:

- A9 Dunblane – Perth – Inverness
- M90 Queensferry Crossing – Perth
- A90 Perth – Dundee – Aberdeen
- A92 Dunfermline – Dundee
- A85 Perth – Lochearnhead

In addition to these routes, the following roads also perform key regional functions within the Tay Cities Region:

- A91 Kinross/Milnathort (M90) to St Andrews; and A915 linking Kirkcaldy – Leven – St Andrews
- A92 Dundee – Montrose: coastal route linking, along with A935 – link from Montrose Port to A90 through Brechin
- A93/A94 Perth – Blairgowrie/Coupar Angus and Forfar
- A977 Kinross – Kincardine Bridge
- A932 Arbroath – Brechin
- A919/A914 St Andrews – Dundee

Transport Model for Scotland (TMfS) is the national transport model for Scotland, which provides a broad representation of transport supply and estimates of transport demand. The current version is TMfS14 which was calibrated and validated using available data for 2014. The model covers the whole population of Scotland and details, at a strategic level, the choices made by people on how, where, why and when they travel. Vehicle trip data from TMfS14 highlights the travel patterns for the Tay Cities Region, indicating the

proportion of vehicles trips to a specific region or local authority. In each local authority area within the Tay Cities Region, the majority of vehicle travel is within each local authority boundary.

The data shows that most travel in the region is local. Of all journeys starting in Perth & Kinross, Angus and Dundee City, 81%, 86% and 90% end within the Tay Cities Region respectively. The most important single destinations for journeys starting in each of these three authority areas are the north east (9% of journeys from Angus) and Fife (7% of journeys from Perth & Kinross and 6% from Dundee). Of journeys originating in Fife, 77% remain within the authority area.

2.5.7. *Strategic Park & Ride / Park & Choose*

Strategic Park & Ride sites in the region are adjacent to the main road network at Kinross, Broxden and, to a lesser extent, Scone. Broxden in particular serves both local and long-distance park & ride, plus facilitates car sharing and, increasingly, electric vehicle charging.

2.5.8. *Ultra-Low Emission Vehicles*

There has been significant growth in the Tay Cities Region in the registration of Ultra Low Emission Vehicles (ULEVs). Over a five-year period (2014-2019) there has been on average a yearly growth rate of 48% (on average 300 new registrations per year)[16]. The average yearly growth rate nationally over a five-year period (2014-2019) is 63% (on average 2430 new registrations per year).

Dundee City Council has been at the forefront of work to install electric vehicle infrastructure and encourage EV uptake.

Tactran and the region's authorities are looking to capitalise on and accelerate this change through the recent publication of its Regional EV (Electric Vehicle) Strategy and the establishment of a Regional EV Delivery Forum.

2.5.9. *Road Safety*

There has been a sharp decline in recorded road traffic accidents in the region. Figure 23 illustrates the locations of recorded road accidents in which people were injured in the Tay Cities Region between 2013 and 2017, categorised by severity. When comparing the number of recorded accidents between the periods of 2004 to 2008 and 2013 to 2017, there is a 49% decline, which is relatively evenly spread across the region. This is the largest percentage decline in all regions in Scotland, and significantly larger than the national change (35% decline). The overall change comprised a 53% fall in the number of accidents in rural areas and 45% in urban areas.

[16] Department of Transport - Vehicle Licencing Statistics

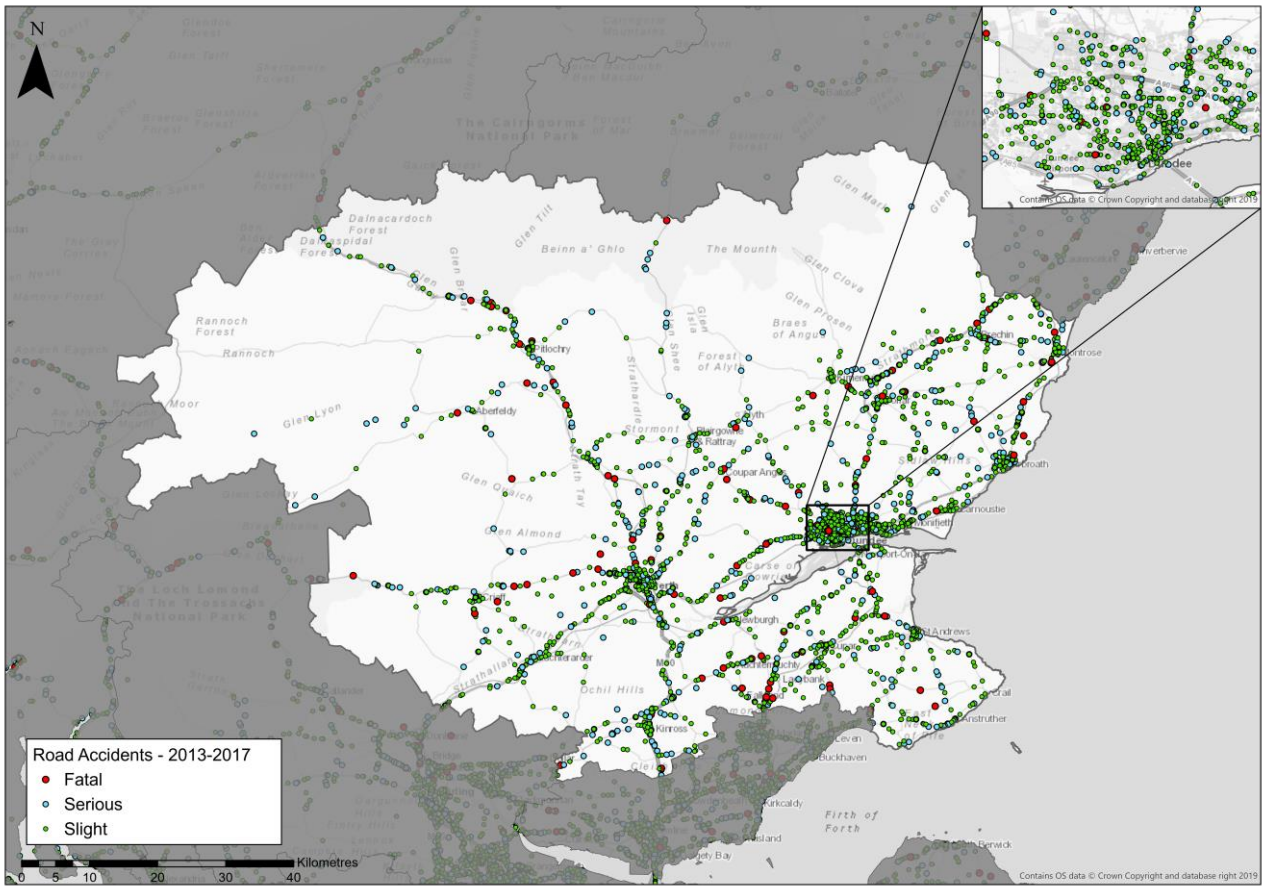


Figure 23 - Locations of Road Accidents (Slight, Serious and Fatal) in Tay Cities Region from 2013-2017 (click image to enlarge figure)

Between 2013 and 2017, 264 accidents were recorded on the A92, the largest number of accidents recorded on a road in the region. However, when considering only fatal and severe accidents, the A90 has the largest number of recorded accidents (64).

2.6. Context Summary

Key points to note from the context review are:

- The Tay Cities Region comprises a broad mix of urban and rural settlements and areas.
- The region is home to 9% of Scotland's population, and the region's population is a little older on average than that of Scotland as a whole. Dundee City has a higher older population percentage than the Scottish Cities average.
- Economic activity levels are in line with national benchmarks, except for in Dundee City which performs less well than other Scottish cities, but regional GVA growth has been higher than the national average in recent years.
- Deprivation levels are high in parts of Dundee City, and in selected other settlements in the region. In Dundee City, 34% of the population live in the top fifth of most health deprived datazones in Scotland, and each of the region's local authority areas has significantly higher proportions of their populations with long-term health conditions than the national average.
- Access to key services is reasonable for most residents of the region's cities and larger towns, but transport options are limited in more rural areas and for people unable to use scheduled public transport and without car availability. Many bus services are frequently delayed by traffic congestion.
- Car is the main mode of transport for most journeys, even though a large majority of journeys are made within residents' home local authority area.
- Carbon emissions from transport in the region are higher than the Scottish average. Air Quality Management Areas are in place in four towns/cities in the region because of local air pollution from transport.
- The region's transport network caters for both local and through trips, the latter because of the region's role in connecting the north and north-east of Scotland to the Central Belt and beyond. Traffic congestion is severe at peak times on the trunk road network around Perth and Dundee.
- The region (especially Dundee City) has been taking a lead in the promotion of electric vehicles and uptake of other new transport technologies.

3. Problems & Opportunities

3.1. Approach to Problems & Opportunities Identification

Deriving evidenced transport related problems and opportunities is a critical element of the Initial Appraisal: Case for Change. They are identified from a range of sources including a review of existing policy and strategy documents, data analysis and extensive stakeholder engagement. This Section sets out the problems and opportunities with the strategic transport network in the Tay Cities 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 Scottish Household Statistics[36], Transport and Travel in Scotland[37], INRIX[38] journey time and TRACC[39] connectivity data, as well as data gathered from recent reports and studies in the region. Key findings from the data analysis are presented below, to evidence the problem and opportunity themes set out.

3.1.2. *Stakeholder Engagement*

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

- **Problems and Opportunities workshops** held in Dunkeld and Dundee in June 2019. They were attended by 44 representatives (out of 129 invited) of regional stakeholders from public, private and third sector organisations.
- **Option Generation Workshops** were held in Perth and Dundee in November 2019 to generate potential interventions which may address the identified problems and opportunities. The same stakeholders invited to the June 2019 workshops were invited to the Intervention Generation workshops; 26 attended (of 169 invited).
- **Structured interviews** with senior officers from the local authorities and Regional Transport Partnerships of the region.
- **An Elected Members Briefing Workshop** was held in January 2020. Key elected members with a transport portfolio, selected by the RTWG, were invited and it was an opportunity for them to hear first-hand about the project and its programme, problems and opportunities gathered, the interventions generated,

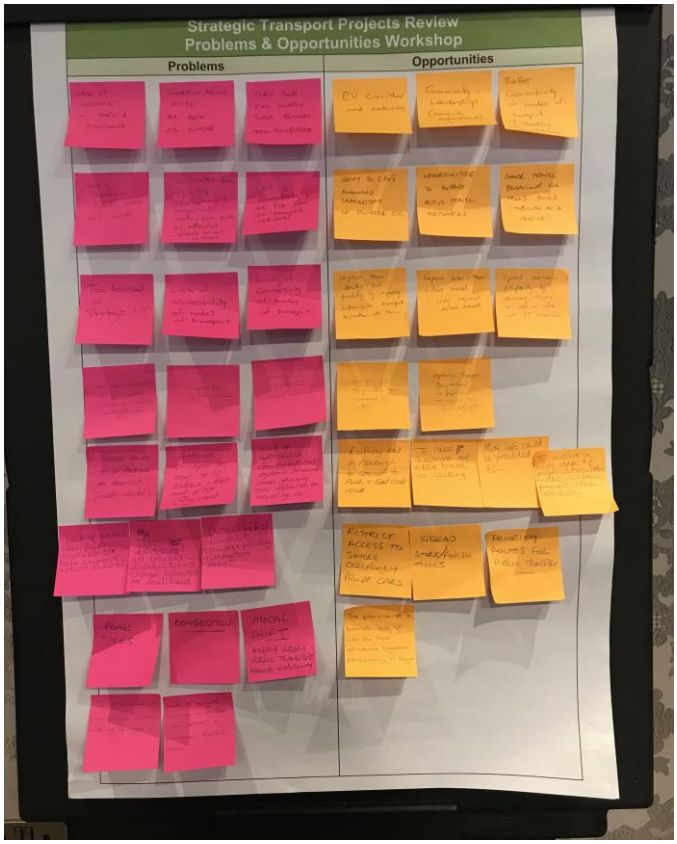


Figure 24 – Stakeholder Engagement

as well as putting forward their views for interventions to be considered.

- **An online survey** commenced in late 2019, was promoted widely in the Tay Cities Region to enable anyone to feed into the STPR2 process. The survey generated 3,025 responses nationally.
- **Regional Transport Working Group (RTWG) meetings**, which include representatives from Angus, Dundee City, Perth & Kinross and Fife Councils, Tactran and SEStran (Regional Transport Partnerships), Network Rail, ScotRail, Scottish Natural Heritage, Sustrans, Transport Scotland and the STPR2 consultant team.
- **Schools Engagement** is underway across the country, engaging with pupils at selected primary and secondary to hear their ideas for transport priorities and interventions.

More detail on the stakeholder engagement activities is contained in Appendix C.

3.2. Problems & Opportunities

Based on the evidence described in the previous section, the following transport-related problems and opportunities have been identified for the Tay Cities Region. Evidence to support the themes listed below is provided in this section.

- Deprivation
- Transport exclusion
- Physical activity and health
- Limited transport choice
- Active travel facilities/safety
- Air pollution
- Carbon emissions
- Public transport availability and competitiveness
- Freight movements
- Inter- and cross-regional connectivity
- Road capacity constraints and congestion

3.2.1. *Problems*

DEPRIVATION

There is a wide disparity in deprivation of the region's communities.

Thirty-seven percent of SIMD datazones in Dundee City datazones are in the most deprived quintile nationally; deprivation levels in Dundee City are nearly twice the national average.

Deprivation in the other local authorities' areas is much lower (1% of Angus in the most deprived quintile), though pockets of significant deprivation do exist outwith Dundee City; parts of Arbroath, Perth and Blairgowrie are in the most deprived 10% of Scottish datazones. Figure 25 shows SIMD ranking for datazones across the region.

Although deprivation arises from a broad and often complex range of factors, improved transport may be able to assist some people living in deprived circumstances connect to better opportunities for employment, education or healthcare, and to a wider range of services.

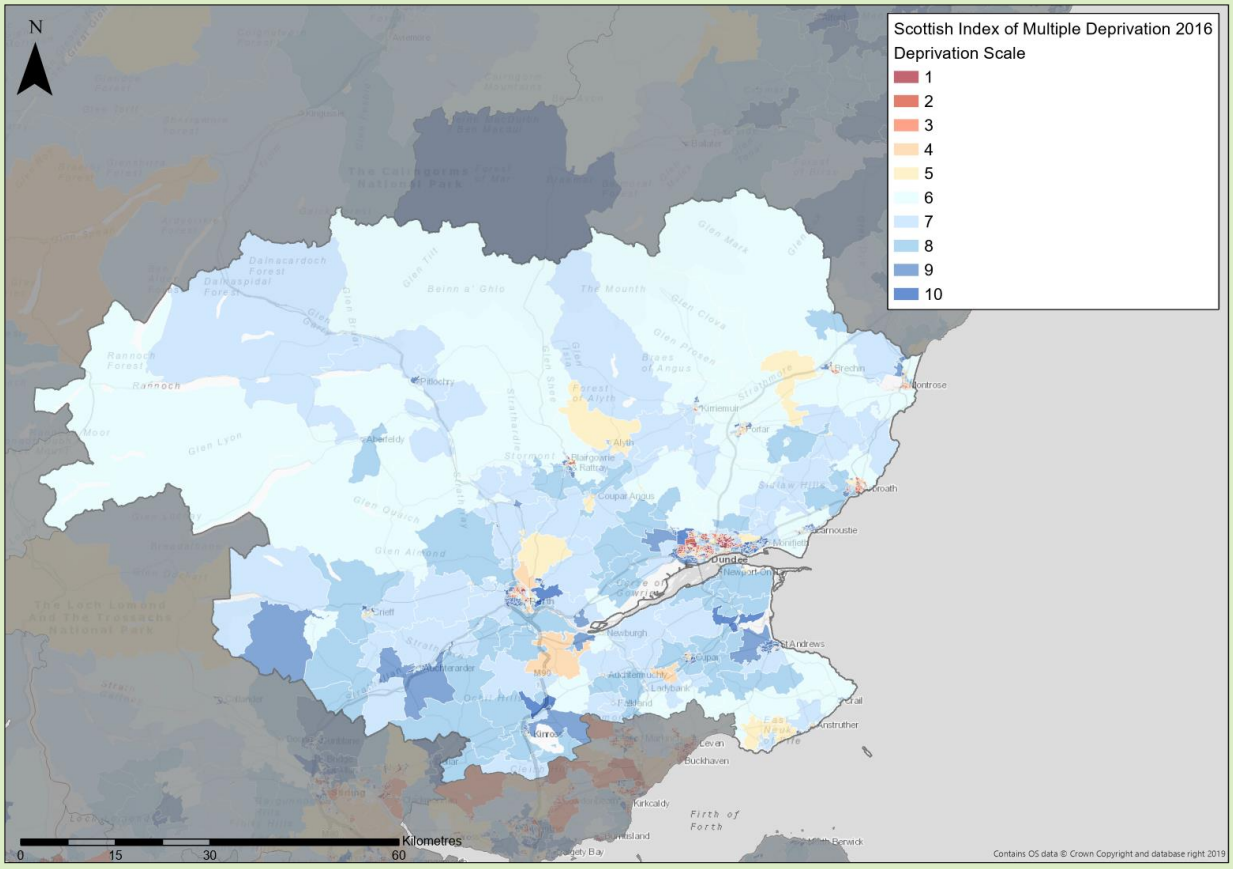


Figure 25 - SIMD datazone locations for Tay Cities Region, coloured by decile ranking (click image to enlarge figure)

TRANSPORT EXCLUSION

On any given day[17], 27% of the population of Scotland does not travel anywhere. This proportion changes with age; nearly half of Scots aged 80 and over do not travel on any given day.

According to the 2017 Scottish Health Survey, more than a quarter of the region's population (and nearly a third of that of Dundee City) has a long-term physical or mental health condition. Many of these people will be unable to use a full range of transport choices, so may lack access to a full range of opportunities and/or be dependent on others to help them travel.

The region has a higher proportion of older people than the Scottish average, and so may be more likely to suffer health problems and less able to use all transport options. The number of elderly residents of the region is forecast to increase substantially in years to come, potentially exacerbating transport exclusion.

Stakeholders highlighted that some people – especially young and older people, and women – can feel excluded from using all forms of transport because of road safety and/or personal security concerns. They note that this places significant barriers to accessibility, especially after dark.

17 https://www.transport.gov.scot/media/45463/tatis-2018-travel-diary-tables.xlsx

Stakeholders also highlighted that not all rail stations in the region have step-free access from street to train, which places a significant constraint on train use for some people[18]. Bus services are Disability Discrimination Act (DDA) compliant[19], but roadside infrastructure does not always enable access to bus for people with mobility difficulties.

Sustrans identified areas whose residents are more at risk of transport poverty, based on average levels of household income, car availability and access to the public transport network[20]. The assessment shows higher levels of transport poverty in more rural parts of the region, but also pockets elsewhere, including several of the outer suburbs of Dundee.

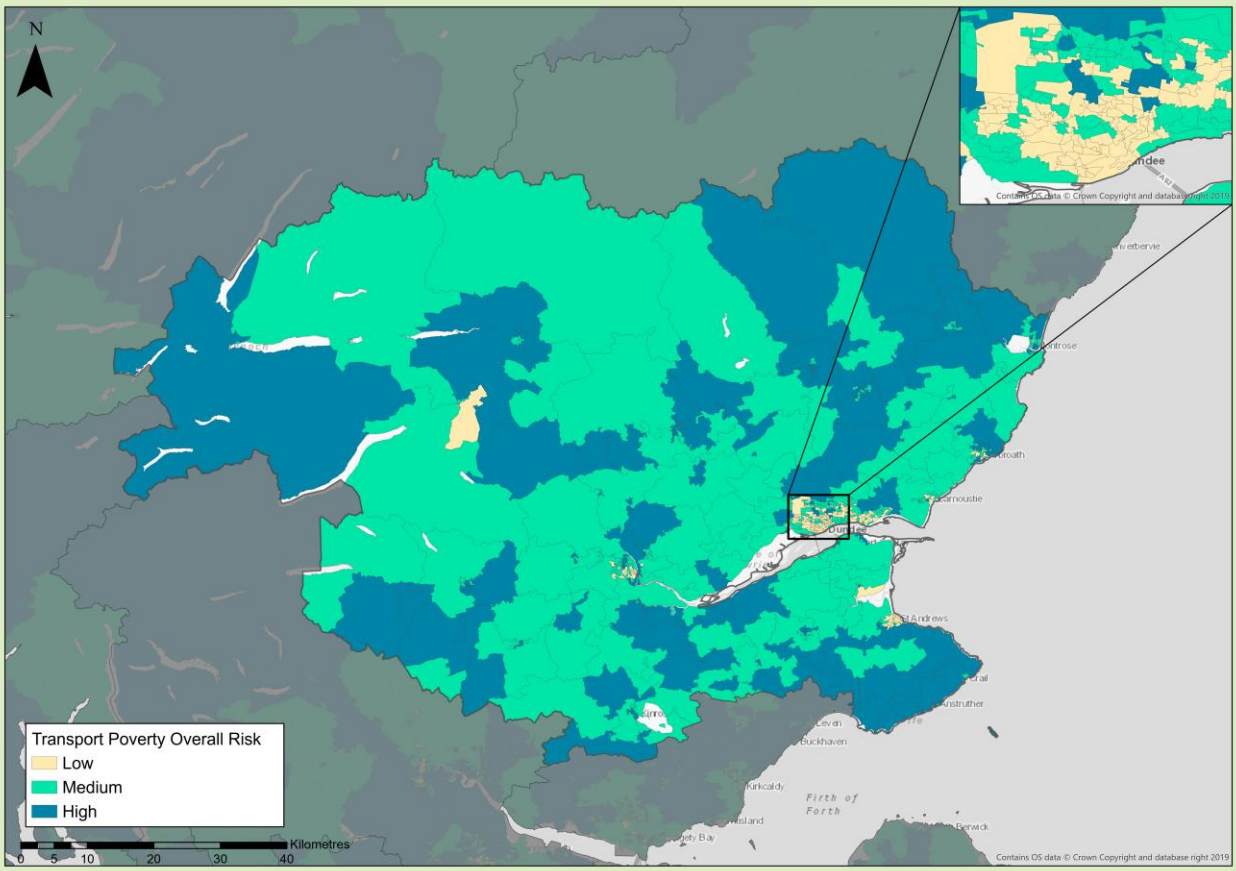


Figure 26 – Risk of transport poverty in the Tay Cities Region (click image to enlarge figure)

[18] According to http://accessmap.nationalrail.co.uk/, Dunkeld & Birnam, Rannoch, Golf Street and Barry Links stations have no step-free access from street to platform whilst Monifieth, Invergowrie, Springfield and Balmossie have partial step-free access (usually to one platform only). Other stations provide step-free access from street to platform, but none of the region's stations offers consistently level boarding from platform to train.

[19] I.e. meet the standards as set out in the Disability Discrimination Act

[20] Transport Poverty analysis is based on research which uses 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

PHYSICAL ACTIVITY AND HEALTH

Physical activity levels of much of the region's population fall below recommended guidelines: 34% of adults living in the NHS Tayside area (which excludes north east Fife) do not achieve recommended amounts of physical activity (i.e. do not get at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both)[21].

The proportion of people walking on a regular basis in the region is decreasing quickly: the proportion reporting walking at least once a week as a means of transport fell from 75% in 2012 to 69% in 2016, whilst the proportion walking weekly for pleasure/fitness decreased from 69% to 63% in the same period[22].

In Dundee City 33% of the population lives in a SIMD area ranked in the bottom quintile for health, and there are pockets of health deprivation in other parts of the region (see Figure 27). Transport choices have the potential to improve health outcomes: "The potential benefits of physical activity to health are huge."[23] "For most people, the easiest and most acceptable forms of physical activity are those that can be incorporated into everyday life. Examples include walking or cycling instead of travelling by car."[24]

[21] Source: Scottish Health Survey
[22] Transport and Travel in Scotland, 2017
[23] Sir Liam Donaldson, Chief Medical Officer, 2009
[24] Department of Health, 2011 Start Active, Stay Active. A report on physical activity for health from the four home countries' Chief Medical Officers.

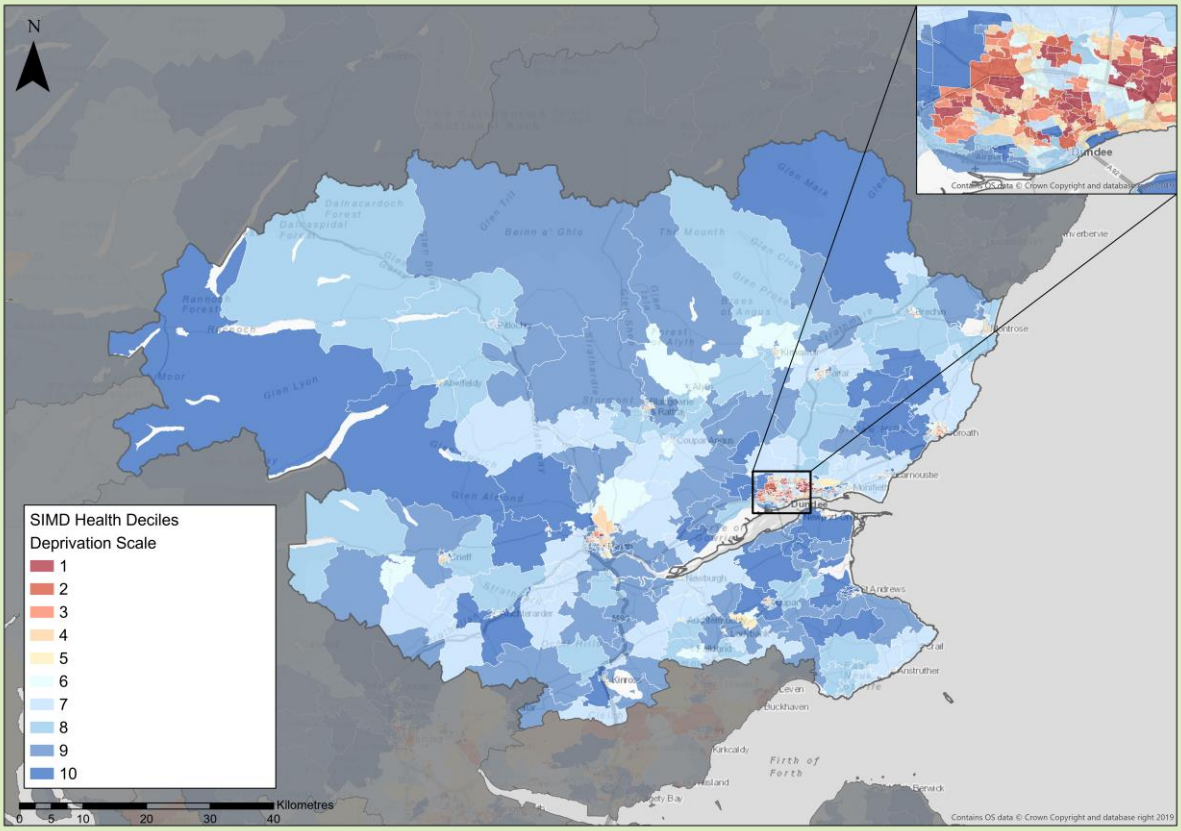


Figure 27 - SIMD health rankings Tay Cities region, coloured by decile ranking (click image to enlarge figure)

LIMITED TRANSPORT CHOICE

The region suffers from relatively poor accessibility: 22% of datazones in Perth & Kinross, 20% in Angus and 15% in north east Fife are within the bottom decile for geographic access (SIMD). Data analysis is supported by stakeholder views, several of which highlighted challenges, particularly for residents of rural areas that do not have access to a car.

Public transport provides a good option for many journeys, especially between town/city centres and from city centres to their suburbs. But it does not provide an option for all journeys, as discussed in section 2. As a further example, Figure 28 shows how well public transport provides a connection from locations across the region to the nearest GP or other health facility. Thirteen percent of residents from Perth & Kinross and 10% from Angus do not have a scheduled public transport service from their home to a health facility.

Limited public transport availability, especially in rural areas, is cited by stakeholders as a contributory factor to car dependency and resulting transport poverty. However, 28% of the region's households have no access to a car or van; some of these households will face very limited transport choice.

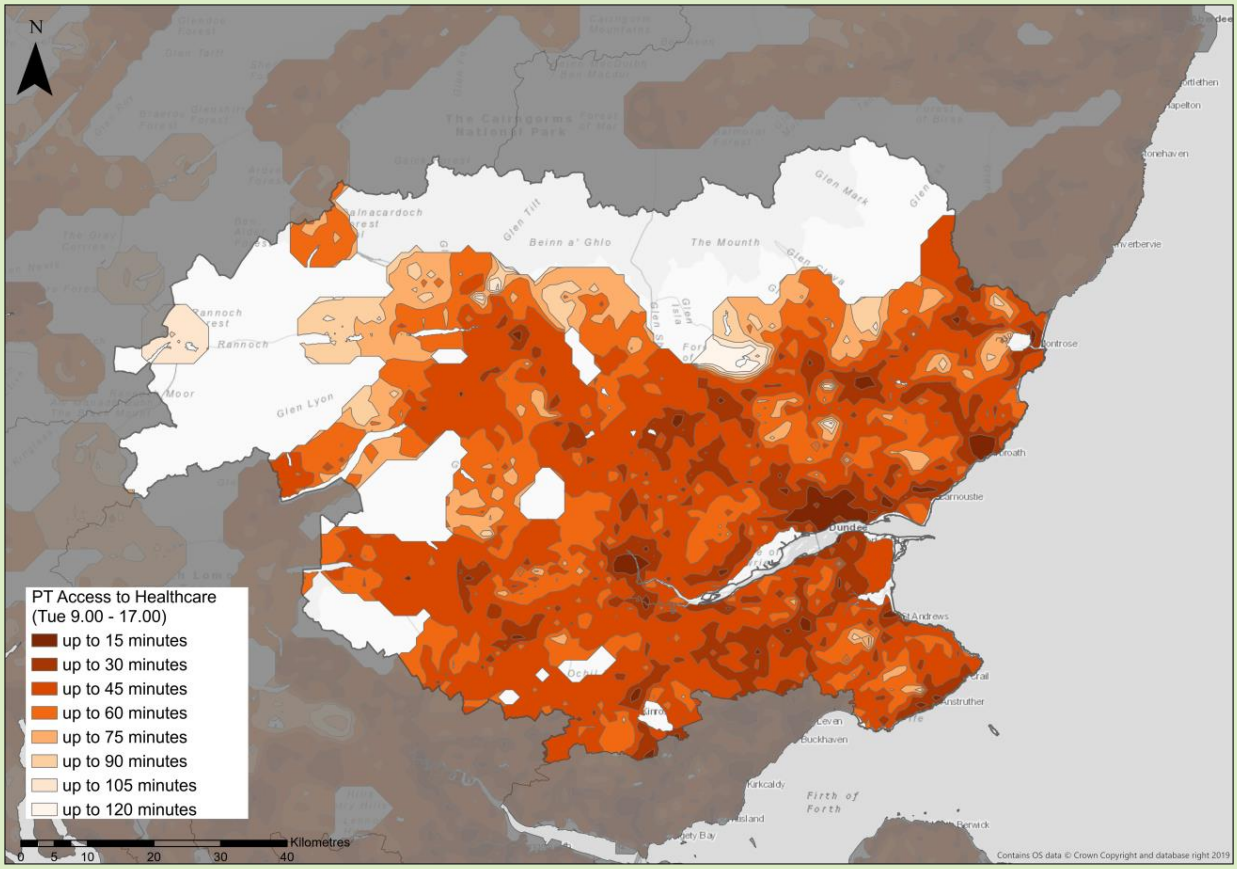


Figure 28 - Public transport accessibility to health facilities (0900-1700) (click image to enlarge figure)

ACTIVE TRAVEL FACILITIES / SAFETY

While the coastal and A9 (north of Perth) corridors in the region are served by NCN infrastructure, stakeholders report that this largely focuses on/caters for the leisure and tourism sectors rather than day-to-day commuter cycle trips, and that the NCN does not provide a high-quality, traffic-free route throughout. Figure 29 shows the proportion of people that travel to work by bike (yellow is lower % and red is higher %).

Each of the region's authorities is working to improve active travel routes and reduce perceptions of road danger. Examples include 'quiet route' traffic calming on rural roads, traffic exclusion zones around schools and the introduction of 20mph zones. Scottish Government Places for Everyone funding has been allocated to deliver major upgrades to active travel infrastructure in parts of Perth and Arbroath. Tactran has defined an aspirational active travel network for its part of the region[25].

However, many gaps remain for both local and longer active journeys. Some are 'true' gaps: missing links in networks, such that there is no reasonably direct route for walking, cycling or wheeling for the chosen journey. But many more relate to safety and/or quality of routes, whereby people feel that there is no safe and attractive option for them or their dependants to use. Short car journeys are a common response to these issues, resulting in congestion and pollution. A lack of physical activity will result in each case.

25 https://www.tactran.gov.uk/strategy.php

Disabled, older and young people tend to be affected most of all.

Busy roads passing through communities cause particular barriers, the A90 Kingsway in Dundee being the most commonly cited during engagement. This accords with Cycling Scotland's research into the barriers to cycling, in which "not safe enough on the roads, bad drivers, etc" was by far the most common reason for not cycling, being quoted as the one main reason by 25% of respondents (the next most common reason being quoted by only 11%)[26].

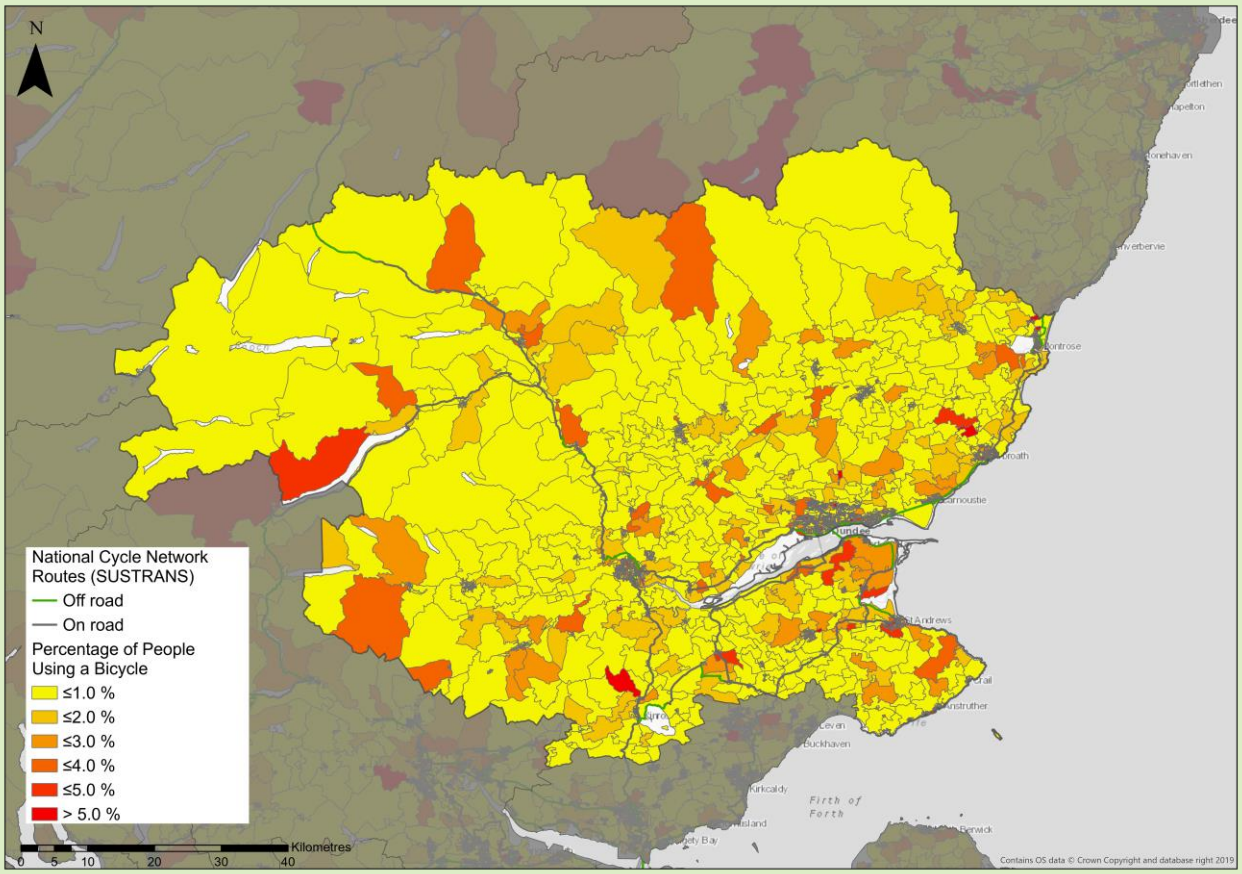


Figure 29 - Mode of Travel to Work (Bicycle) [27] **(click image to enlarge figure)**

[26] Cycling Scotland. Attitudes and behaviours towards cycling in Scotland, 2019 https://www.cycling.scot/mediaLibrary/other/english/4208.pdf

[27] Census 2011 (Scotland) https://scotlandscensus.gov.uk/

AIR POLLUTION

Although air quality is good in most of the Tay Cities Region, air pollution from road transport (particularly NO_2 pollution) exceeds standards on some main roads in:

- Dundee
- Perth
- Cupar
- Crieff

This has resulted in the declaration of Air Quality Management Areas (AQMAs) as shown in Figure 30. The health of people that live or otherwise spend significant amounts of time in these areas is adversely affected by this pollution.

Traffic data and journey time information suggest that traffic levels at pollution hotspots in the Dundee and Perth AQMAs are inflated because of peak time congestion on the trunk road network.

Following the commitment made in the 2017 Programme for Government, Dundee City Council is working to introduce a Low Emission Zone by the end of 2020. Other AQMAs are due to have Low Emission Zones introduced by 2023, should evidence show they are required.

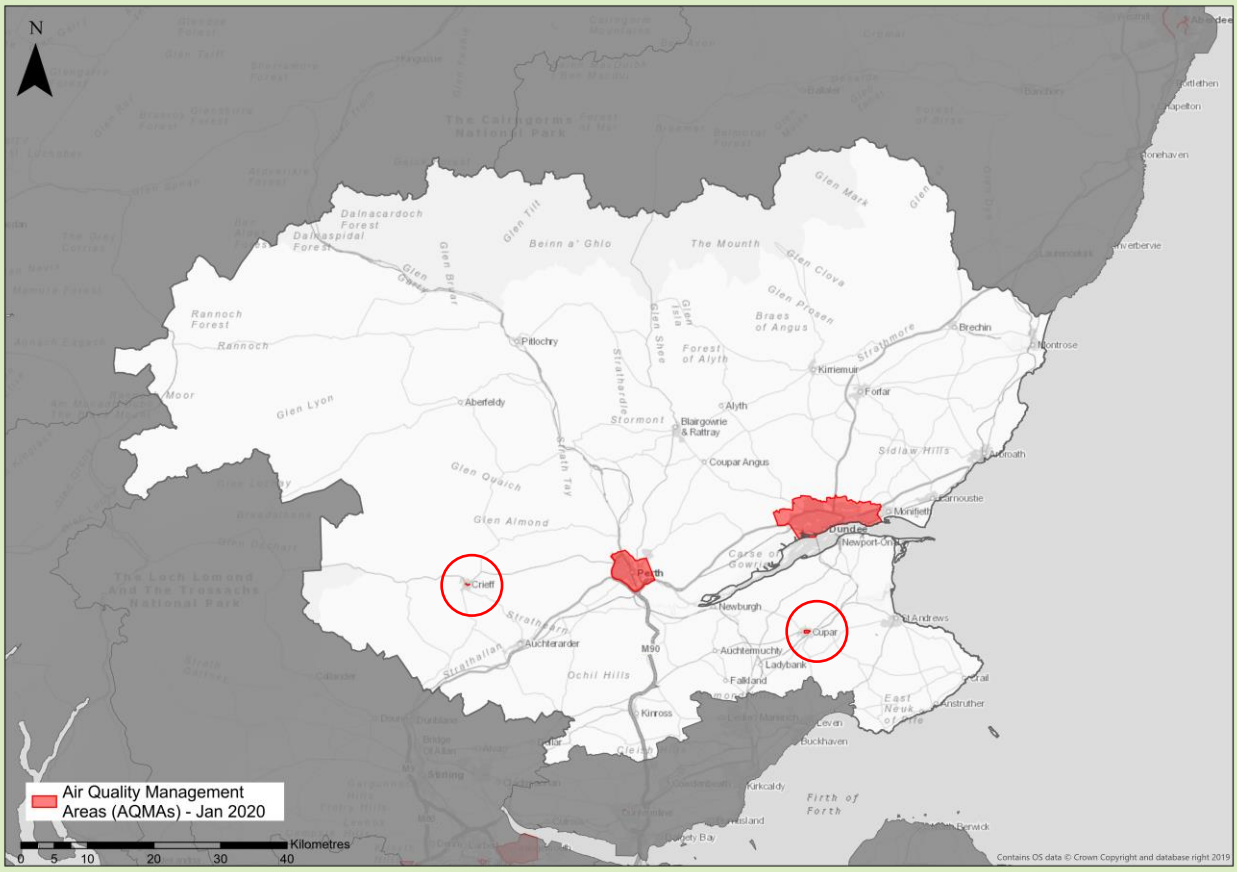


Figure 30 - Locations of AQMAs (click image to enlarge figure)

CARBON EMISSIONS

UK Government data shows that total carbon emissions per capita in the Tay Cities Region are broadly in line with the Scottish average, both in terms of overall emissions and the trend of reductions over time. However, carbon emissions from transport are not.

Regional transport emissions from transport were slightly (less than 0.5%) higher in 2017 than 2005, but for Scotland as a whole, transport emissions fell in the same period (albeit by only 2%).

PUBLIC TRANSPORT AVAILABILITY AND COMPETITIVENESS

Rail offers journey times competitive with car for many longer distance centre-to-centre journeys to key destinations outside the region (the exception being Perth – Edinburgh, where bus is competitive with car). Figure 31 presents the journey times comparisons from key Tay Cities Region settlements to Glasgow, Edinburgh and Aberdeen.

Rail use in the region has been increasing in recent years, and recent timetable improvements should continue this trend. But the network is limited, and many stakeholder comments relate to the fact that some of the region's settlements, including Forfar, Blairgowrie and St Andrews, are distant from the rail network.

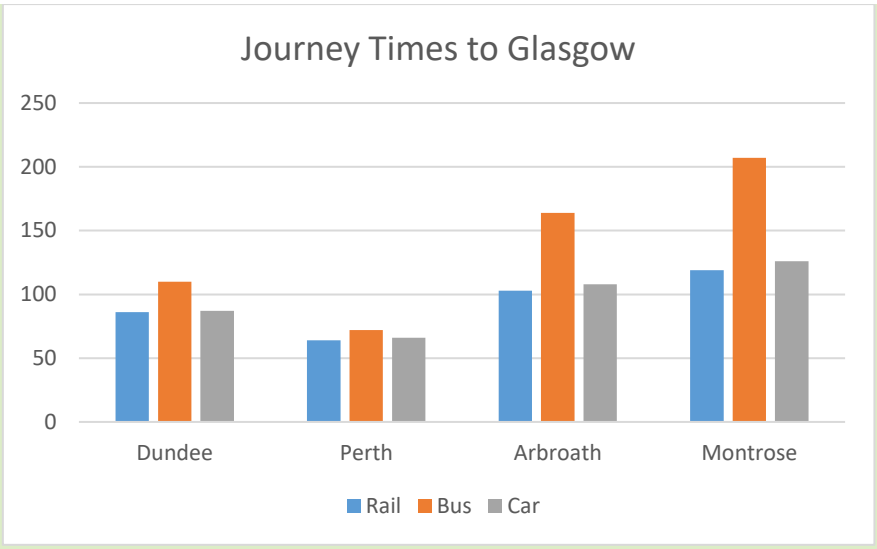
Stakeholders commented that rail fares are typically higher in the Tay Cities Region than in other regions. As an example, ScotRail's day return fares to Glasgow are 10-20% more per mile from the main stations in the Tay Cities Region than from Stirling.

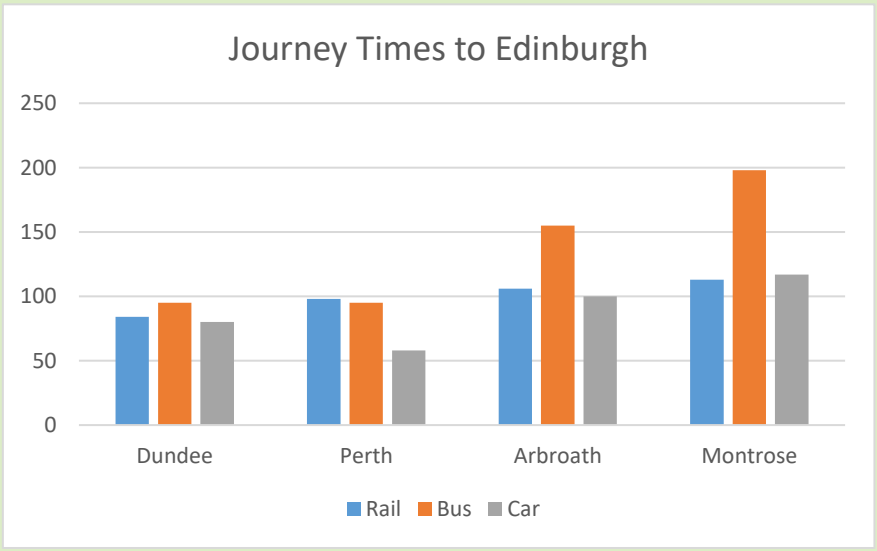
The bus network of the region is reasonably comprehensive (see Figure 32 for indicative public transport accessibility to town centres in the region), but some areas' services are weak, and many corridors do not have a frequency and quality of service that stakeholders perceive to be competitive with car.

The number of regular bus users in the region has been relatively stable in recent years (in comparison with a decline across Scotland), but many services, particularly those operating in/through the region's cities, are regularly delayed by congestion.

Stakeholders report a variety of concerns about public transport integration: of integration with active modes (particularly cycling), of timetable integration, and also of the poor standards of some stops and stations.

Nationally, public transport fares have increased by an average of 58% in the last decade, whilst motoring costs have increased by only 30%.





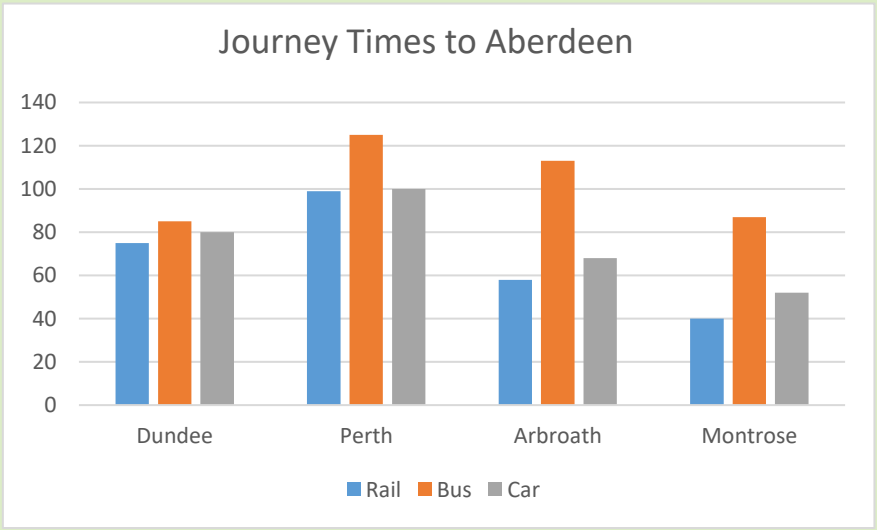


Figure 31 – Rail, bus and car journey time comparisons from key Tay Cities settlements to Glasgow, Edinburgh and Aberdeen

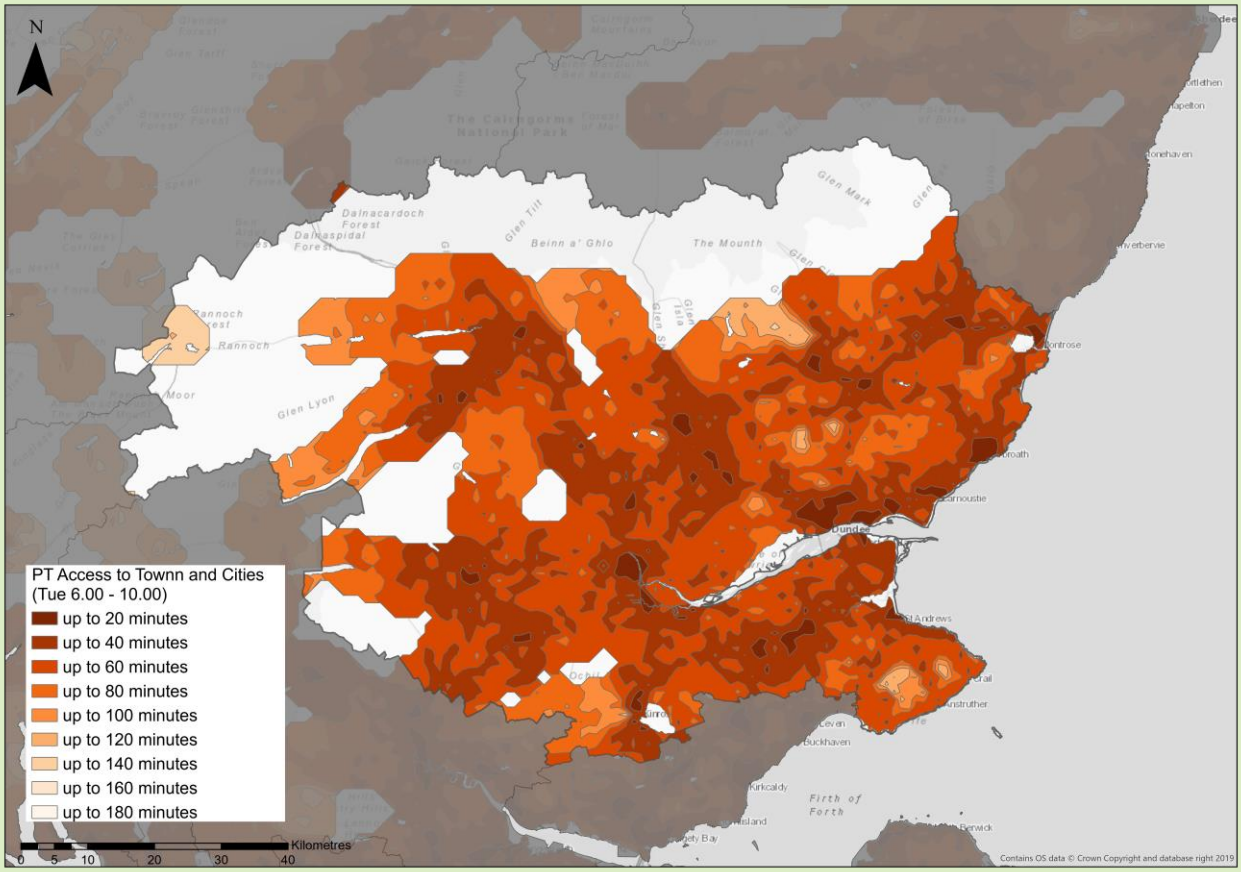


Figure 32 - Public transport accessibility to town centres (0600-1000) (click image to enlarge figure)

FREIGHT MOVEMENTS

The Tay Cities Region plays an important role in freight movements for the Scottish economy: both for movements within/to/from the region, and through it to/from the north/north east Scotland.

Trunk Road congestion increases business costs, and stakeholders report frustrations with peak time delays, especially on the A90 in Dundee and the A9/M90 at Perth. Stakeholders note that the volumes of heavy vehicle movements on some routes increase community severance (highlighting the A90 Kingsway in Dundee, the A94 Scone – Forfar exacerbated by vehicles bypassing congestion in Dundee, but also in some of the region's smaller towns such as Cupar and Crieff).

The region's main ports, Dundee, Montrose and Perth, are targeting growth. The offshore market provides opportunities. Timber is another source of this potential new demand, especially for Perth harbour, but timber extraction is leading to new pressures for heavy vehicle movements on some rural roads. Consideration is being given to whether rail provides an opportunity for more sustainable timber transport from the region. There are no road/rail or sea/rail freight transhipment facilities in the Tay Cities Region (though a rail freight facility is being developed at the Highland Spring site at Blackford) which some stakeholders perceive as limiting the potential for transfer of freight to more sustainable modes than road.

Stakeholders report a lack of adequate lorry parking facilities in the region.

INTER- AND CROSS-REGIONAL CONNECTIVITY

Although the region's cities and some other towns are well connected to major road and rail networks, parts of the region, notably areas of north east Fife, north Angus and west Perthshire, are distant from them.

Cross-regional road and rail links are essential for connectivity between the Central Belt and north/north east Scotland, though these cross-regional movements create problems of congestion (especially on the A90/A9 routes) and pollution in the Tay Cities Region. These movements exacerbate trunk road congestion, which increases traffic levels in the region's cities.

No direct international connections (or scheduled flights to any destination apart from London Stansted) are currently available from the region.

Access to Edinburgh airport is reported by stakeholders to be important for the Tay Cities' regional economy, but the only direct public transport connections to the airport from the region is the coach link from Dundee city centre; journeys from any other location require interchange, typically at Halbeath park & ride or Edinburgh Gateway station.

No direct public transport connections are available from the region to Scotland's other main airports (Glasgow, Aberdeen), though the recently-improved Montrose – Inverurie rail service does provide better links from parts of Angus to Aberdeen airport.

ROAD CAPACITY CONSTRAINTS AND CONGESTION

At Perth, peak time congestion is common on the trunk road network. Based on the data analysis undertaken using INRIX (speed data) and stakeholders' views, significant road capacity constraints around both the region's cities were identified at Broxden (A9/M90/A93) and Inveralmond (A9/A912) junctions.

At Dundee, similar problems occur on the A90 Kingsway, most particularly at the Swallow Roundabout (A85 junction, to the west of the city) and the Forfar Road junction (A90/A972/A929 junction, north of the city). Congestion at the A92/B978 Claypotts junction is also common. These problems constrain accessibility within the region for freight and bus/coach movements, as well as car, and also for journeys across it between the Highlands/North East and the Central Belt and beyond.

Trunk road congestion at both Perth and Dundee leads to additional traffic routeing through the cities.

As well as the trunk road junctions highlighted above, bus journeys are frequently delayed by congestion in the region's cities.

The Transport Model for Scotland (TMfS), suggests that between 2014 and 2037 road traffic (billion vehicle miles p.a.) will increase by 38% in the Tay Cities Region, slightly higher than the national growth of 37%. It also predicts a 77% increase in road congestion (PM Peak Delay seconds/mile) in the region, much higher than the predicted 37% rise across Scotland.

RAIL CAPACITY AND ACCESS CONSTRAINTS

With regards to rail, the Revolution in Rail timetable changes have recently introduced extra trains, in response to long-held aspirations to improve both service frequency and passenger capacity. This is generating growth for demand for rail travel in the region, including a reverse in the decline in patronage at Arbroath and Montrose. Additional improvements on the Arbroath – Glasgow service are expected to be introduced soon. Further benefits to the corridor, including journey time, local and inter-city connectivity, and service frequency, are now in part limited by infrastructure. This includes signalling and the need to provide additional infrastructure to enable intercity services to pass the stopping trains that provide the regional connectivity.

Rolling stock loadings are anecdotally reported to remain high on some services, despite the recent timetable changes, especially those between Aberdeen and the Central Belt. Rolling stock changes that would increase capacity are planned, though have been delayed.

Figure 33 highlights the journey times to rail stations in the region, when travelling by foot. Relatively little of the region, including much of the urban areas of Dundee and Perth, are within a short walking distance of a station.

Many comments were received from stakeholders during engagement for this review which highlighted the lack of step-free access from street to train at many of the region's stations.

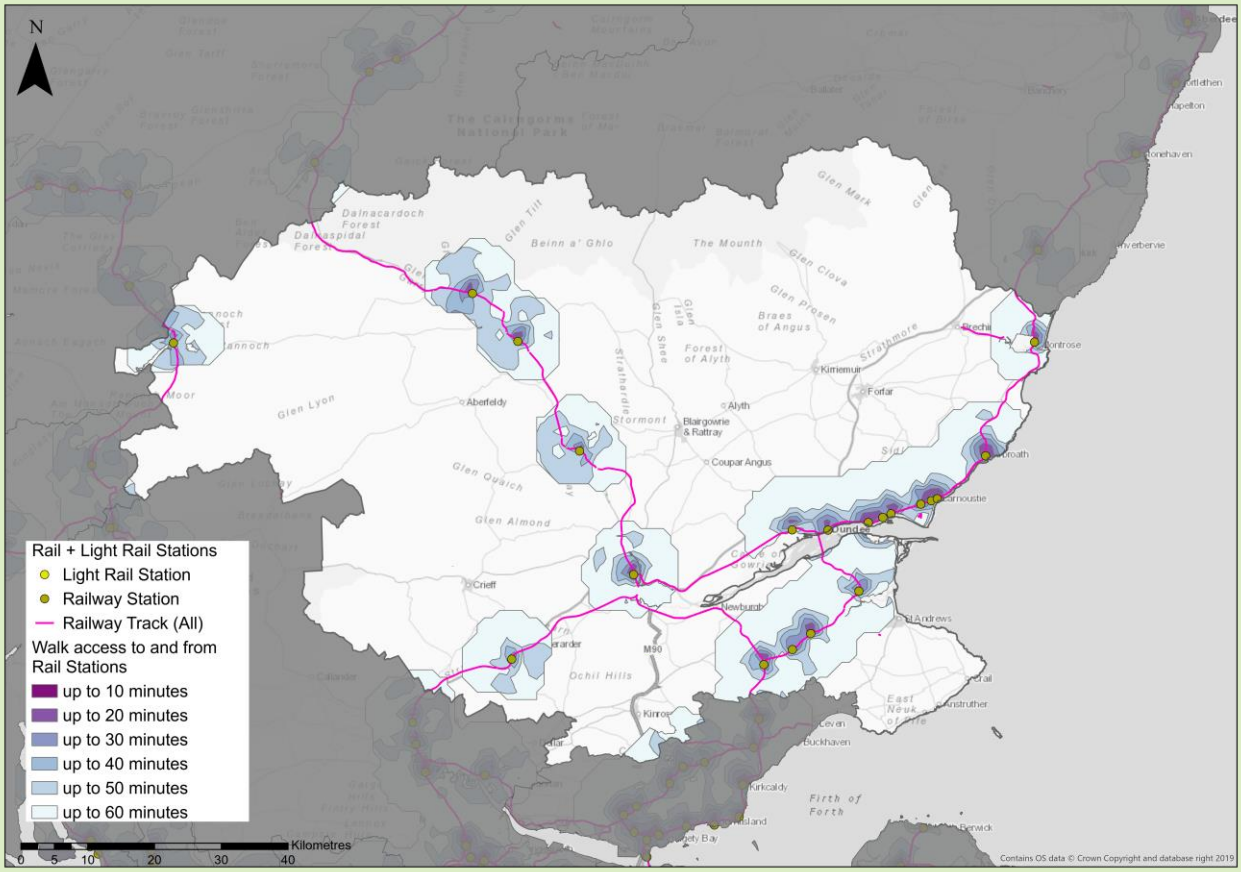


Figure 33 - Journey time catchments to rail stations, by walking (click image to enlarge figure)

Online Survey: Reported Problems in the Tay Cities 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. A total of 3,025 responses to the survey were received, with 9% (284) submitted for Tay Cities Region. As part of the survey, respondents were asked to rank their top 3 priority problems.

The commonly raised problems for the region included:

- Cycling - Availability of safe cycling infrastructure
- Roads - Quality of roads infrastructure
- Rail - Cost of rail travel
- Rail – Access to nearest rail station
- Active Travel – Availability of safe walking/wheeling infrastructure
- Bus – Cost of bus travel

The findings from the survey have been used to inform and where appropriate act as a cross-check with the identification of the transport related problems described in this section.

3.2.2. *Opportunities*

This section provides a summary of key opportunity themes identified for the Tay Cities Region.

TECHNOLOGICAL OPPORTUNITIES

The Tay Cities Region has demonstrated good potential to respond to new technological opportunities to promote sustainable and active travel choices.

Recent initiatives in the region include:

- Dundee's work to increase electric vehicle use, and the publication of Tactran's Electric Vehicle Strategy, which builds on Dundee City Council's lead;
- the Dundee MILL ("Scotland's smart mobility test lab", which amongst other initiatives is working to implement smart parking payment and more efficient business fleet use);
- NaviGoGo, Scotland's first Mobility as a Service (MaaS) pilot project, which operated in Dundee and North Fife;
- Travelknowhow, Tactran's on-line travel plan advice tool;
- Perth & Kinross Council is funding the development of the Perth shop-local reward system, Mi-rewards, so that incentives are now available for local bus users and people walking and cycling to the city;
- The multi-operator ABC bus ticket and introduction of contactless payment technology by the region's main bus operators;
- Tactran has recently been awarded funds from the MaaS Scotland Investment Fund, to roll out MaaS solutions in partnership with NHS Tayside, Dundee & Angus College and Loch Lomond and the Trossachs National Park;
- The Michelin - Scotland Innovation Parc in Dundee has received funds from the Scottish Enterprise, Dundee City Council and supported by Michelin, which will focus on sustainable mobility, clean transport and low carbon energy
- Ember's proposed Dundee – Edinburgh service, using an electric coach.

These initiatives and others demonstrate a good willingness from the region's transport authorities and other partners to identify and capitalise on the new opportunities becoming available within the transport sector.

BEHAVIOURAL CHANGE

Local authorities in the Tay Cities Region, and Tactran, have been at the forefront of trialling travel behaviour change programmes in Scotland. For over a decade, initiatives including Dundee Travel Active, Perth on the Go, Angus on the Go and Travel Fife have been engaging with residents of the region and encouraging them to adopt more active (walking, cycling, wheeling) and sustainable (including public transport, car share, EVs) travel choices.

Some of these initiatives have yielded significant results (for example, 40% of participants in Dundee Travel Active reported increasing the amount of walking and cycling they did as a result) and most have been well received by their target audiences and key decision makers. Much of the authorities' work focusses on working with young people, which experience has shown is typically cost-effective and has the potential to yield long-term benefits. Some regional stakeholders identify the potential for social prescribing by health professionals to support behavioural change amongst other

cohorts too.

This therefore provides confidence that behavioural change programmes can be effective in helping to meet aspirations for more use of active and sustainable transport choices in the region.

DEVELOPMENT OF THE ACTIVE TRAVEL NETWORK

Development of the active travel network was highlighted by stakeholders as a key opportunity for both leisure and functional trips. Doing so for both purposes "helps people make healthy living choices and assists in delivering places that are happier, more inclusive and equal, and more prosperous"[28].

Transport Scotland's Review of Active Travel Policy Implementation (2016)[29] identifies the factors that enable more people to walk and cycle more often:

- The right infrastructure (good quality routes, connecting the right places, associated parking and other elements)
- The right information
- The right enablers of change (access to bikes, led walks, etc)
- The right attitudes (active travel seen to be relevant, acceptable).

Recent research undertaken for Cycling Scotland[30] shows that, setting aside journeys that are too far to cycle and poor weather, the main perceived barriers to cycling are feeling unsafe and lack of appropriate infrastructure, both of which can be addressed by appropriate network development.

Each of the region's authorities and Tactran are working on proposals to improve the network (including Places for Everyone projects in Arbroath and Perth, Dundee's strategic cycle network proposals and Tactran's active travel audits for many of the region's settlements); these will deliver substantial improvements, but inevitably not provide high-quality facilities for every active journey in the region.

SUPPORTING ECONOMIC CHANGE

The Tay Cities Deal aspires for the region "to be one of the most productive, knowledge-led economies in Europe". 'Connected Tay' is one of the key themes of the Deal, seeking to improve digital and real connectivity of the region.

The Deal states that "Poor connectivity impacts upon the competitiveness of businesses in our region and those who access markets through the region" whilst "Connectivity is also needed to ensure that businesses are able to access markets, customers and suppliers more easily and cost-effectively. Improved connectivity will make our region more attractive to investors and tourists."

The right inter- and intra-regional transport investments can help achieve these

[28] Scottish Government Active Travel Framework, 2019 https://www.transport.gov.scot/media/46400/sct09190900361.pdf

[29] https://www.transport.gov.scot/publication/review-of-active-travel-policy-implementation/

[30] Attitudes and Behaviours Towards Cycling in Scotland https://www.cycling.scot/mediaLibrary/other/english/7268.pdf

outcomes and realise the sustainable economic growth that the region seeks.

Regional partners are already working to identify some potential solutions, including consideration of Aberdeen – Central Belt rail improvements, the seven cities rail proposals and improving access to Montrose port.

PUBLIC TRANSPORT GROWTH

More than three-quarters of the residents of the Tay Cities Region find public transport convenient, and satisfaction with public transport is higher than the national average[31]. Many residents of the region state that they could use public transport to commute to work: 63% of residents of Dundee City, along with 49%, 41% and 39% of Fife[32], Angus and Perth & Kinross respectively[33]. Yet at the 2011 Census, less than 10% of the region's employees commuted by public transport.

These factors support the potential for more people to make use of public transport modes more often (for a variety of journey purposes).

TMfS predicts that rail passenger miles travelled per annum in the Tay Cities Region will increase by 36% between 2014 and 2037 (in line with the national average). However, it also predicts a decline in regional bus use of 12% in the same period, much more than the 5% predicted national average.

TOURISM GROWTH

Regional plans and stakeholders highlight the potential to encourage more tourists to visit the region (and sites within it) by sustainable transport modes, and that transport improvements have the potential to encourage more people to stay in the region for longer.

The Tay Cities Region 2019 Tourism Strategy aspires to "Grow the value of overnight stays across the region from £433m in 2016 to £550m in 2024 (approximately 3% growth year on year); and improve the all-round experience for visitors across the region". The strategy highlight's transport's role in helping deliver this, and particularly the need to facilitate tourist movements by public transport as a greater proportion of visitors seek lower-carbon activities.

3.2.3. *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

[31] Transport Focus, 2018
[32] All of Fife
[33] Travel & Transport in Scotland 2017 (data for 2016)

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 the Tay Cities Region, a review of the national transport model, TMfS, has suggested as outlined above significant increases in road traffic and rail patronage in the coming decades, but a reduction in bus patronage. It should be noted that these forecasts as based on existing forecasts and the new National Transport Strategy sets out to 'reduce the need to travel unsustainably. These forecasts therefore should be revisited considering the New National Transport Strategy.

3.3. Summary

This chapter has discussed problems and opportunities highlighted through data analysis, the stakeholder engagement and informed by the policy review. This in addition to the key points arsing in the socio economic, geographic, transport and environmental content inform the themes and objectives which any interventions should look to address.

Of note are:

- Deprivation: deprivation levels are high in parts of the region, especially (but not only) in parts of Dundee City.
- Transport Exclusion: 27% of Scotland's population do not travel anywhere on a given day. Many people are excluded from transport or find using transport more difficult than they otherwise would, because of issues including physical and mental health needs, lack of appropriate infrastructure, poverty/cost and road safety/personal security concerns.
- Physical Activity and Health: many of the region's residents do not get recommended exercise levels, and the proportion of people walking regularly is falling quickly.
- Limited Transport Choice: parts of the region and some of the region's residents suffer from poor accessibility to key services. Elevated levels of both car dependency and transport poverty result.
- Active Travel Infrastructure: the region's local authorities are working to improve facilities for walking, cycling and wheeling, but many gaps in provision remain.
- Air Pollution: pollution from transport has led to the declaration of four Air Quality Management Areas in the region.
- Carbon Emissions: emissions from transport in the region have been increasing in recent years, in contrast to a (small) national decline.
- Public Transport Availability and Competitiveness: public transport provides good connections for some journeys in the region, but there are many for which it does not provide a convenient, accessible and cost-effective choice. Evidence suggests that there is potential to grow public transport use.
- Freight Movements: the region's transport network caters both for local and cross-regional freight movements. The region's ports are targeting growth, but intermodal transfer facilities in the region are currently very limited.
- Inter- and Cross-Regional Connectivity: cross-regional movements add to congestion and pollution levels in the Tay Cities region. The only direct flight connection from the region is to London Stansted; the region therefore depends on other airports for long-distance connections, but public transport options to access them are very limited.
- Road Capacity: significant congestion on parts of the region's road network at peak times, notably on the Trunk Roads around Perth and Dundee.
- Rail Capacity: recent improvements have increased rail capacity and patronage

is rising.

- Technological Opportunities: the region is showing good willingness to respond to new opportunities to promote inclusive, sustainable transport choices.
- Behavioural Change: there are good examples of programmes that demonstrate the willingness of the region's population to make more use of active and sustainable travel modes.
- Economic Change: the region's economic growth plans (including for tourism) highlight the benefits that improved transport infrastructure and services could have for the region.

4. Transport Planning 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. They will be a key appraisal tool from initial option identification and sifting through to full scheme appraisal and subsequent monitoring/evaluation.

For STPR2, TPOs have been developed to sit at both the national and regional levels. At a national level, an overarching set of programme-level TPOs have been established which are closely aligned with the four priorities, twelve outcomes and 14 policies contained within the National Transport Strategy (NTS2).

A series of regional transport planning objectives sits within the overall direction of the national objectives but with a focus on the specific evidence-based problems and opportunities for the Tay Cities Region. The national and draft emerging regional focused sub-objectives are presented in Table 3 below.

Table 3 - National TPOs and the Regional Sub-Objectives

NATIONAL OBJECTIVE	TAY CITIES REGION SUB-OBJECTIVE
A sustainable strategic transport system that contributes significantly to the Scottish Government's net zero emissions target.	▪ *Reduce the consumption of fossil fuels through managing travel demand and enabling a shift to more sustainable modes of transport.* ▪ *Increase the use of active travel, particularly for shorter journeys within the region and as part of longer multi-modal end-to-end journeys.* ▪ *Improve public transport and opportunities for car sharing as viable alternatives, to reduce single occupancy private car use.* ▪ *Reduce carbon emissions generated by the strategic transport system in the region.*
An inclusive strategic transport system that improves the affordability and accessibility of public transport.	▪ *Increase public transport share by connecting sustainable modes of transport to facilitate integrated journeys, especially at major transport nodes.* ▪ *Improve mobility and inclusion, particularly for members of vulnerable and disadvantaged groups.* ▪ *Reduce transport poverty in relation to the level of household income spent on transport, particularly in more deprived areas of the region.* ▪ *Improve public transport access to key services.*
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.	▪ *Reduce demand for unsustainable travel and the adverse impacts of transport on people and places/communities by supporting and embedding the place principle changes to the strategic transport system across the region.* ▪ *Increase the share of active travel, particularly for shorter journeys within the region and as part of longer multi-modal end-to-end journeys.* ▪ *Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of the Local Development Plans and emerging NPF4.* ▪ *Reduce emissions from transport that are harmful to people's health.*
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.	▪ *Increase access for the region's population to education, training, employment and tourism, and expand labour market catchments.* ▪ *Improve sustainable and competitive transport access to key domestic and international markets, for the Tay Cities Region and those other parts of Scotland that are dependent on the region's transport network.* ▪ *Make better use of existing transport infrastructure through the adoption of beneficial transport innovations.* ▪ *Enable the transfer of freight movements to sustainable modes.*

A reliable and resilient strategic transport system that is safe and secure for travellers.	▪ *Increase resilience from disruption on the region's road and rail infrastructure.* ▪ *Reduce transport related casualties in line with reduction targets.* ▪ *Improve perceived and actual security of the transport network with a particular focus on for those people – especially young people and the elderly – for whom this is a particular barrier to travel.*

Table 4 demonstrates the alignment of the objectives/outcomes developed for the Tay Cities Region with the identified problems and opportunity themes in the region.

Table 4 - Mapping of Problem and Opportunity Themes to Transport Planning Objectives

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme									Opportunity Theme								
		Deprivation	Transport Exclusion	Physical Activity & Health	Limited Transport Choice	Active Travel Facilities	Air Pollution	Carbon Emissions	Public Transport Availability	Freight Movements	Inter- and Cross-Regional	Road Capacity Constraints	Rail Capacity and Access	Technological Opportunities	Behavioural Change	Active Travel Network	Support Economic Change	Public Transport Growth	Tourism Growth
A sustainable strategic transport system that contributes significantly to the Scottish Government's net zero emissions target.	Reduce the consumption of fossil fuels through managing travel demand and enabling a shift to more sustainable modes of transport.					■	■	■	■	■	■			■	■	■		■	
	Increase the use of active travel, particularly for shorter journeys within the region and as part of longer multi-modal end-to-end journeys.	■	■	■		■	■	■				■			■	■		■	
	Improve public transport and opportunities for car sharing as viable alternatives, to reduce single occupancy private car use.	■	■		■		■	■	■		■	■	■					■	
	Reduce carbon emissions generated by the strategic transport system in the region.						■	■	■		■	■	■	■	■			■	

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme									Opportunity Theme								
		Deprivation	Transport Exclusion	Physical Activity & Health	Limited Transport Choice	Active Travel Facilities	Air Pollution	Carbon Emissions	Public Transport Availability	Freight Movements	Inter- and Cross-Regional	Road Capacity Constraints	Rail Capacity and Access	Technological Opportunities	Behavioural Change	Active Travel Network	Support Economic Change	Public Transport Growth	Tourism Growth
An inclusive strategic transport system that improves the affordability and accessibility of public transport.	Increase public transport share by connecting sustainable modes of transport to facilitate integrated journeys, especially at major transport nodes.	■	■		■		■	■	■				■			■		■	
	Improve mobility and inclusion, particularly for members of vulnerable and disadvantaged groups.	■	■	■	■				■		■					■		■	
	Reduce transport poverty in relation to the level of household income spent on transport, particularly in more deprived areas of the region.	■	■	■	■	■			■							■		■	
	Improve public transport access to key services.	■	■		■				■				■				■	■	■

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme									Opportunity Theme								
		Deprivation	Transport Exclusion	Physical Activity & Health	Limited Transport Choice	Active Travel Facilities	Air Pollution	Carbon Emissions	Public Transport Availability	Freight Movements	Inter- and Cross-Regional	Road Capacity Constraints	Rail Capacity and Access	Technological Opportunities	Behavioural Change	Active Travel Network	Support Economic Change	Public Transport Growth	Tourism Growth
A cohesive strategic transport system that enhances communities as places, supporting health and wellbeing.	Reduce demand for unsustainable travel and the adverse impacts of transport on people and places/communities by supporting and embedding the place principle changes to the strategic transport system across the region.	■		■		■	■			■		■							
	Increase the share of active travel, particularly for shorter journeys within the region and as part of longer multi-modal end-to-end journeys.	■	■	■		■	■	■				■			■	■		■	
	Reduce demand for unsustainable travel arising from nationally significant growth areas, taking cognisance of the Local Development Plans and emerging NPF4.							■	■		■	■	■			■	■	■	

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme									Opportunity Theme								
		Deprivation	Transport Exclusion	Physical Activity & Health	Limited Transport Choice	Active Travel Facilities	Air Pollution	Carbon Emissions	Public Transport Availability	Freight Movements	Inter- and Cross-Regional	Road Capacity Constraints	Rail Capacity and Access	Technological Opportunities	Behavioural Change	Active Travel Network	Support Economic Change	Public Transport Growth	Tourism Growth
	Reduce emissions from transport that are harmful to people's health.	■					■			■		■							
An integrated strategic transport system that contributes towards sustainable inclusive growth in Scotland.	Increase access for the region's population to education, training, employment and tourism, and expand labour market catchments.	■	■		■				■							■	■		■
	Improve sustainable and competitive transport access to key domestic and international markets, for the Tay Cities Region and those other parts of Scotland that are dependent on the region's transport network.							■	■	■	■	■	■				■	■	■
	Make better use of existing transport infrastructure through the adoption of beneficial transport innovations.													■	■		■		
	Enable the transfer of freight movements to sustainable modes.						■	■		■	■	■					■		■

National Objective/Outcome	Regional Sub-Objective/Outcome	Problem Theme								Opportunity Theme								
		Deprivation	Transport Exclusion	Physical Activity & Health	Limited Transport Choice	Active Travel Facilities	Air Pollution	Carbon Emissions	Public Transport Availability	Freight Movements	Inter- and Cross-Regional	Road Capacity Constraints	Rail Capacity and Access	Technological Opportunities	Behavioural Change	Active Travel Network	Support Economic Change	Public Transport Growth	Tourism Growth
A reliable and resilient strategic transport system that is safe and secure for travellers.	Increase resilience from disruption on the region's road and rail infrastructure.							■				■	■				■		
	Reduce transport related casualties in line with reduction targets.	■	■	■		■													
	Improve perceived and actual security of the transport network with a particular focus on for those people – especially young people and the elderly – for whom this is a particular barrier to travel	■	■	■		■						■							

5. Approach to Option Generation and Sifting

5.1. Strategic Options

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

Specifically, this will include:

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

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

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

A strategic transport project will not include:

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

5.2. Approach

Going forward, a long list of options will be developed and sifted in line with the approach set out in Figure 34:

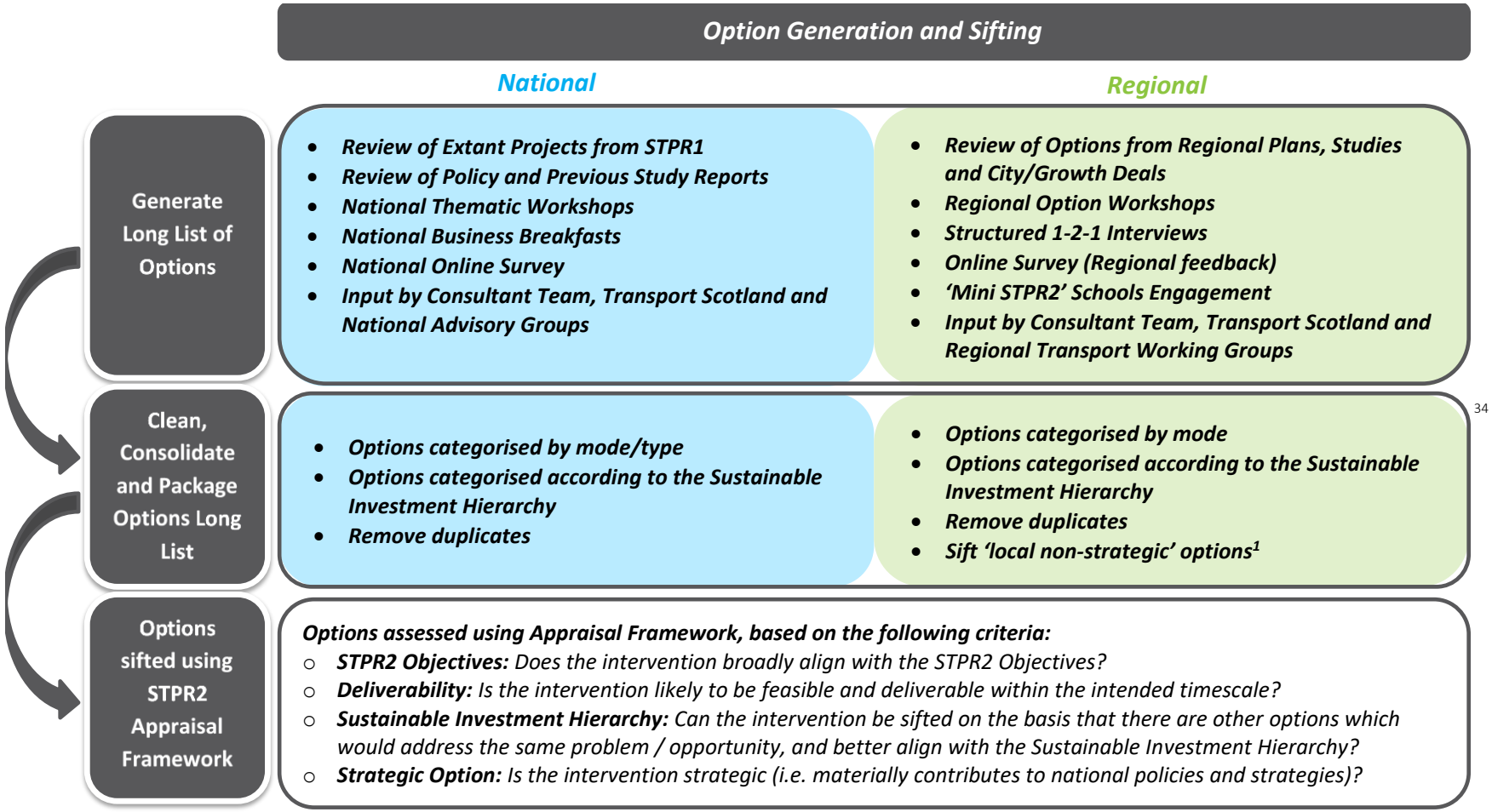


Figure 34- Approach to Option Generation and Sifting

[34] 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.

The resulting short list of interventions will be appraised in line with the STAG-based Appraisal Framework developed for STPR2.

A long list of interventions for consideration through STPR2 will be generated from a range of national and regional option generation exercises.

The process of option generation for STPR2 is being informed and structured around the sustainable investment hierarchy which is outlined within the NTS2, shown in Figure 35.

Figure 35- 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.

5.3.1. *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

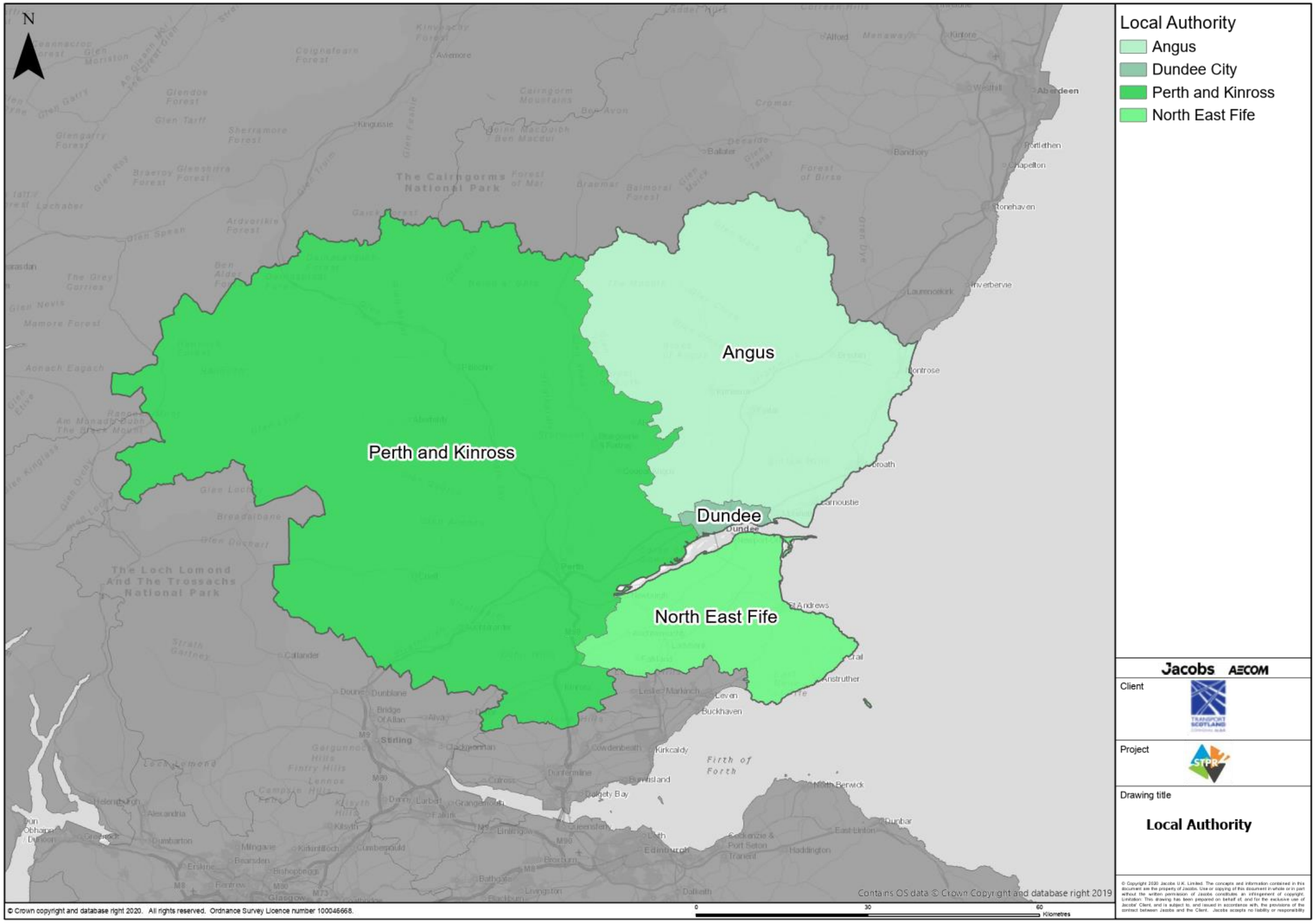
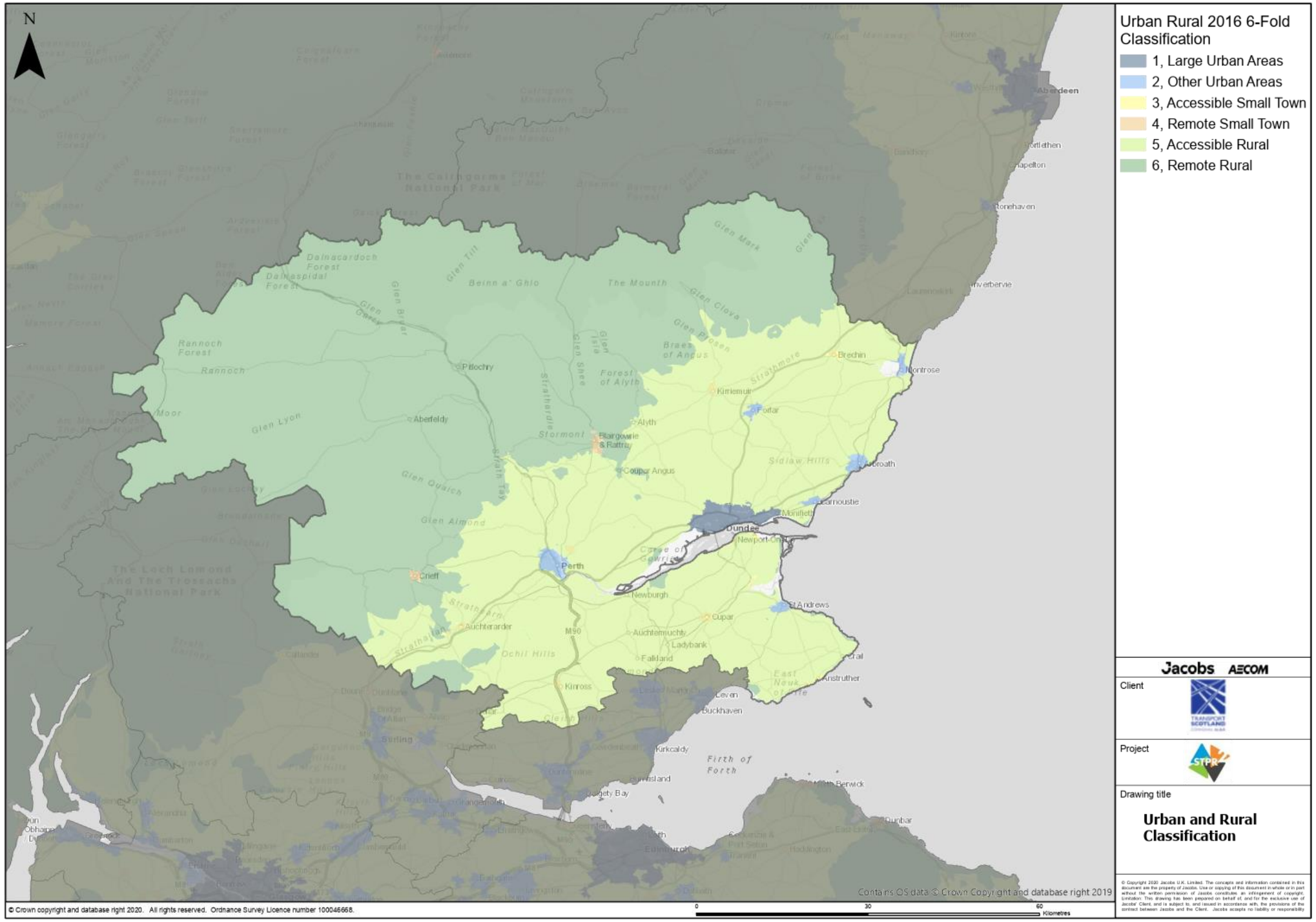


Figure A. 1 - Tay Cities Region Study Area (click image to go back to main report)


N
Urban Rural 2016 6-Fold Classification
1, Large Urban Areas
2, Other Urban Areas
3, Accessible Small Town
4, Remote Small Town
5, Accessible Rural
6, Remote Rural
Aberdeen
Portlethen
Stonehaven
Laurencekirk
Inverbervie
Brechin
Montrose
Kirriemuir
Forfar
Arbroath
Carnoustie
Monifieth
Dundee
Newport-on-Tay
Coupar Angus
Blairgowrie & Rattray
Alyth
Pitlochry
Aberfeldy
Perth
Crieff
Newburgh
St Andrews
Cupar
Auchtermuchty
Ladybank
Falkland
Auchterarder
Kinross
Leven
Buckhaven
Kirkcaldy
Cowdenbeath
Dunfermline
Inverkeithing
Dalgety Bay
Burntisland
Glenrothes
Methil
Leslie
Markinch
Thornton
Kennoway
Lundin Links
Largoward
Anstruther
Crail
Pittenweem
St Monans
Elie
Earlsferry
Colinsburgh
Lower Largo
Upper Largo
Kilconquhar
Elie
North Berwick
Dunbar
East Linton
Haddington
Musselburgh
Prestonpans
Cockenzie & Port Seton
Tranent
Edinburgh
Dalkeith
Penicuik
Bonnyrigg
Loanhead
Gorebridge
Stonehouse
Lasswade
Eskbank
Newtongrange
Dalkeith
Bilston
Roslin
Rosewell
Pathhead
Ormiston
Tranent
Cockenzie & Port Seton
Prestonpans
Musselburgh
Haddington
East Linton
Dunbar
North Berwick
Anstruther
Crail
Pittenweem
St Monans
Elie
Earlsferry
Colinsburgh
Lower Largo
Upper Largo
Kilconquhar
Leven
Buckhaven
Kirkcaldy
Cowdenbeath
Dunfermline
Inverkeithing
Dalgety Bay
Burntisland
Glenrothes
Methil
Leslie
Markinch
Thornton
Kennoway
Lundin Links
Largoward
Cupar
Auchtermuchty
Ladybank
Falkland
Auchterarder
Kinross
Perth
Crieff
Newburgh
St Andrews
Coupar Angus
Blairgowrie & Rattray
Alyth
Pitlochry
Aberfeldy
Brechin
Montrose
Kirriemuir
Forfar
Arbroath
Carnoustie
Monifieth
Dundee
Newport-on-Tay
Aberdeen
Portlethen
Stonehaven
Laurencekirk
Inverbervie
The Cairngorms National Park
The Loch Lomond And The Trossachs National Park
Ochil Hills
Sidlaw Hills
Braes of Angus
Forest of Alyth
Rannoch Forest
Rannoch Moor
Glen Lyon
Glen Quaich
Glen Almond
Glen Clova
Glen Prosen
Glen Mark
Glen Tilt
Glen Isla
Glen Shee
Glen Brerachan
Glen Garry
Glen Esk
Glen Dye
Glen Tanar
Glen Muick
Glen Gairn
Glen Avon
Glen Livet
Glen Rinnes
Glen Fiddich
Glen Grant
Glen Spean
Glen Nevis
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Glen Cannich
Glen Strathfarrar
Glen Urquhart
Glen Moriston
Glen Garry

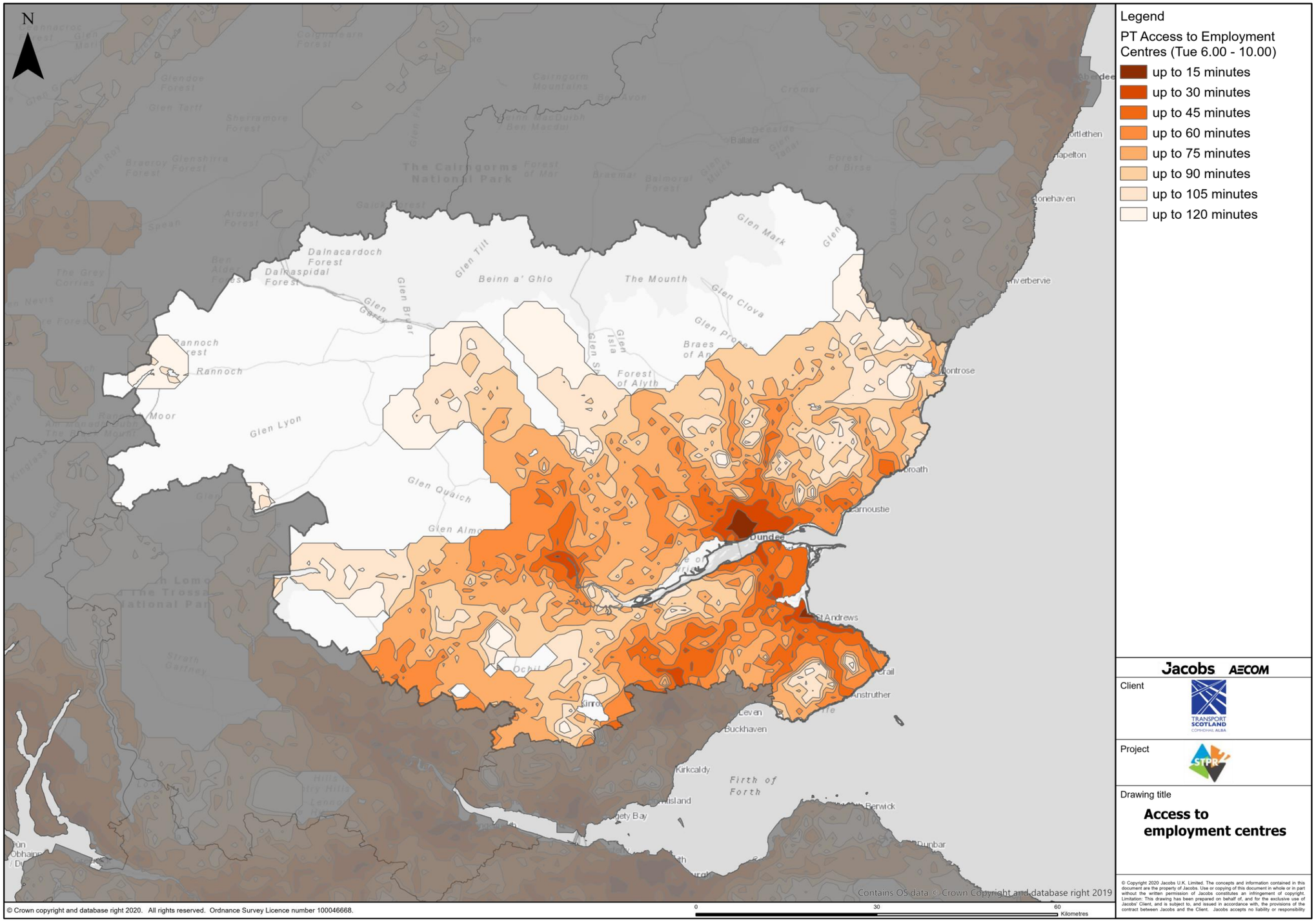

Figure A. 3 - AM journey time isochrones to key employment areas, by public transport (click image to go back to main report)

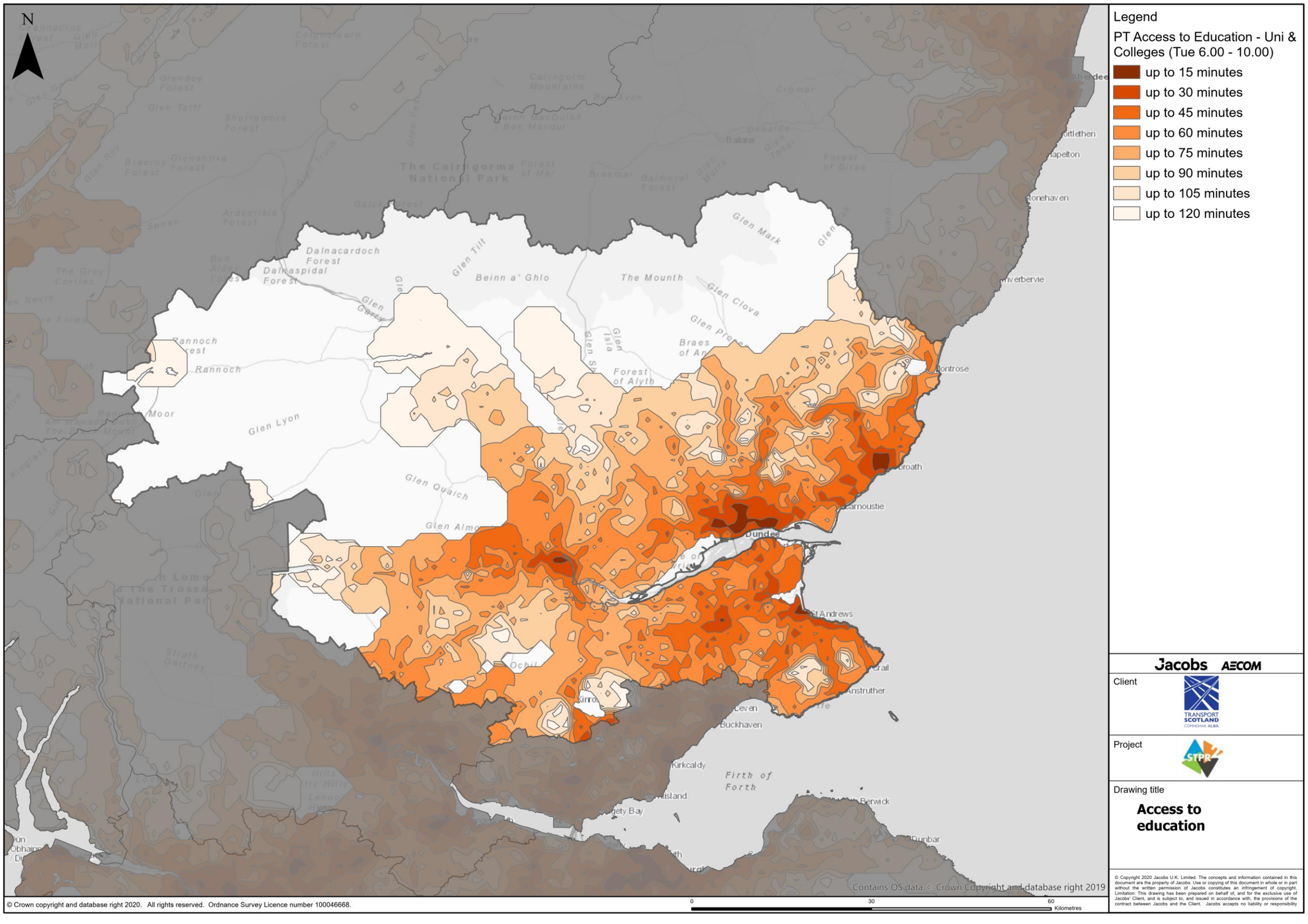

Figure A. 4 - AM period journey time isochrones to further and higher education, by public transport (click image to go back to main report)

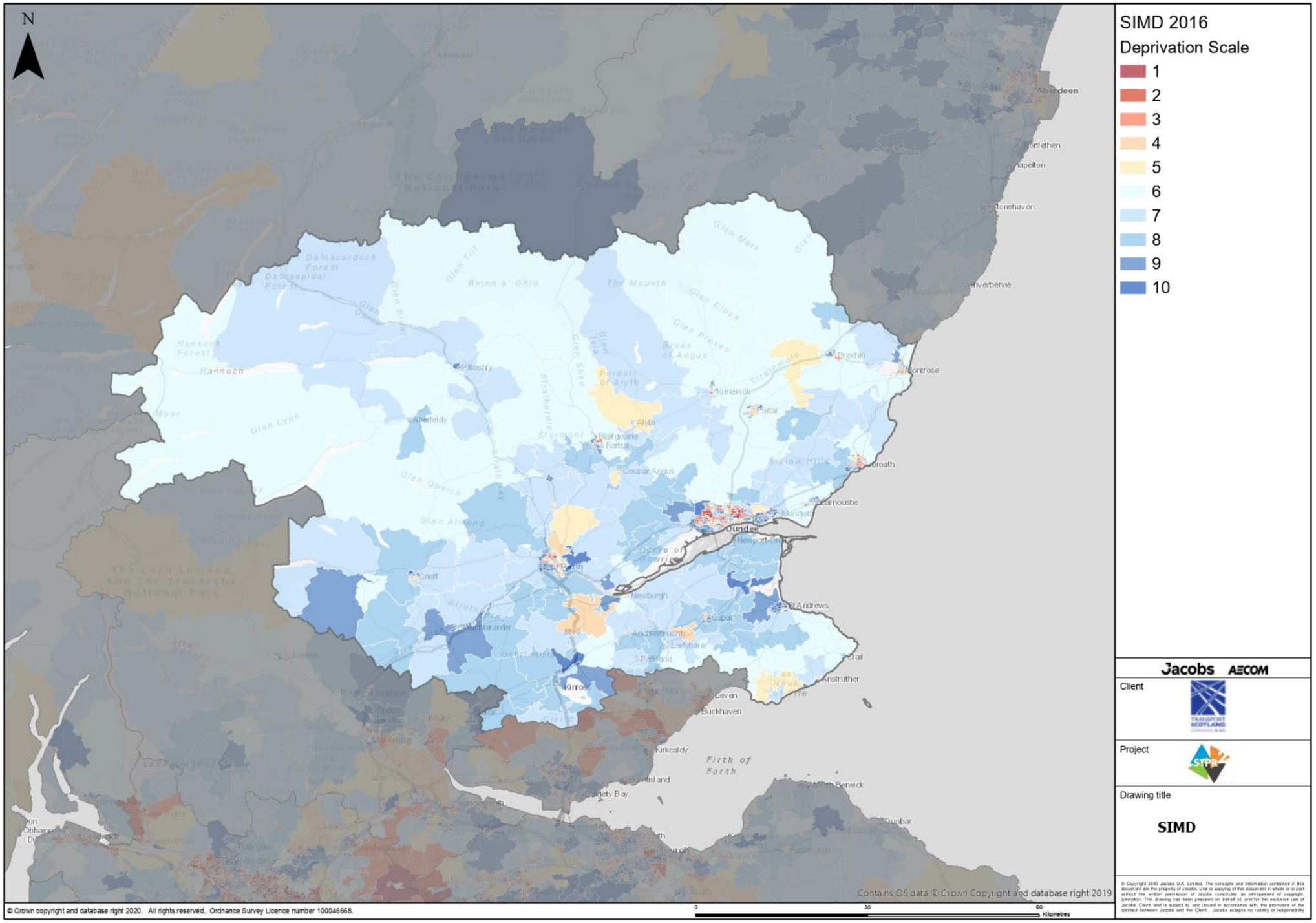

Figure A. 5 - SIMD datazone locations for Tay Cities region, coloured by decile ranking (click image to go back to main report)

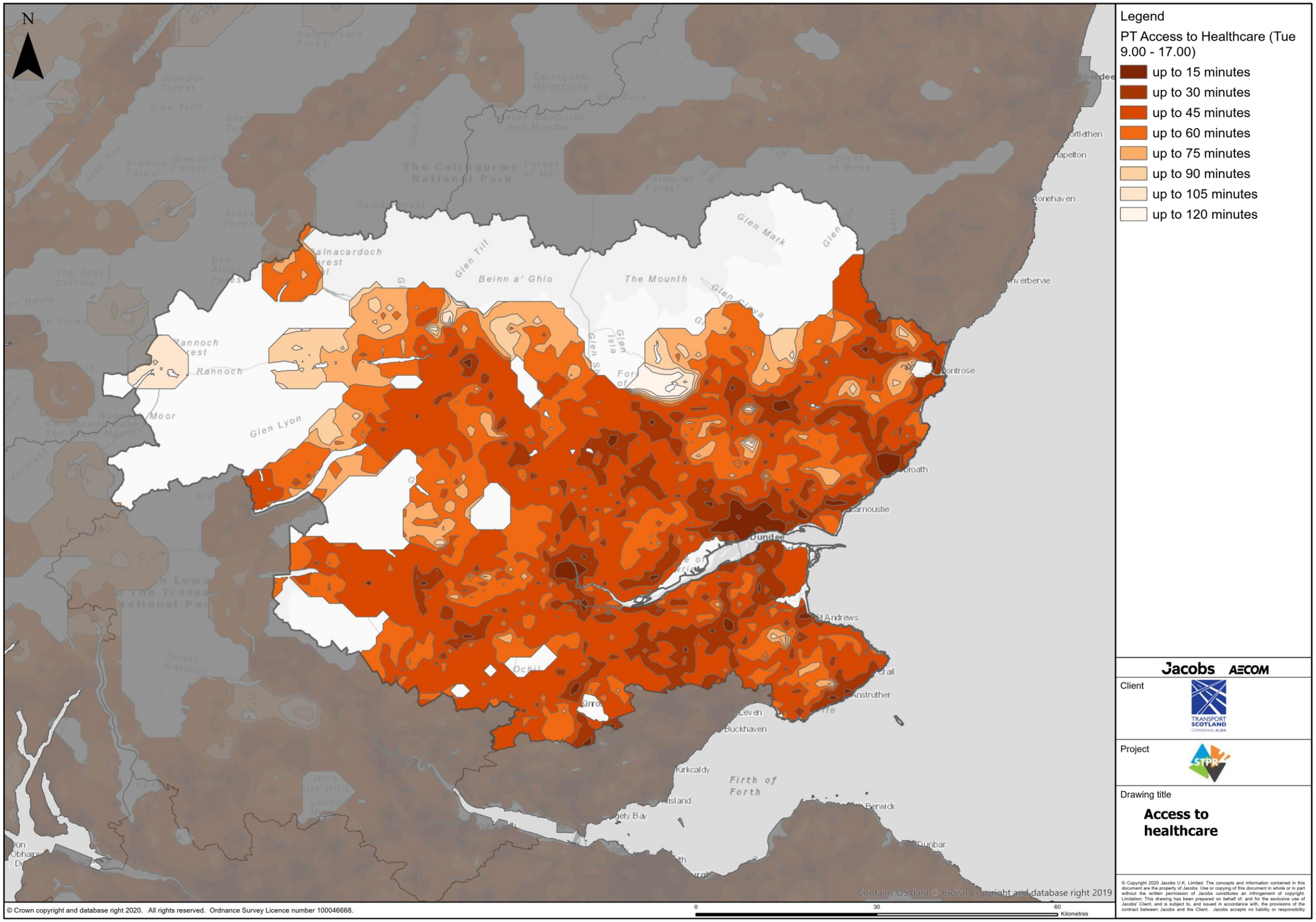

Figure A. 6 - AM period journey time isochrones to healthcare (hospitals and GPs), by public transport (click image to go back to main report)

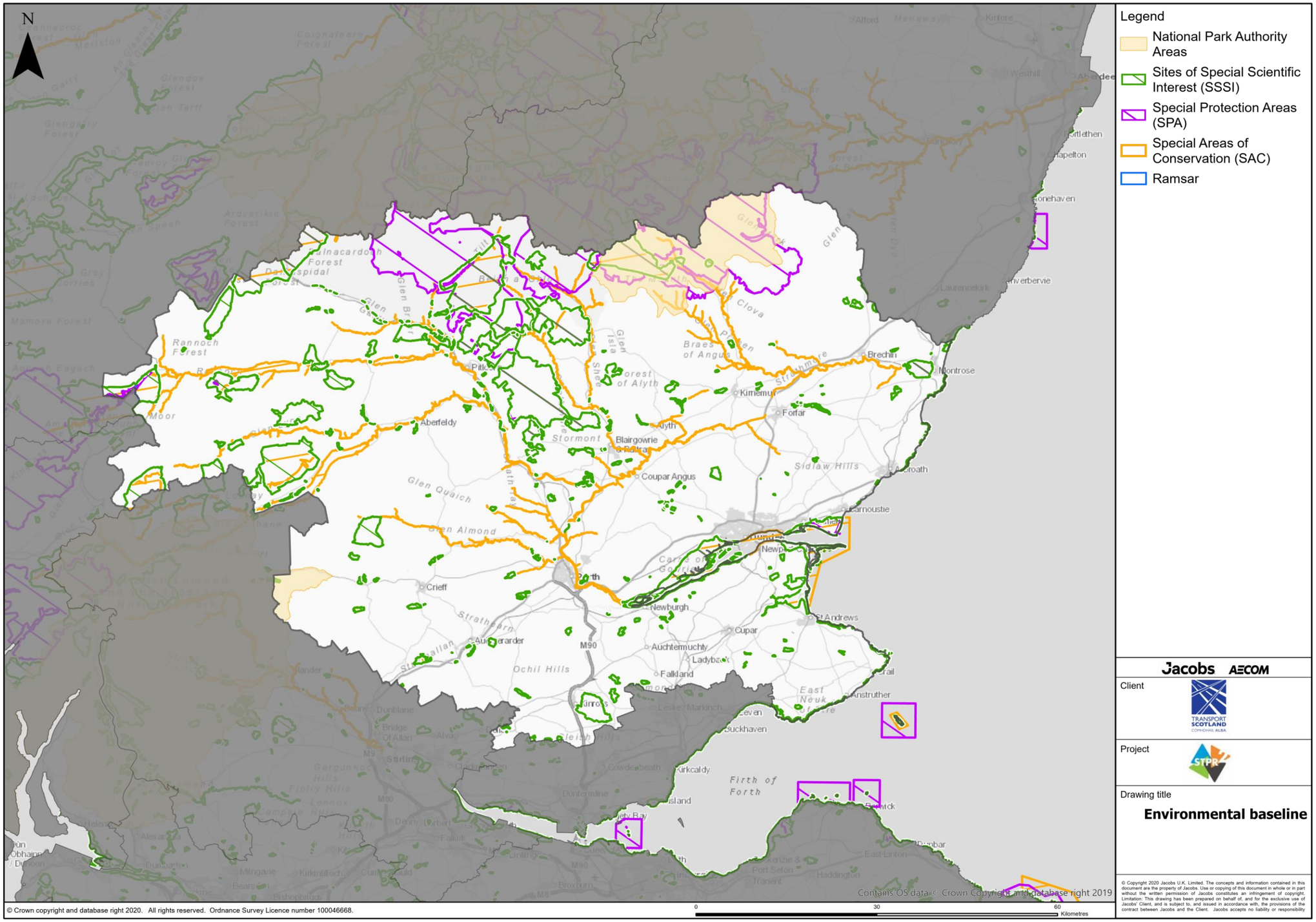

Figure A. 7 - Environmental designations map for Tay Cities Region (click image to go back to main report)

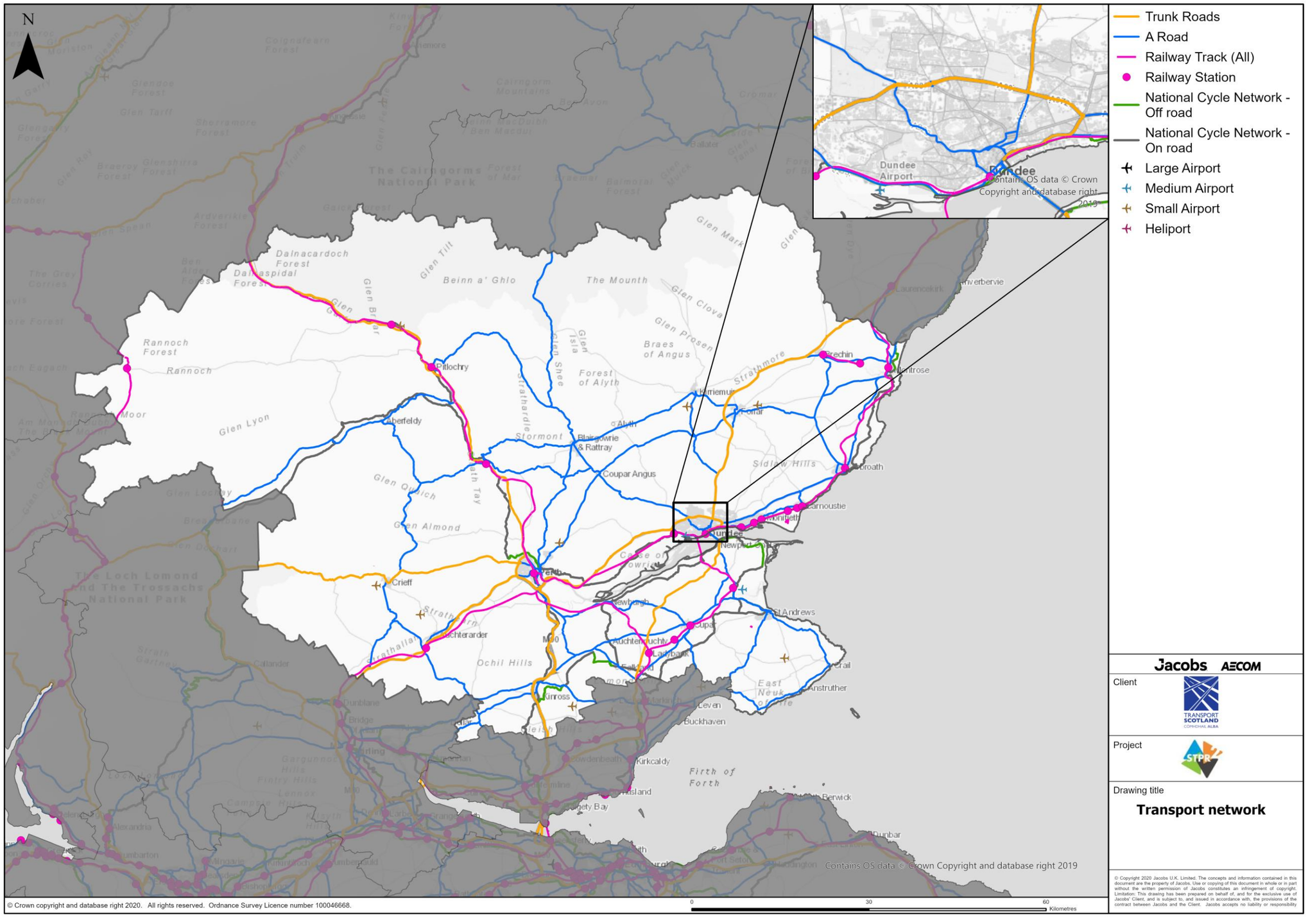

Figure A. 8 - Tay Cities Region Transport Network (click image to go back to main report)

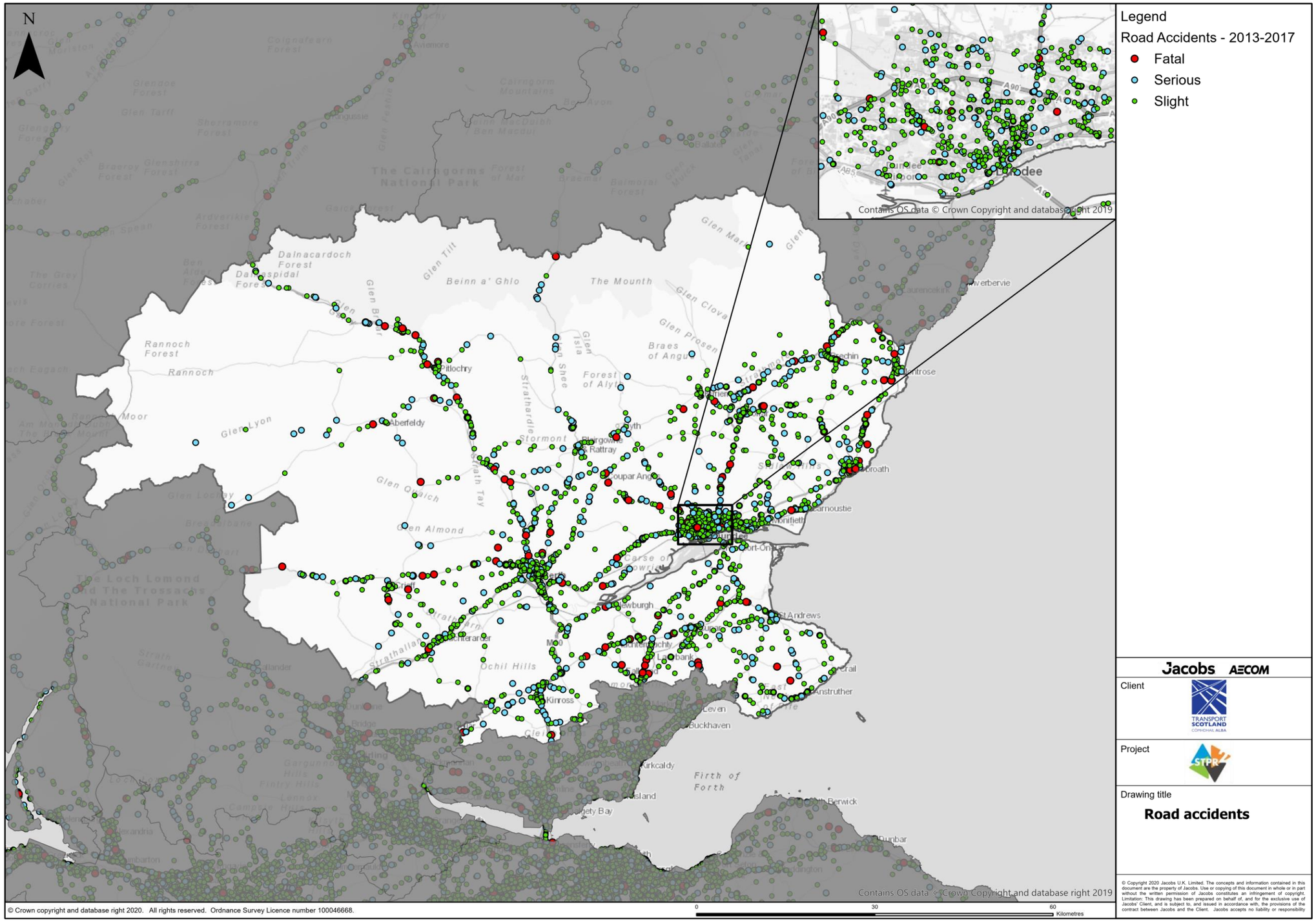

Figure A. 9 - Locations of Road Accidents (Slight, Serious and Fatal) in Tay Cities Region from 2013-2017 (click image to go back to main report)

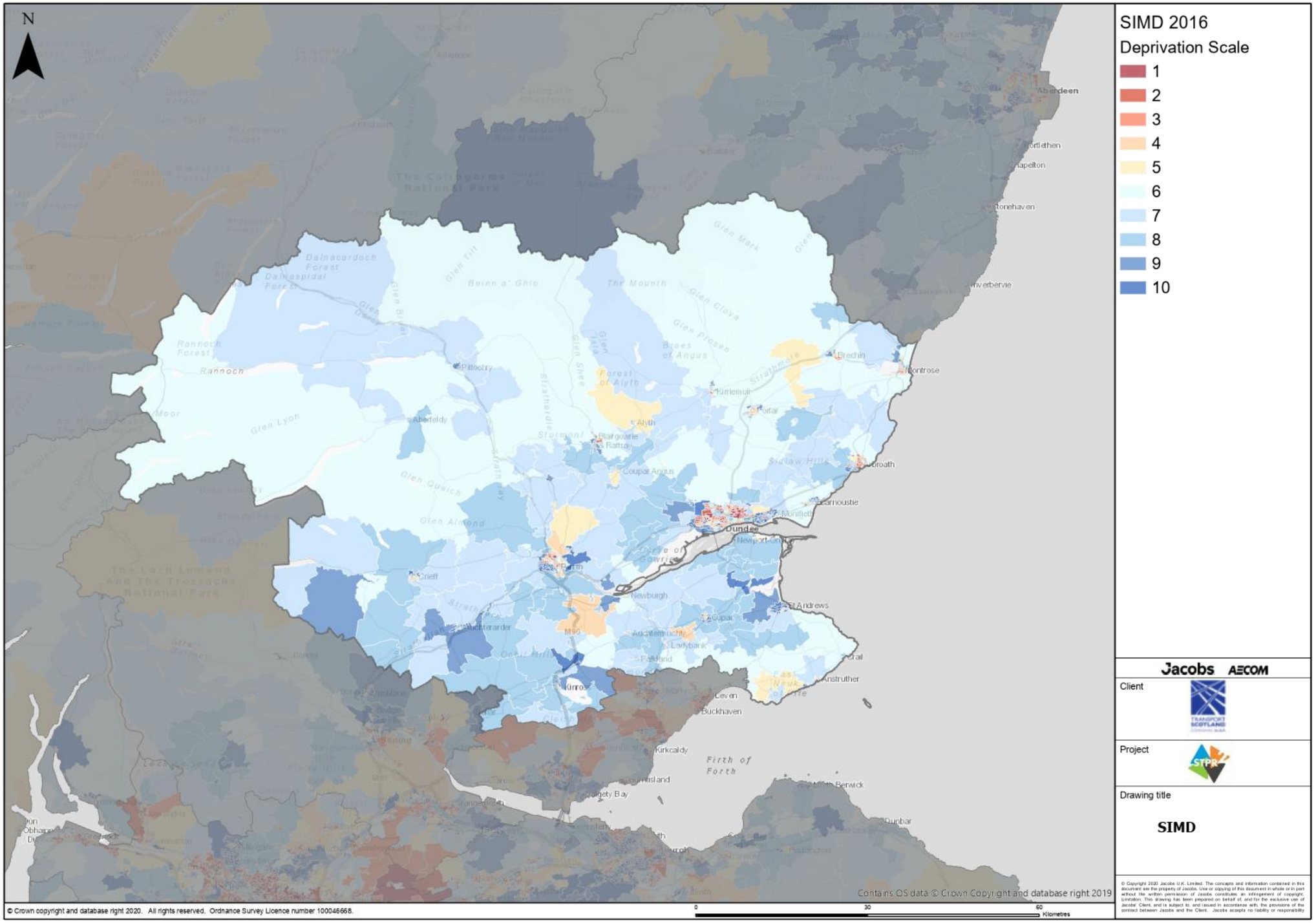

Figure A. 10 - SIMD datazone locations for Tay Cities Region, coloured by decile ranking (click image to go back to main report)

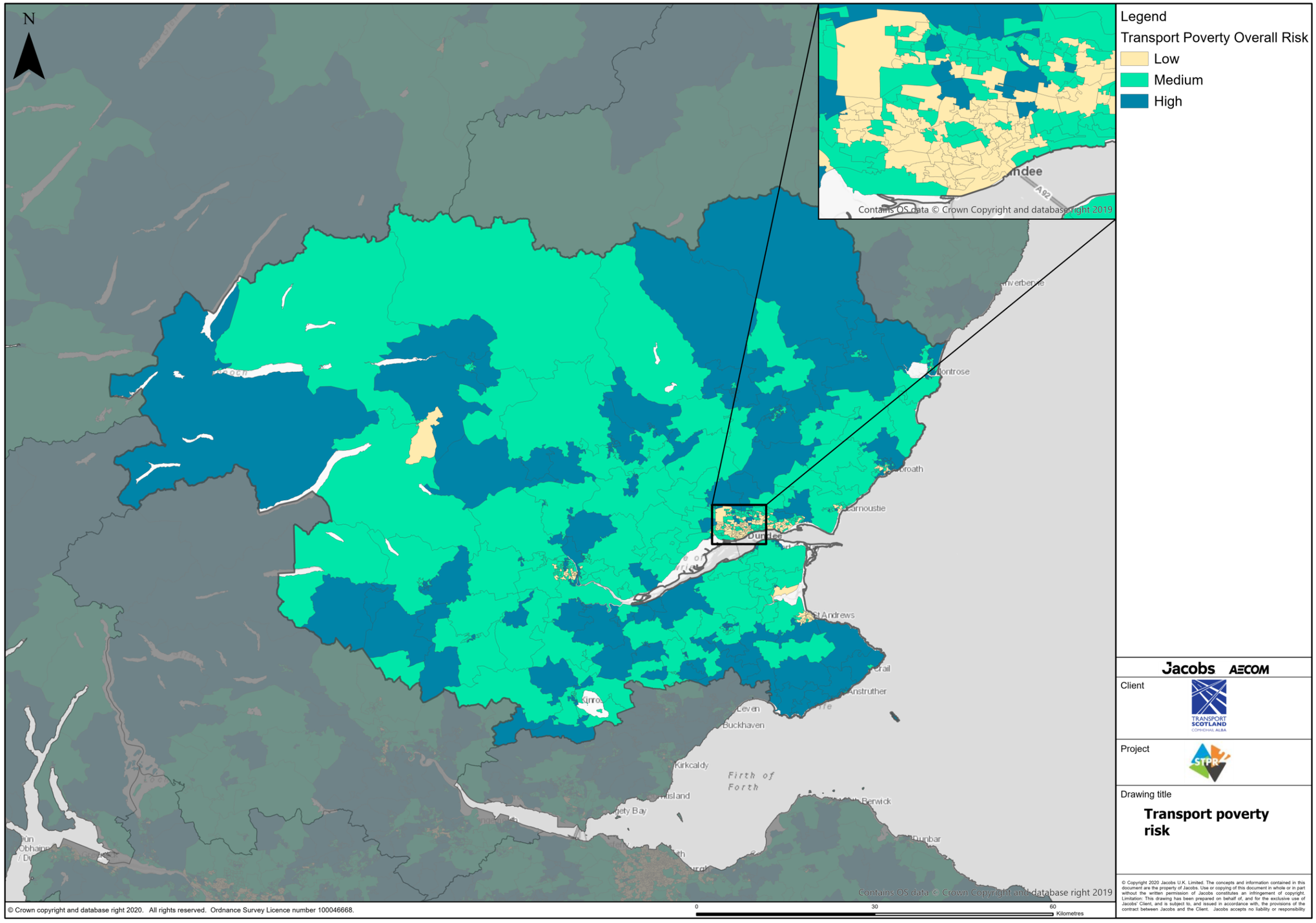

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Figure A. 11 – Risk of transport poverty in the Tay Cities Region (click image to go back to main report)

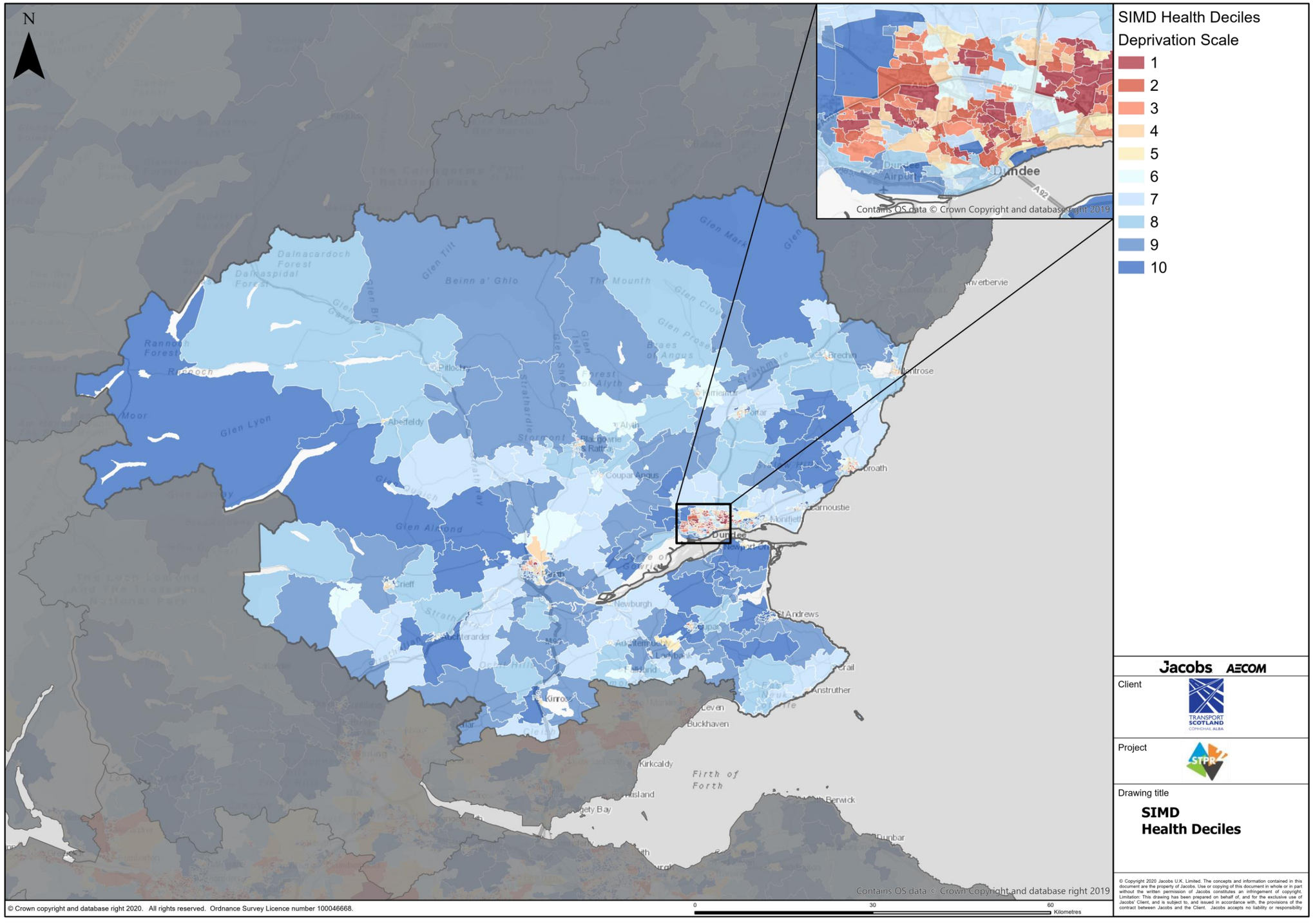


Figure A. 12 - SIMD health rankings Tay Cities region, coloured by decile ranking (click image to go back to main report)

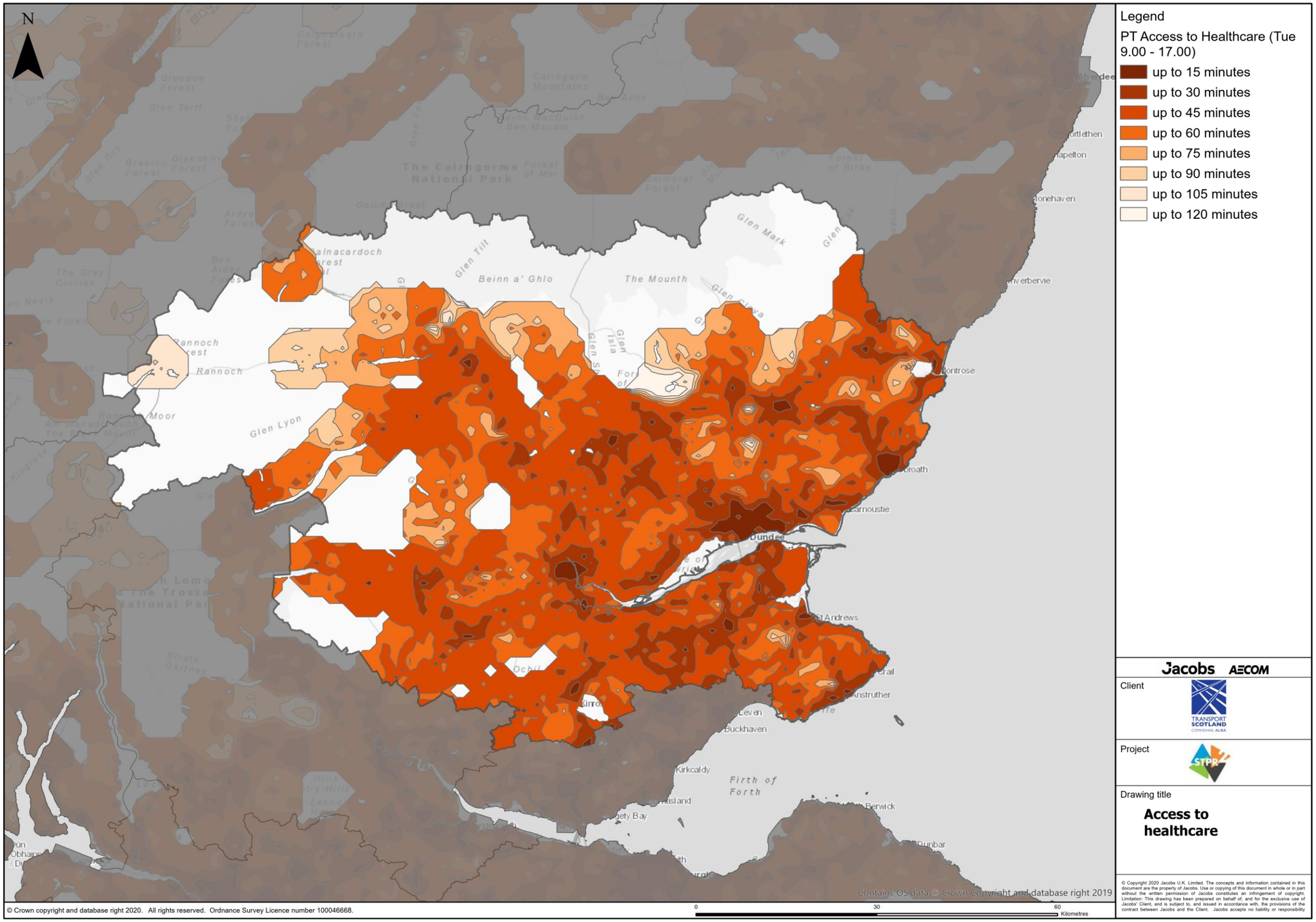


Figure A. 13 - Public transport accessibility to health facilities (0900-1700) (click image to go back to main report)

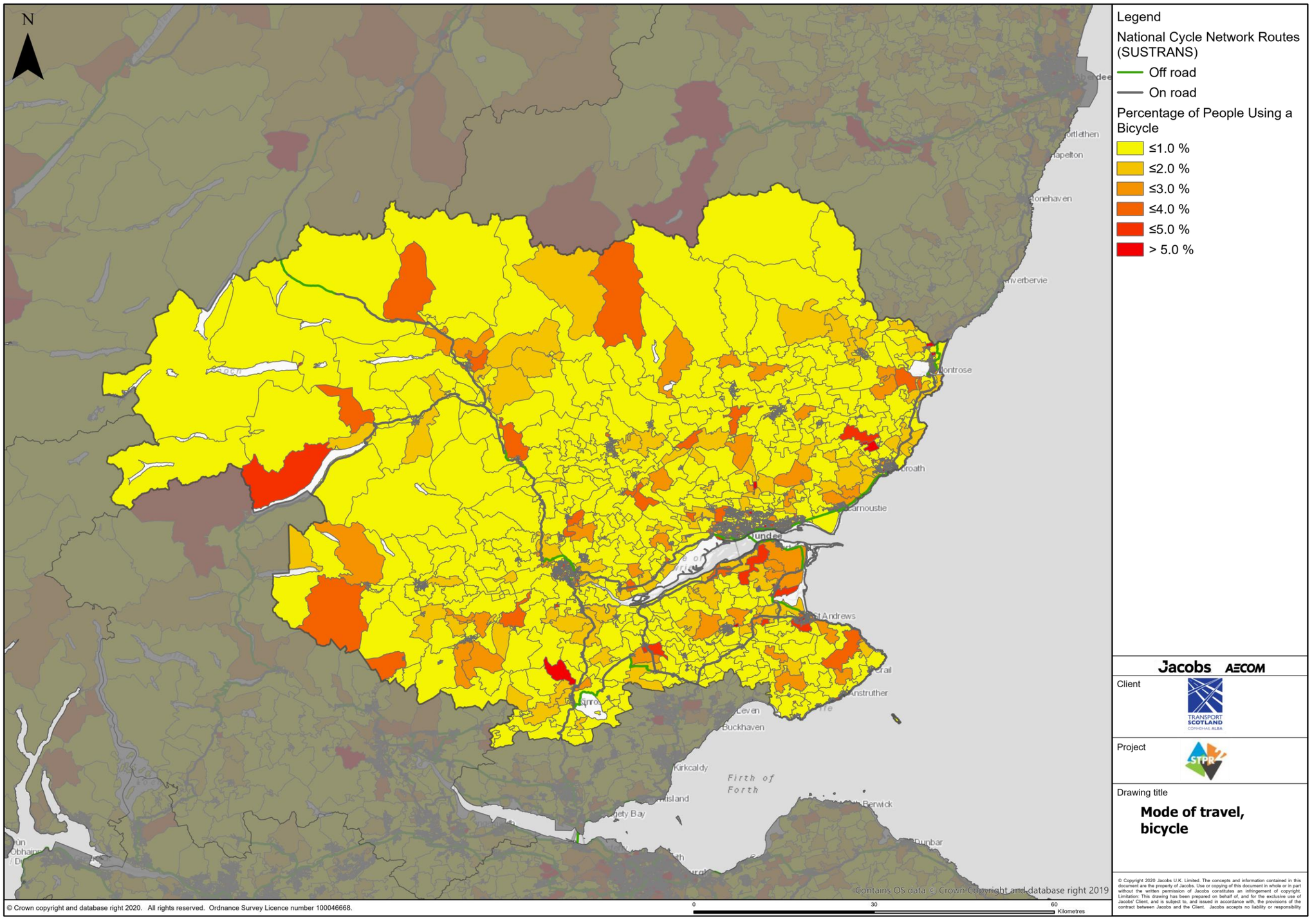
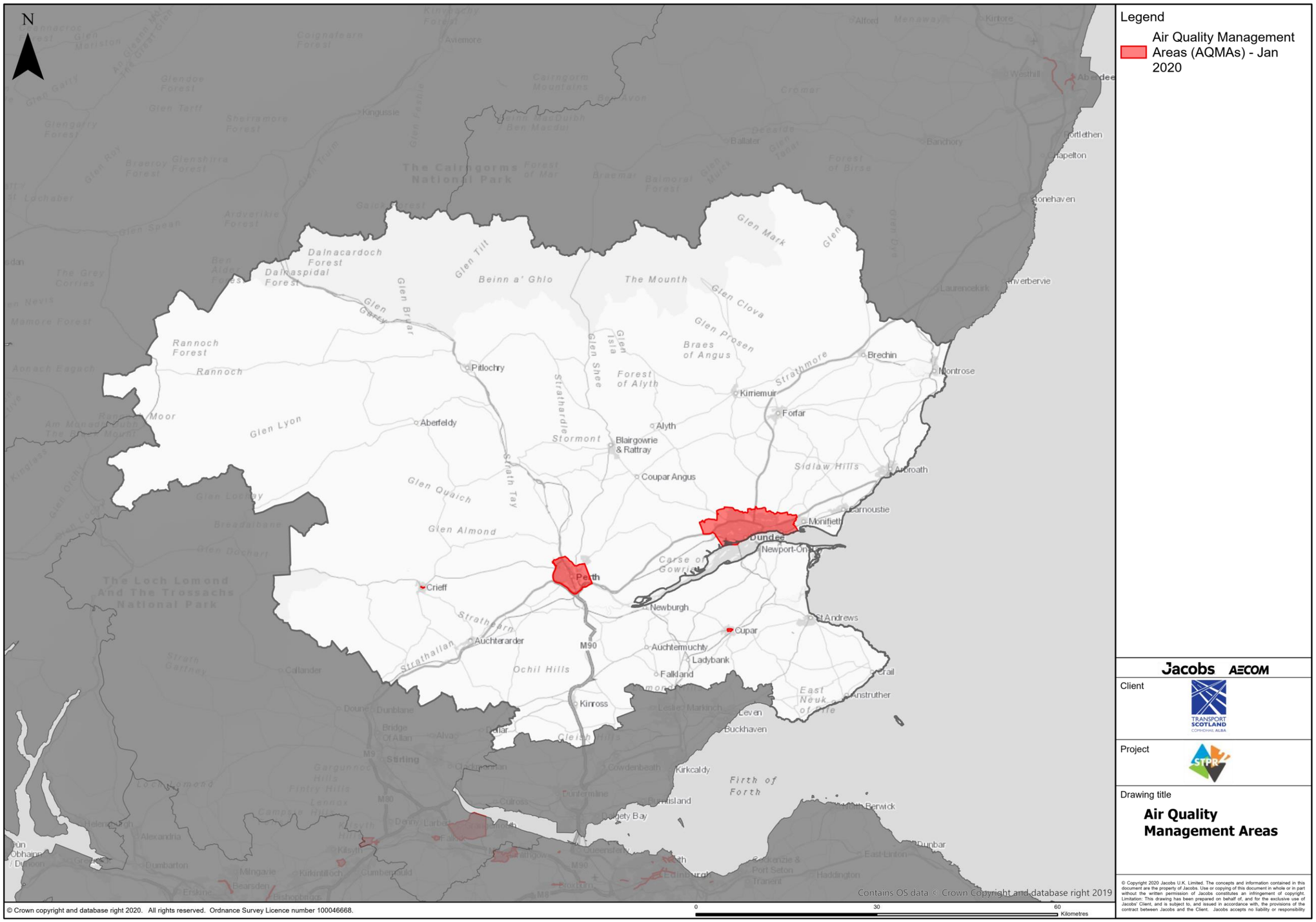


Figure A. 14 - Mode of Travel to Work (Bicycle) (click image to go back to main report)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Legend
Air Quality Management Areas (AQMAs) - Jan 2020
Jacobs AECOM
Client
TRANSPORT SCOTLAND
Project
Drawing title
Air Quality Management Areas
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0
30
60
Kilometres
The Cairngorms National Park
The Loch Lomond And The Trossachs National Park
Aviemore
Kingussie
Ballater
Banchory
Aberdeen
Stonehaven
Laurencekirk
Inverbervie
Brechin
Montrose
Kirriemuir
Forfar
Pitlochry
Aberfeldy
Alyth
Blairgowrie & Rattray
Coupar Angus
Arbroath
Carnoustie
Monifieth
Dundee
Newport-On-Tay
Perth
Crieff
Newburgh
St Andrews
Cupar
Auchtermuchty
Ladybank
Falkland
Auchterarder
Callander
Kinross
Leven
Buckhaven
Kirkcaldy
Cowdenbeath
Dunfermline
Burntisland
Berwick
Dunbar
East Linton
Haddington
Stirling
Dunblane
Bridge Of Allan
Alva
Doune
Alexandria
Dumbarton
Milngavie
Bearsden
Kirkintilloch
Erskine
Bishopbriggs
Cumbernauld
Denny
Larbert
Falkirk
Grangemouth
Cumbernauld
Musselburgh
Prestonpans
Tranent
Glen Lyon
Glen Quaich
Glen Almond
Glen Lochay
Glen Dochart
Breadalbane
Rannoch Moor
Rannoch Forest
Dalnacardoch Forest
Dalnaspidal Forest
Glen Tilt
Beinn a' Ghlo
The Mounth
Glen Clova
Glen Prosen
Braes of Angus
Glen Mark
Glen Isla
Glen Shee
Glen Garry
Glen Brerar
Forest of Alyth
Strathmore
Strathardle
Stormont
Strath Tay
Strathearn
Strathallan
Ochil Hills
Sidlaw Hills
Carse of Gowrie
Firth of Forth
East Neuk of Fife
Fintry Hills
Gargunnock Hills
Campsie Fells
Lennox
Touch Hills
Cleish Hills
Braes of Doune
Glen Tarff
Glen Feshie
Glen Truim
Glen Spean
Glen Roy
Glen Garry
Glen Orchy
Glen Lochay
Glen Dochart
Glen Ogle
Glen Artney
Glen Buck
Glen Esk
Glen Clova
Glen Prosen
Glen Isla
Glen Shee
Glen Brerar
Glen Tilt
Glen Mark
Glen Garry

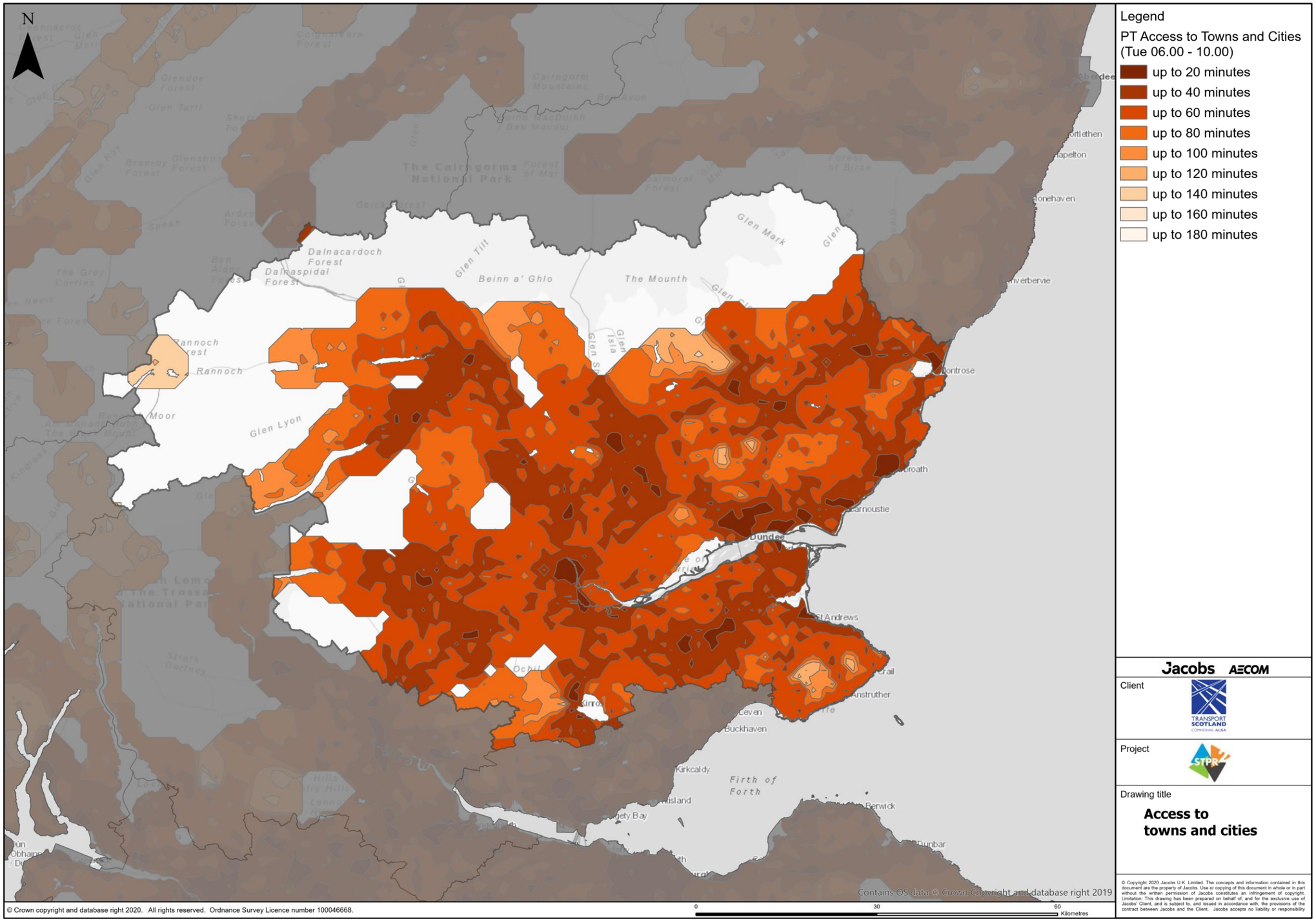

Figure A. 16 - Public transport accessibility to town centres (0600-1000) (click image to go back to main report)

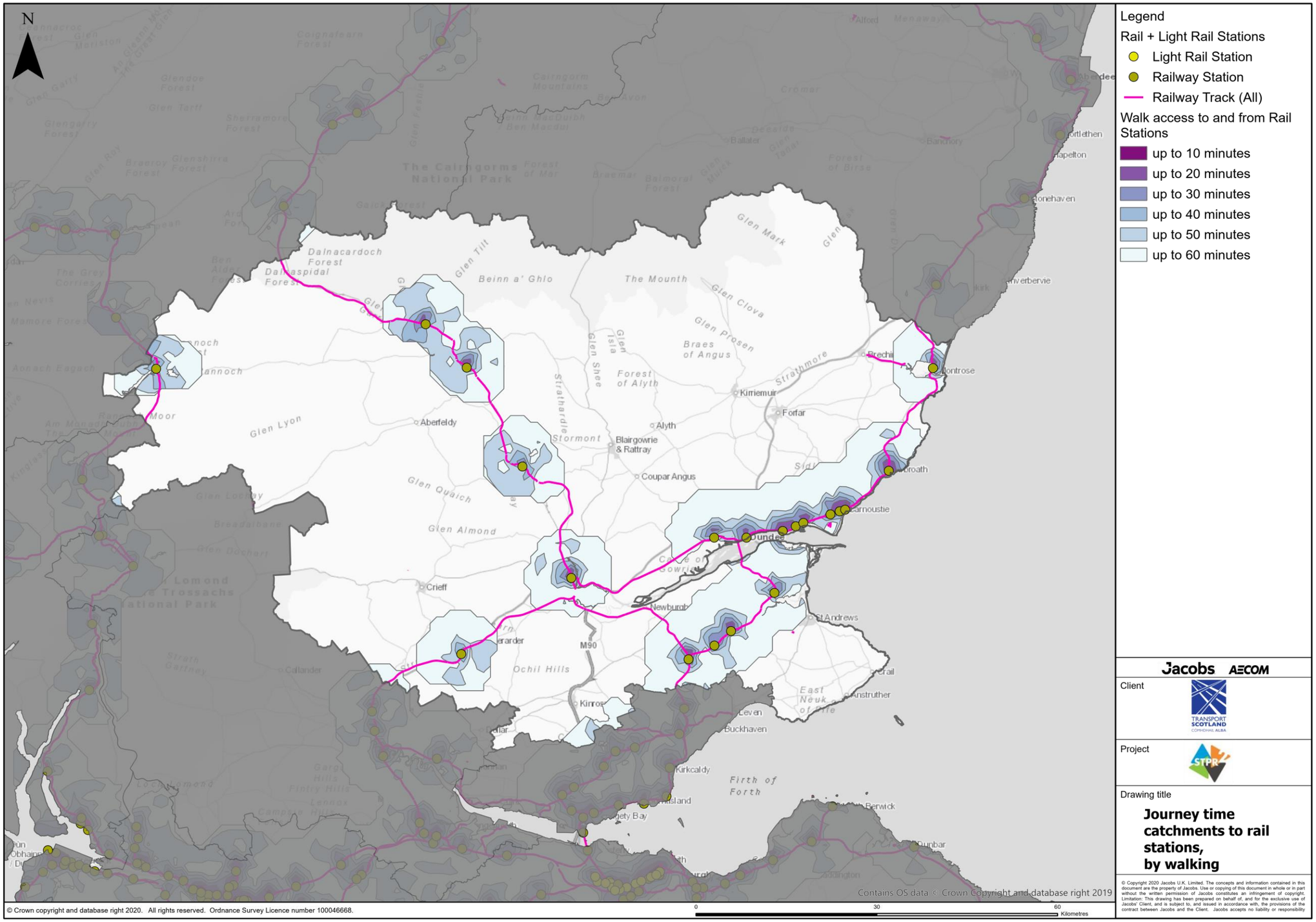

Figure A. 17 - Journey time catchments to rail stations, by walking (click image to go back to main report)

Appendix B: List of Policy Documents

Theme	Title	Author	Year
Development	The Tay Cities Deal	Tay Cities RWG	2017
Development	Strategic Development Plan	TAYplan	2016
Development	Angus Local Development Plan	Angus Council	2016
Development	Dundee Local Development Plan	Dundee City Council	2019
Development	FIFEplan	Fife Council	2017
Development	Perth & Kinross Local Development Plan	Perth & Kinross Council	2014
Development	Infrastructure Investment Plan	The Scottish Government	2015
Development	National Planning Framework 3	The Scottish Government	2014
Economy	The Tay Cities Regional Economic Strategy	Tay Cities RWG	2017
Economy	Angus Economic Strategy	Angus Council	2013
Economy	Capital Investment Strategy	Dundee City Council	2018
Economy	Fife's Economic Strategy	Fife Council	2017
Economy	Perth City Plan	Perth City Development Board	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 Strategy	The Scottish Government	2017
Transport	Regional Transport Strategy	Tactran	2015
Transport	Regional Transport Strategy	SEStran	2016
Transport	Local Transport Strategy	Angus Council	2010
Transport	Dundee Local Transport Strategy	Dundee City Council	2000
Transport	Local Transport Strategy for Fife	Fife Council	2006

Theme	Title	Author	Year
Transport	Shaping Perth's Transport Future	Perth and Kinross Council	2010
Transport	Local Transport Strategy	Perth and Kinross Council	2010
Transport	Tay Estuary Rail Study	Tactran	2009
Transport	Strategic Transport Projects Review	Transport Scotland	2009
Transport	National Transport Strategy	Transport Scotland	2020
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	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	Friday 21st June 2019	Birnam Arts & Conference Centre, Birnam	Workshop with stakeholders including representatives from public, private and third sector organisations, in addition to local authority officers, to identify transport-related problems and opportunities in the region.	9
	Wednesday 26th June 2019	Malmaison Hotel, Dundee		35
Structured Interviews	August – October 2019	-	Interviews with senior officers from the Tay Cities local authorities and Regional Transport Partnerships, to identify transport-related problems and opportunities and potential options for the region.	8
Interventions Workshop	Thursday 21st November 2019	Dewars Centre, Perth	Workshop with stakeholders including representatives from public, private and third sector organisations, in addition to local authority officers, to identify potential interventions to address problems and opportunities previously identified.	9
	Monday 25th November 2019	Malmaison Hotel, Dundee		17
Elected Members Briefing / Workshop	Friday 17th January 2020	City Chambers, Dundee	Key elected members with a transport portfolio, selected by the RTWG, were invited and it was an opportunity for them to hear first-hand about the project and its programme, problems and opportunities gathered, the interventions generated, as well as putting forward their views for interventions to be considered	15
Online Survey	Monday 2nd December 2019 – Friday 10th January 2020	Online	Online survey promoted to members of the public and organisations to validate emerging problems from the STPR2 process and to provide feedback on potential interventions to improve the strategic transport network, across all modes, in the future.	284 responses