Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor

Initial Appraisal: Case for Change Report

On behalf of **Tactran**

Project Ref: 47897/5502 | Rev: D | Date: June 2021

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For and on behalf of Stantec UK Limited				

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Background

Tactran, the Tayside and Central Scotland Transport Partnership, was awarded grant funding through Scottish Government's Local Rail Development Fund (LRDF) in late 2019 to undertake the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor study. The study is being taken forward in partnership with Perth & Kinross Council, Dundee City Council and Angus Council.

Historically there have been several detailed strategies that have been developed with an overall aim to maximise the potential for enhanced Park & Ride serving the region's cities, including allowing for longer distance travel by bus and coach and encouraging modal shift in favour of rail through station parking provision. This study will build on this overall key aim and, with oversight from the Tay Cities Regional Transport Working Group, outcomes will feed into the second Strategic Transport Projects Review (STPR2) at both regional and national levels.

Purpose of the Study

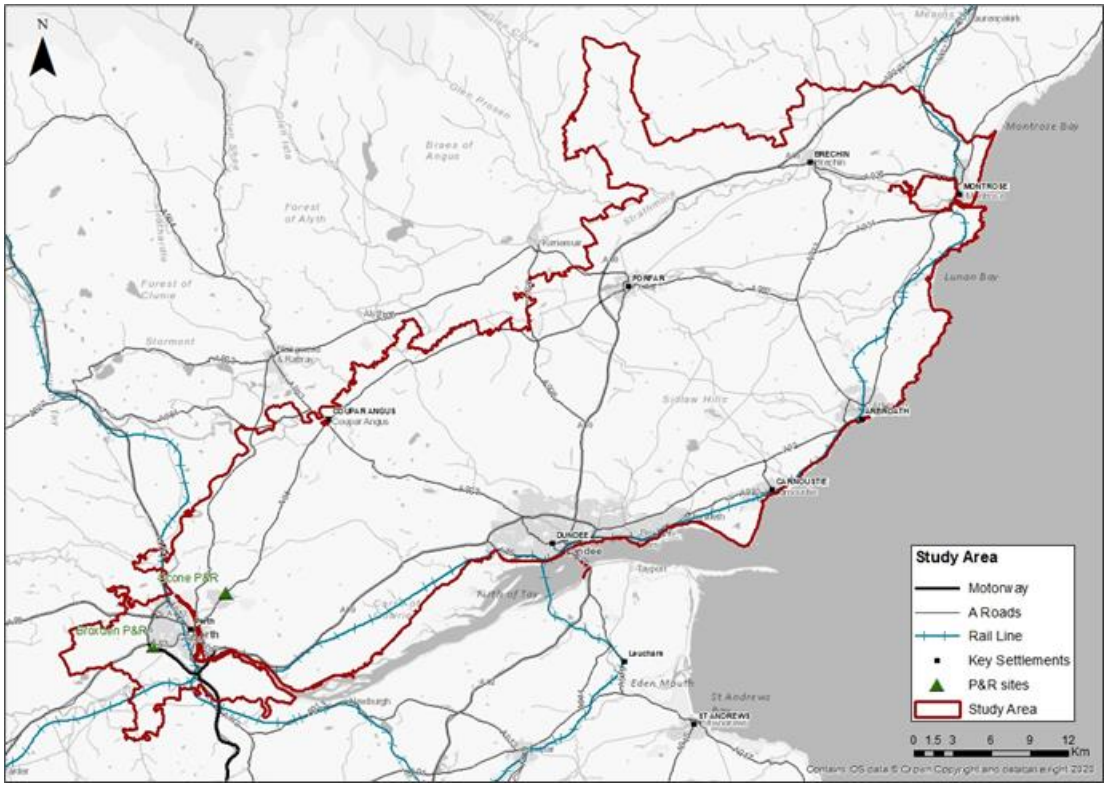
The purpose of the study is to identify and investigate multi-modal transport options that support a Park & Choose strategy along the Perth-Montrose transport corridor. In doing so, the study will also consider how to maximise the opportunity presented by the Revolution in Rail enhancements and Aberdeen to Central Belt proposals to address the regions transport problems.

Study Approach

The **Initial Appraisal: Case for Change** stage of the study has been undertaken in line with Scottish Transport Appraisal Guidance (STAG). This is the first stage of the overall process, comprising three key tasks that provide the foundations for the rest of the transport appraisal:

- **Analysis of Problems and Opportunities:** gathering evidence of transport problems and opportunities across the transport network. In this case, as a direct consequence of the transport network serving communities along the Perth-Montrose transport corridor (map of study area shown below).
- **Objective Setting:** developing Transport Planning Objectives that reflect the problems and opportunities, and express the outcomes sought for the study.
- **Option Generation, Sifting and Development:** generating the widest possible set of multi-modal transport options that could alleviate the problems and help realise the opportunities, and hence worthy of further consideration during the next stage of the study.

Map of Study Area



Analysis of Problems and Opportunities

The identification of actual and perceived transport problems and opportunities has formed the basis for the development of the study. Three separate exercises have been undertaken to identify existing transport problems and opportunities:

- **Stakeholder Engagement:** undertaken with a wide range of stakeholders, including local authorities (officers and elected members), Community Councils, key transport operators, active travel groups, and local business and tourism organisations. Supplemented by analysis of STPR2 online public survey for Tay Cities area.
- **Data Analysis:** covering a mix of socio-economic and transport data sources.
- **Key Documents Review:** including a wide range of relevant local and regional transport strategies and plans, as well as previous studies.

Based on these exercises, the following transport problem categories, user problems and root causes have been identified:

Transport Problems: broadly described in STAG methodology as existing and future problems within the transport and land use system [e.g. road traffic delays]

Category	Transport User Problem	Root Cause of Transport User Problem
Active Travel	Walking and cycling in Perth and Dundee, and in some rural areas, can feel unsafe and be inconvenient for some	• Motorised traffic levels and speeds • Lack of high-quality, safe walking and cycling routes
Public Transport Accessibility	Access to public transport can be difficult for some	• Limited access to public transport service provision • Lack of travel information
Public Transport Connectivity	Long journey times using public transport from rural hinterland to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of direct public transport services • Lack of rural connectivity • Lack of frequent public transport services
Transport Integration	For those without a direct connection, using public transport is inconvenient to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of high-quality interchanges • Lack of transport integration between modes, including PT and active travel • Lack of direct public transport connections • Lack of public transport timetable integration • Lack of integrated ticketing
Rail Station Parking Capacity	Car users unable to park reliably / regularly at rail stations	• Constrained parking capacity at rail stations
Park & Ride	Car users unable to park securely and complete rest of journey by public transport	Barriers to existing P&R sites, including: • Plentiful parking at a relatively cheap cost in Perth and Dundee • Lack of Park & Ride capacity / number of sites • Constrained parking capacity at rail stations

Category	Transport User Problem	Root Cause of Transport User Problem
Journey Times by Road	Car / Van / Commercial Vehicles and Bus journey times can be extended and variable	• Traffic delays at key locations within Dundee and Perth during peak times • High car mode share • High car ownership / availability outwith Dundee and Perth • Limited alternative travel choices for some
Air Pollution	Poor air quality has a negative effect on the public environment / urban realm	• Traffic levels and associated vehicle emissions

Transport Opportunities: broadly described in STAG methodology as the chances to improve the transport and land use system to realise opportunities [e.g. improve journey times and reliability]

The following transport opportunities have been identified via the stakeholder engagement exercise and key document review:

Opportunity Category	Opportunity
Active Travel	Sustrans Places for Everyone Fund
Accessibility & Connectivity	Improve access to public transport
	Improve sustainable connectivity
Public Transport Availability	Increase public transport choice
Public Transport Growth	Improve PT infrastructure and services
	Improvements to the bus fleet
	Capitalise on Revolution in Rail and Aberdeen to Central Belt proposals
Public Transport Infrastructure and Information	Bus Partnership Fund – Transport Scotland Improve access to travel information
Transport Integration	Improve transport integration, affording PT opportunities for first and last mile journeys
Modal Shift	Encourage sustainable transport modes

Objective Setting

Following the Analysis of Transport Problems and Opportunities, the next task was to set the Transport Planning Objectives (TPOs). The TPOs have been developed such that they express the outcomes sought for the study, describe how the identified transport user problems and root causes will be alleviated as well as reflecting the opportunities to be realised.

Recognising that the TPOs may not be fully SMART at this stage, they have been developed with SMART principles in mind, enabling them to be made “SMARTer” as the transport appraisal process progresses.

The table below shows the TPOs and also provides a clear logic trail between problem category, user problem(s), root cause(s) and opportunities before arriving at the TPO. It should be noted that no weighting is applied to any of the TPOs. The numbering system is for presentation and reference purposes only.

Problem Category	Transport User Problem	Root Cause of Transport User Problem	Opportunity	Transport Planning Objective
Active Travel	Walking and cycling in Perth and Dundee, and in some rural areas, can feel unsafe and be inconvenient for some	• Motorised traffic levels and speeds • Lack of high-quality, safe walking and cycling routes	• Places for Everyone Fund (sustrans) • Encourage sustainable transport modes	**TPO 1: Create a safer and more convenient environment that facilitates active travel**
Public Transport Accessibility	Access to public transport can be difficult for some	• Limited access to public transport service provision • Lack of travel information	• Improve access to public transport • Improve PT infrastructure and services • Improve access to travel information • Encourage sustainable transport modes	**TPO 2: Address perceived and actual barriers to the use of Public Transport along the transport corridor**
Public Transport Connectivity	Long journey times using public transport from rural hinterland to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of direct public transport services • Lack of rural connectivity • Lack of frequent public transport services	• Improve sustainable connectivity • Increase PT choice • Improve PT infrastructure and services • Capitalise on RinR and Aberdeen to Central Belt rail proposals • Encourage sustainable transport modes	**TPO 3: Improve public transport connectivity to employment, key services, and opportunities within Perth and Dundee and beyond**
Transport Integration	For those without a direct connection, using public transport is inconvenient to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of high-quality interchanges • Lack of transport integration between modes, including PT and active travel • Lack of direct public transport connections • Lack of public transport timetable integration • Lack of integrated ticketing	• Improve transport integration, affording PT opportunities for first and last mile • Improve PT infrastructure and services • Capitalise on RinR and Aberdeen to Central Belt rail proposals • Encourage sustainable transport modes	**TPO 4: Improve integration with and between sustainable transport modes**

Problem Category	Transport User Problem	Root Cause of Transport User Problem	Opportunity	Transport Planning Objective
Rail Station Parking Capacity	Car users unable to park reliably / regularly at rail stations	• Constrained parking capacity at rail stations	• Improve PT infrastructure and services	
Park & Ride	Car users unable to park securely and complete rest of journey by public transport	Barriers to existing P&R sites, including: • Plentiful parking at a relatively cheap cost in Perth and Dundee • Lack of Park & Ride capacity / number of sites • Constrained parking capacity at rail stations	• Improve PT infrastructure and services	
Journey Times by Road	Car / Van / Commercial Vehicles and Bus journey times can be extended and variable	• Traffic delays at key locations within Dundee and Perth during peak times • High car mode share • High car ownership / availability outwith Dundee and Perth • Limited alternative travel choices for some	-	**TPO 5: Reduce journey times and improve reliability for road traffic**
Air Pollution	Poor air quality has a negative effect on the public environment / urban realm	• Traffic levels and associated vehicle emissions	-	**TPO 6: Reduce vehicle emissions in Perth and Dundee**

Option Generation, Sifting and Development

The final task in developing the Initial Appraisal: Case for Change involved Option Generation, Sifting and Development. This task was undertaken to identify a set of transport options that could meet the TPOs and, consequently, address the evidenced problems and help realise the opportunities.

The option generation process was informed by:

- The TPOs set for this study.
- Consideration of previous transport studies and relevant transport plans and strategies.
- Project Team and Steering Group workshops.
- Suggestions from stakeholders.

The broadly defined options recommended for the next stage of the STAG process – that is the Preliminary Options Appraisal – are listed in the table below.

It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options listed below – the numbering system is used for presentation and reference purposes only. It should also be noted that options may not be in all cases mutually exclusive and could be packaged together to help meet the TPOs and address the evidenced transport problems. This will be considered further as part of the Preliminary Options Appraisal.

Recommended Multi-Modal Transport Options for Preliminary Options Appraisal

Option Ref.	Type	Description
1	Active Travel	Increase active travel links to nearest Public Transport Hub from hinterland settlements and to Perth and Dundee, including enhanced provision around key services and public transport interchanges
2	Bus	Improve direct bus services from hinterland settlements to Perth and Dundee, and rail stations along transport corridor
3	Demand Responsive Transport (DRT)	Increase DRT public transport to serve hinterland settlements
4	Park & Ride / Choose	Implement new Park & Ride / Choose sites for all modes at key locations around Perth and Dundee, including associated bus priority measures, and at key strategic regional locations
5	Integration	Improve existing bus-to-bus and bus-to-rail interchanges along the transport corridor
6	Rail	New rail station north of Perth at Luncarty on the Highland Main Line, including construction of a Park & Ride / Choose site
7	Rail	Relocate Invergowrie rail station to Dundee West, including construction of bus-to-rail interchange

Option Ref.	Type	Description
8	Rail	New rail station between Perth and Dundee at Errol, St Madoes or Walnut Grove, including construction of bus-to-rail interchange
9	Rail	Increase the number of calls and upgrade station facilities at existing, underused, rail stations at Balmossie, Barry Links and Golf Street
10	Rail	Increase rail station car parking capacity at intermediate stations along the transport corridor (outwith Perth and Dundee)

Recommendations and Next Steps

The Initial Appraisal: Case for Change has set the context for the appraisal of several multi-modal transport options for the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor.

In line with STAG methodology, it has identified the key transport problems and opportunities within the study area, which have formed the basis for objective setting and the generation of a wide range of broadly defined options to be appraised.

Preliminary Options Appraisal

The purpose of the Preliminary Options Appraisal will be to undertake an initial, qualitative appraisal of the recommended options listed above. Following a period of further development and refinement of the options, this will include an assessment of:

- The likely impacts of the options against the TPOs.
- The likely impacts of the options against STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility & Social Inclusion].
- The alignment of options with established policy directives.
- Feasibility, affordability and public acceptability of the options.

STPR2 published its recommended long list of options at the Initial Appraisal: Case for Change stage in February 2021. Whilst STPR2 takes a national overview of the transport network, it also has a focus on the regions, including Tay Cities. Therefore, going forward to the next stage of this study a cross-check of the options being selected or rejected as part of STPR2 will be undertaken and consideration will be given as to how those may affect the recommended options for the Preliminary Options Appraisal stage of this study.

1 Introduction

1.1 Background

1.1.1 Stantec UK Limited has been commissioned by Tactran, the Tayside and Central Scotland Transport Partnership, to undertake the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor study. This study is being funded through Scottish Government's Local Rail Development Fund (LRDF) and is being undertaken in line with Scottish Transport Appraisal Guidance (STAG) methodology.

1.1.2 Historically there have been several detailed strategies (discussed further in Chapter 5) that have been developed with an overall aim to maximise the potential for enhanced Park & Ride serving the region's cities, including allowing for longer distance travel by bus and coach and encouraging modal shift in favour of rail through station parking provision. This study will build on this overall key aim and, with oversight from the Tay Cities Regional Transport Working Group, outcomes will feed into the second Strategic Transport Projects Review (STPR2) at both regional and national levels.

1.2 Purpose of the Study

1.2.1 The purpose of the study is to identify and investigate multi-modal transport options that support a Park & Choose strategy along the Perth-Montrose transport corridor. In doing so, the study will also consider how to maximise the opportunity presented by the Revolution in Rail enhancements and Aberdeen to Central Belt proposals to address the regions transport problems.

1.2.2 This report documents the Initial Appraisal: Case for Change stage of a STAG-based study. This is the first stage, which involves identifying evidenced transport problems and opportunities across the study area; setting Transport Planning Objectives (TPOs) to reflect the changes sought to address these problems and opportunities; and generating a range of potential multi-modal transport options worthy of further consideration during the next stage of the study.

1.3 COVID-19

1.3.1 This report was prepared prior to and during the COVID-19 pandemic. Once social distancing measures and travel restrictions are relaxed, there are potentially wide ranging and longer-term structural changes and impacts caused by the pandemic, many of which could impact on the demand for travel across all modes. We will review the findings of this Initial Appraisal: Case for Change in light of COVID-19 at appropriate stages of the STAG process. This review will also consider the timing of wider public consultation.

1.4 Structure of the Report

1.4.1 The remainder of this report is structured as follows:

- **Chapter 2: Methodology** – describes the methodology that has been applied in carrying out the Initial Appraisal: Case for Change.
- **Chapter 3: Context of the Study Area** – describes the study area and discusses the levels of service offered by the existing transport network as well as emerging problems.
- **Chapter 4: Stakeholder Engagement** – provides an overview of the stakeholder engagement exercise, including outcomes from the online seminars, structured telephone interviews and wider engagement questionnaire.

- **Chapter 5: Key Documents Review** – provides a summary of the identified problems and opportunities obtained from a review of relevant transport plans, strategies and previous studies.
- **Chapter 6: Analysis of Problems and Opportunities** – summarises and provides a consolidated set of transport problems and opportunities identified through the various evidence gathering exercises.
- **Chapter 7: Objective Setting** – sets out the TPOs for the study.
- **Chapter 8: Option Generation, Sifting and Development** – sets out details of the option generation, sifting and development process, including rationale for options recommended to be taken forward to the Preliminary Options Appraisal.
- **Chapter 9: Recommendations and Next Steps**.

2 Methodology

2.1 Scottish Transport Appraisal Guidance (STAG)

2.1.1 The **Initial Appraisal: Case for Change** stage of the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor Study has been undertaken using STAG methodology.

2.1.2 The STAG process is split into four parts as shown in Figure 1: Initial Appraisal: Case for Change; Preliminary Options Appraisal: Detailed Options Appraisal; and Post Appraisal. The Initial Appraisal: Case for Change forms the first part of the overall process and provides the foundations for the rest of the appraisal.

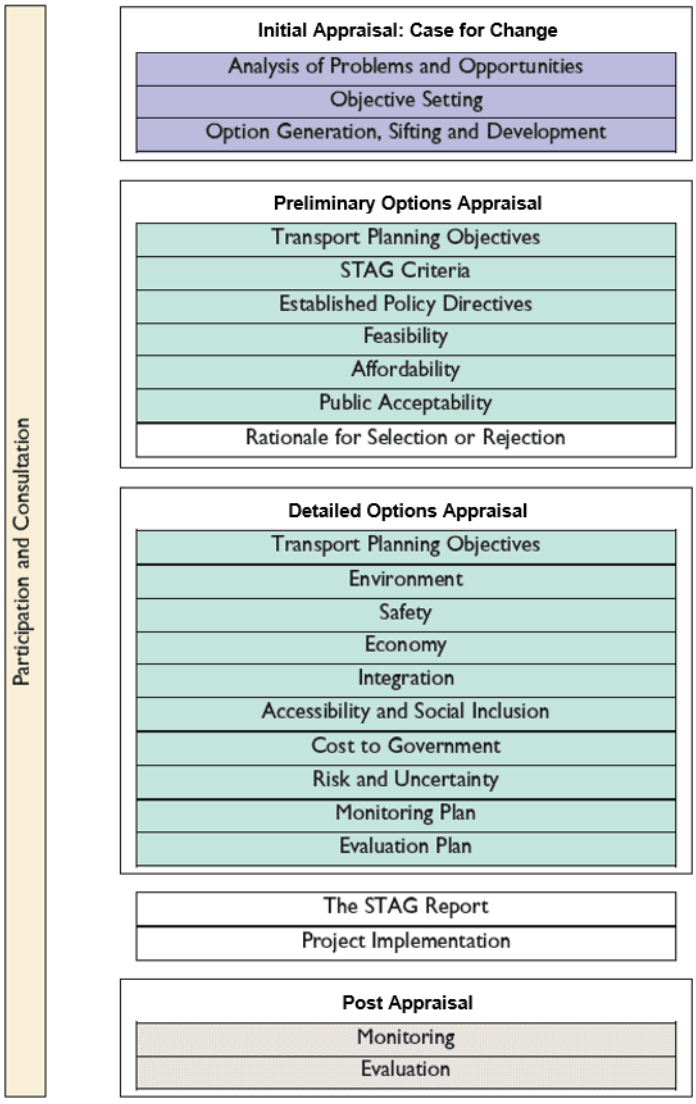


Figure 1: STAG Process

2.2 Initial Appraisal: Case for Change

2.2.1 The Initial Appraisal: Case for Change stage is the essential starting point and sets the rationale for undertaking an Appraisal in accordance with STAG. It includes the key tasks of:

- **Analysis of Problems and Opportunities:** gathering evidence of transport problems and opportunities across the transport network. In this case, as a direct consequence of the transport network serving communities along the Perth-Montrose transport corridor. This task is described further in Chapter 6.
- **Objective Setting:** developing TPOs that reflect the problems and opportunities, and express the outcomes sought for the study. This task is described further in Chapter 7.
- **Option Generation, Sifting and Development:** generating the widest possible set of multi-modal transport options that could alleviate the transport problems and help realise the opportunities. This task is described further in Chapter 8.

2.2.2 Two supporting tasks have been undertaken as described below.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Engagement can help to inform the STAG process and a properly designed plan should be one which runs concurrently through the various stages of the appraisal, allowing the two-way flow of information between project team and stakeholders. Such an approach can contribute to a greater understanding of problems and provide an opportunity for the local community to feed into the process and, importantly, allow transparency throughout the appraisal process.

2.3.2 Our engagement programme was developed and undertaken in partnership with members of the project Steering Group, including Angus Council, Dundee City Council and Perth & Kinross Council. Various approaches to engagement were adopted, as listed below, and have been supplemented by analysis of STPR2 online public survey for Tay Cities area.

- Online seminars
- Structured Telephone Interviews
- Briefing and Opportunity to Comment Questionnaire

2.3.3 As discussed in Section 1.3, this Case for Change was undertaken prior to and during the COVID-19 pandemic. The restrictions on society had a significant impact on the stakeholder engagement exercise, particularly public consultation. At the time, Scotland was gradually coming out of a national lockdown. As such, it was decided by the project Steering Group that consultation with the general public was not appropriate as, for example, the public was being asked not to use public transport. It was agreed to undertake community consultation through elected members and community councillors, who, as representatives of the local community / public, were the most appropriate means of wider community engagement at that time.

2.3.4 We will review the findings of this Initial Appraisal: Case for Change in light of COVID-19 at appropriate stages of the STAG process, including the timing of wider public consultation.

2.4 Data Analysis

2.4.1 The analysis has used a range of data from various sources to understand the evidence supporting the findings from the stakeholder and wider community engagement described

above. Secondary data has been obtained from a variety of sources [e.g. from the census, official labour market and employment data, INRIX Roadway Analytics, various websites and TRACC accessibility tool]. In all cases, the latest data available has been used whenever possible and referenced throughout this report.

3 Context of Study Area

3.1 Introduction

3.1.1 This chapter describes the study area and discusses the levels of service offered by the existing transport network, together with emerging transport problems such as those that are currently preventing the use of existing bus-based Park & Ride sites and use of rail stations along the transport corridor. The aim of the chapter is to provide background and context to the area and inform the Analysis of the Problems and Opportunities. The information gathering and analysis in this chapter focuses on secondary data sources. The next chapter provides details of primary data gathered via a stakeholder engagement exercise.

3.2 Study Area

3.2.1 The study area includes Perth and Dundee cities as well as the principal towns of Montrose, Arbroath, Carnoustie, Forfar and Brechin.

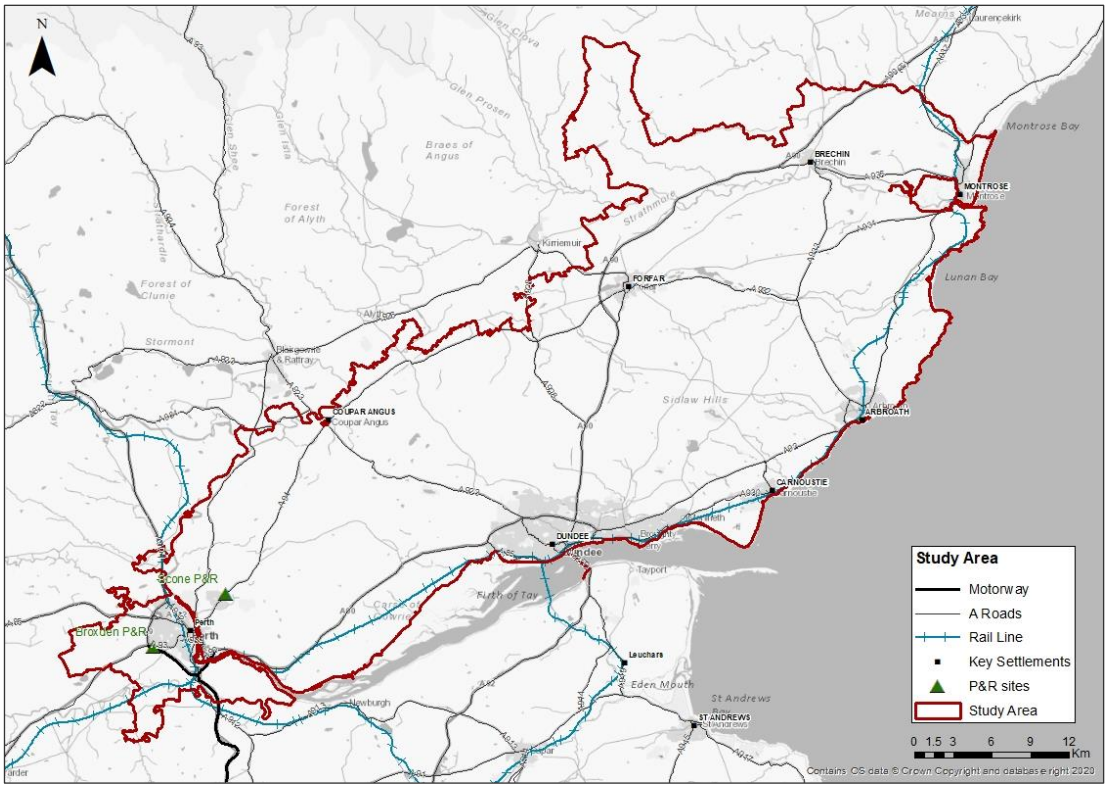


Figure 2: Geographic Extent of Study Area

3.2.2 The strategic road network includes the M90 motorway, which connects Perth to Edinburgh via the Queensferry Crossing, as well as two Trunk A Roads; the A90(T) which connects Perth to Dundee and the north east of Scotland; and a short section of the A92(T) along the Tay Road Bridge. Other A roads include:

- A85: a short section of this nearly continuous road linking the east coast with the west coast of Scotland is in Perth.
- A92: runs from Dunfermline in the south to Aberdeen in the north and passes through Fife, Dundee, Angus, Aberdeenshire and Aberdeen City. This road connects many settlements along the coast, including Arbroath and Montrose.
- A94: connects Perth and Forfar via Coupar Angus.
- A930: runs from the east of Dundee to Carnoustie along the coastline.

3.2.3 Broxden Park & Ride and Scone Park & Ride are also located within the study area, with Broxden offering local, regional and national bus service connections, and Scone offering local bus connections to Perth city centre.

3.2.4 The strategic rail network runs along the Perth to Montrose corridor following the coastline and includes the following rail stations: Perth, Invergowrie, Dundee, Broughty Ferry, Balmossie, Monifieth, Barry Links, Golf Street, Carnoustie, Arbroath and Montrose.

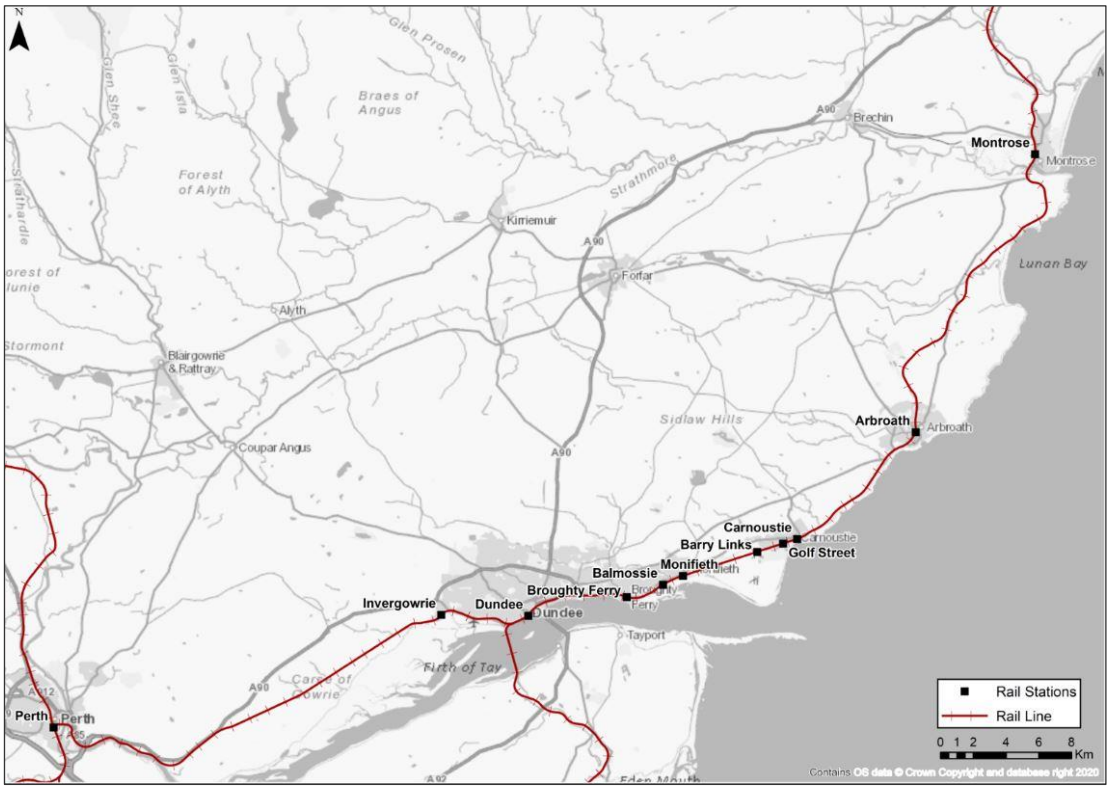


Figure 3: Rail Stations along Perth-Montrose Transport Corridor

3.3 Travel to Work Catchment Areas

3.3.1 It is important to consider travel-to-work movements in the context of this study for two main reasons: (1) in practice, population and employment are the main drivers in generating demand for travel and public transport services; and (2) to identify any longer travel-to-work journeys beyond the study area, including those north of Perth and in Fife, that may otherwise be missed.

3.3.2 An initial assessment of the 2011 Census[1] Travel to Work (CTTW) data was undertaken to identify locations of usual residence and places of work, and hence to gain an understanding of travel to work movements throughout the Tay Cities Region, including the study area.

3.3.3 The following assumptions were made during the assessment of the 2011 CTTW data:

- All intermediate zones representing central Perth, Dundee and Montrose were identified.
- The origins of commuters travelling to central Perth, Dundee and Montrose were mapped.
- The number of commuter trips from any one intermediate zone was set to a minimum of ten trips in order to identify zones from which the majority of trips were undertaken.

3.3.4 The Travel to Work catchment areas identified from this assessment are shown below.

Perth

Montrose

Dundee

3.3.5 It can be seen that the Travel to Work catchment areas for Dundee, Perth and Montrose overlap considerably and each are very regionalised in nature. The Dundee and Perth Travel to Work catchment areas also extend into northern parts of Fife, characterised by relatively large rural area zones and hence the large geographical coverage across north Fife. Whilst this has been identified, it has not resulted in any change to the study area. This is because there are several other ongoing transport appraisals covering those northern parts of Fife, including Tay South Park & Ride Study, Newburgh Transport Appraisal and St Andrews Transport Appraisal. Bridge of Earn / South Perth Transport Appraisal is also ongoing and could influence this part of the network. All of these will be considered as Issues ('Issues' as defined by STAG guidance) within this appraisal. Any transport interventions considered as part of this study will therefore be focussed along the Perth-Montrose transport corridor.

[1] 2011 Census is the only available and complete dataset that provides origin and destination Travel-to-Work movements.

3.3.6 All three Travel to Work catchment areas shown above form a wider "Area of Influence, or AoI." This wider AoI includes the study area and has been used principally in the assessment of Travel to Work movements for two main reasons: (1) to capture movements where either the origin or the destination is within the study area; and (2) to capture movements where both the origin and destination are outwith the study area.

Key Travel-to-Work Movements

3.3.7 The section highlights travel-to-work movements for the AoI and separately for Perth and Dundee. It also includes the travel-to-work method of transport along strategic routes into Perth and Dundee, parking supply and average cost of parking in both cities and analysis of road network journey times.

ANALYSIS

3.3.8 Table 1 shows internal and external movements for employed people.

Table 1: Internal and External Movements

Area	Description of Movement	Number of People in Employment
Area of Influence (AoI)	People in employment, living in the AoI	401,600
	People in employment, working in the AoI	287,200
	People in employment, living and working in the AoI	268,000
	People in employment, living in the AoI but working outside of AoI	133,600
	People in employment, living outside of the AoI but working in AoI	19,200
Dundee	People in employment, living in Dundee	63,600
	People in employment, working in Dundee	66,300
	People in employment, living and working in Dundee	43,900
	People in employment, living elsewhere in AoI and working in Dundee	21,400
	People in employment, working elsewhere in AoI and living in Dundee	6,700
	People in employment, living outside of AoI and working in Dundee	1,000
	People in employment, working outside of AoI and living in Dundee	13,100
Perth	People in employment, living in Perth	23,700
	People in employment, working in Perth	26,100
	People in employment, living and working in Perth	13,200
	People in employment, living elsewhere in AoI and working in Perth	12,100
	People in employment, working elsewhere in AoI and living in Perth	5,200
	People in employment, living outside of the AoI but working in Perth	900
	People in employment, working outside of the AoI but living in Perth	5,300
Between Perth and Dundee	People in employment, living in Perth and working in Dundee	1,000
	People in employment, living in Dundee and working in Perth	900
Values rounded to nearest hundred		

3.3.9 The following key points can be determined from Table 1:

Tier 1 (local) – Movements within and between Perth and Dundee

- 69%[2] [n=43,900] of people in employment who live in Dundee also work in Dundee.
- 56%[3] [n=13,200] of people in employment who live in Perth also work in Perth.
- 1,900 daily travel-to-work movements between Dundee and Perth.

Overall, a total of 65% of employed people [n=57,100] who live in Perth and Dundee work in those cities.

Tier 2 (regional) – Internal Movements to and from Perth and Dundee

- 8% [n=21,400] of employed people living elsewhere in the AoI work in Dundee.
- 5% [n=12,100] of employed people living elsewhere in the AoI work in Perth.

Overall, a total of 13% of employed people [n=33,500] living elsewhere in the AoI work in Dundee and Perth.

- 3% [n=6,700] of employed people living in Dundee work elsewhere in the AoI.
- 2% [n=5,200] of employed people living in Perth work elsewhere in the AoI.

Overall, a total of 5% of employed people [n=11,900] living in Dundee and Perth work elsewhere in the AoI.

Tier 3 (national) – External Movements to and from Perth and Dundee

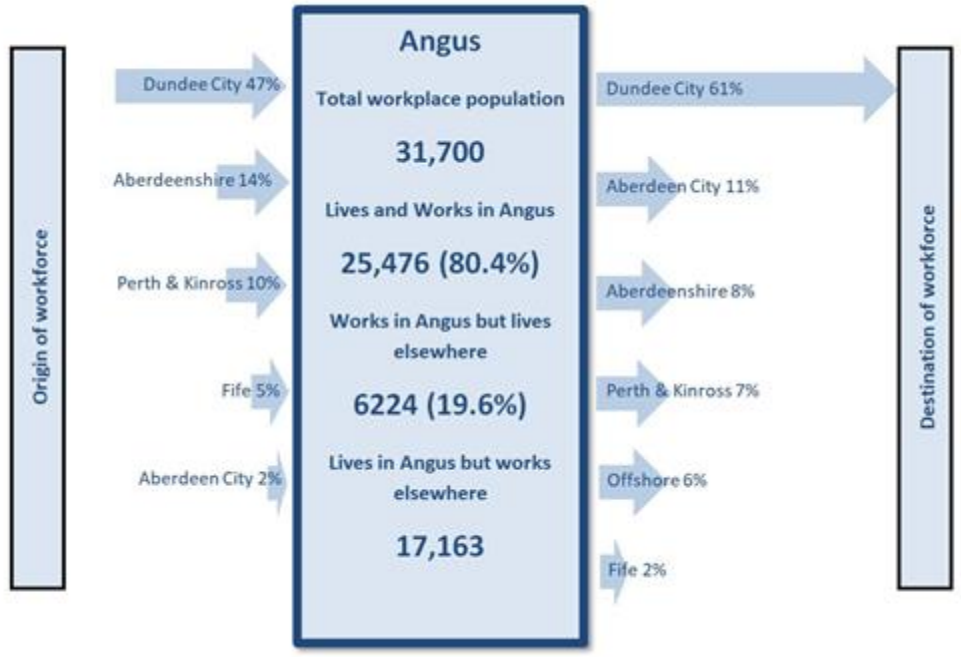
- 5% [n=1,000] of employed people living outside of the AoI work in Dundee.
- 5% [n=900] of employed people living outside of the AoI work in Perth.
- 10% [n=13,100] of employed people living in Dundee work outside of the AoI.
- 4% [n=5,300] of employed people living in Perth work outside of the AoI.

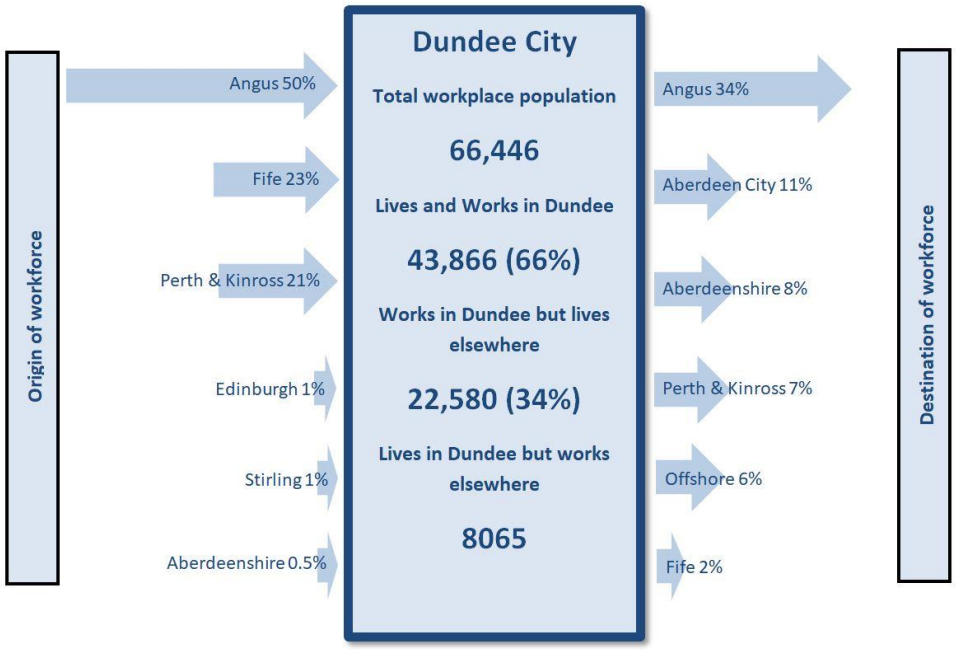
Overall, a total of 13% [n=20,300] of employed people travel to / from Dundee and Perth from / to areas outside of the AoI.

3.3.10 It is clear that all three movement tiers interact with Perth and Dundee to varying levels of degree. The level of significance is greatest, in absolute terms, at the local level (Tier 1) – that is the greatest number of travel-to-work movements occur within Perth and Dundee, and between both cities. This is followed by the regional level (Tier 2) – that is movements that occur to and from Dundee/Perth to elsewhere in the AoI. The level of significance is least at the national level (Tier 3) – that is fewer movements occur overall to and from Dundee to areas outside of the AoI.

3.3.11 Whilst not immediately evident from the Tier 2 findings above, further analysis of 2011 census travel-to-work movements shows a significant movement between Angus and Dundee City.

[2] Calculated by dividing the total number of employed people who live and work in Dundee (43,900) by the total number of employed people who live in Dundee (63,600)
[3] Calculated by dividing the total number of employed people who live and work in Perth (13,200) by the total number of employed people who live in Perth (23,700)





3.3.12 Further travel-to-work analysis below will assist in providing evidence to support the development of the TPOs.

3.3.13 **Key points:**

- **the greatest number of travel-to-work movements occur within Perth and Dundee, and between both cities**
- **travel-to-work movements also show a significant movement between Angus and Dundee City.**

Travel-to-Work Method of Transport

3.3.14 Analysis of locations of usual residence to place of work locations in Dundee and Perth by method of transport using CTTW was undertaken to determine commuter travel mode share information along strategic routes into both cities. In order to determine mode share on the strategic routes, commuter trips from usual residence zones were applied to the most appropriate strategic route and zone boundaries were set outside the city limits. This application was necessary as CTTW data does not contain specific routing information.

3.3.15 Figures 4 and 5 show commuter travel mode shares along the strategic routes into Perth and Dundee, respectively [i.e. inbound direction only].

3.3.16 It should be noted that for any commuter travel mode share that is less than one percent, it is not shown in the figures. For example, in Figure 4, rail mode share for commuter movements into Perth from the north is not shown because rail mode share is less than one percent. Similarly, in Figure 5, rail mode share for commuter movements into Dundee from the west is not shown for the same reason. It should also be noted that given the now dated 2011 CTTW data, current commuter travel mode shares may be different to those shown in the figures below.

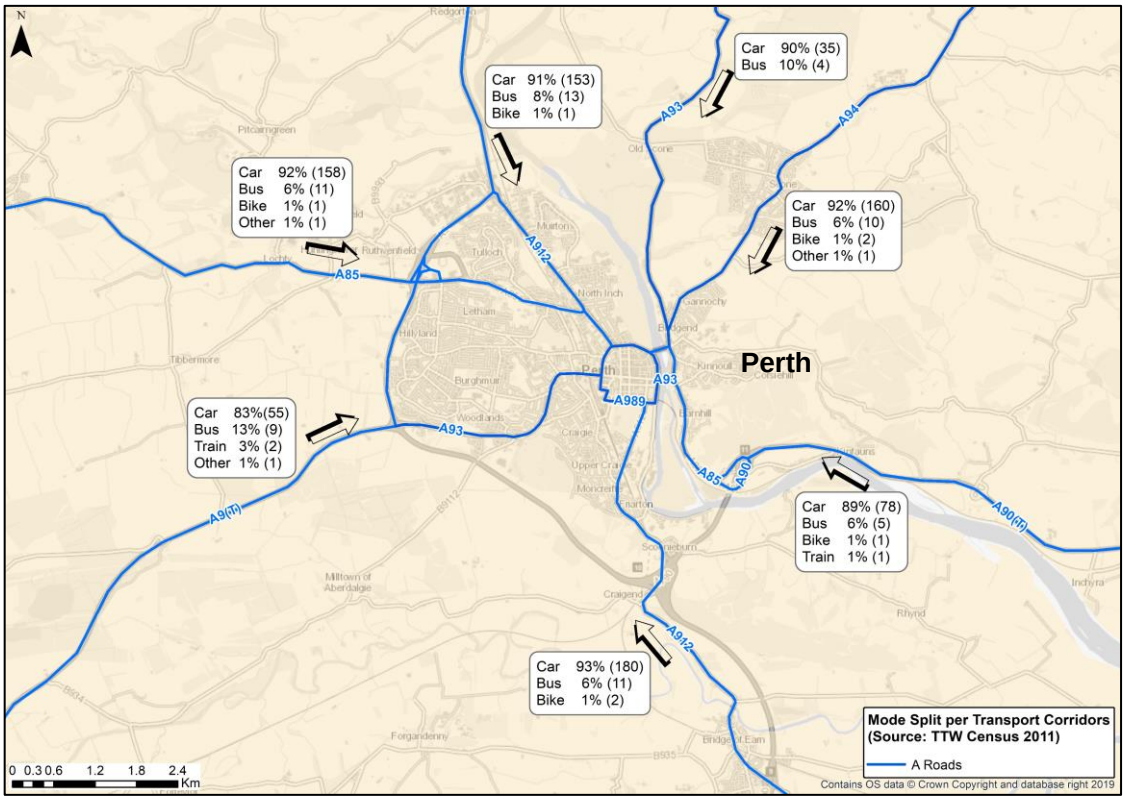


Figure 4: Commuter Travel Mode Share into Perth

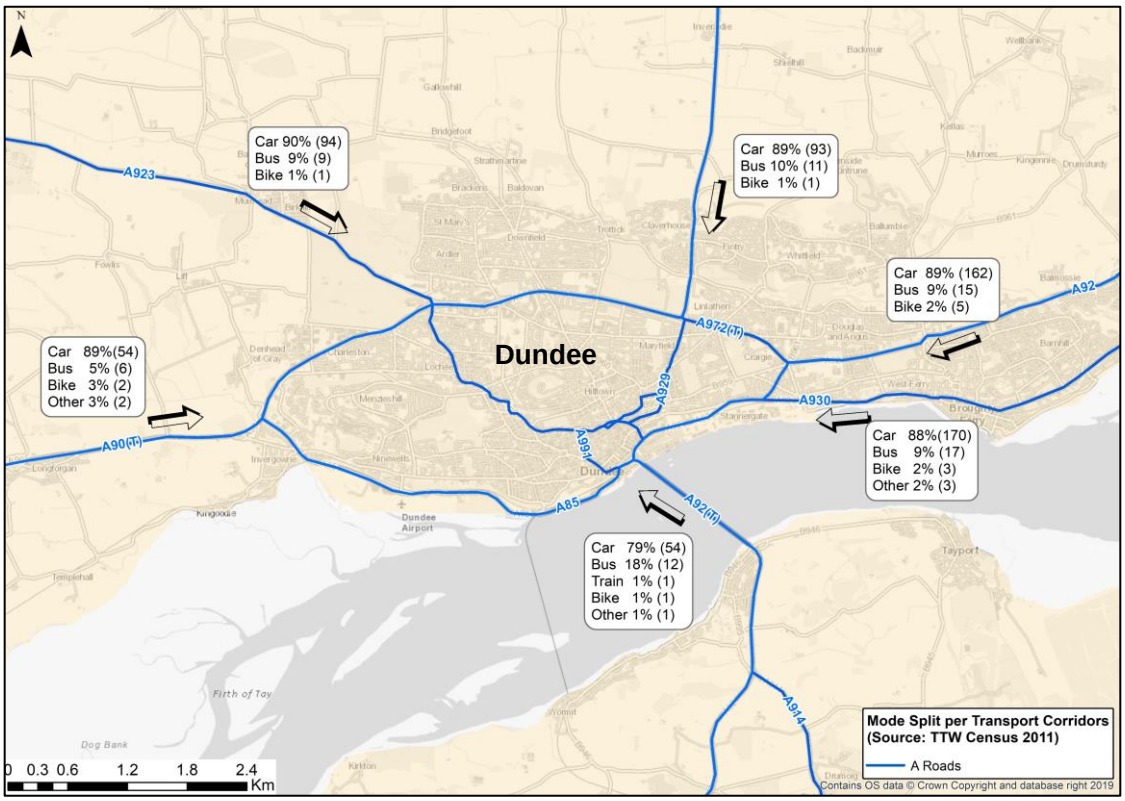


Figure 5: Commuter Travel Mode Share into Dundee

3.3.17 The following can be determined from these graphics:

Perth

- The majority of commuter trips into Perth are made by car.
- Bus mode share ranges from 6% (most routes) to 13% (A9(T) south).
- As expected, Active Travel (walk and cycling) mode share is low due to zone boundaries set at city limits.

Dundee

- The majority of commuter trips into Dundee are also made by car.
- Bus mode share ranges from 5% on the A90(T) to the west of Dundee to 18% on the A92(T) Tay Bridge.
- Active Travel mode share is also low due to zone boundaries set at city limits.

3.3.18 **Key points:**

- **Bus, Rail and Cycle mode share is very low compared to car mode share for people travelling to work on strategic routes into Perth and Dundee.**
- **Whilst bus mode share (up to 18%) and cycle mode share (up to 3%) on these strategic routes are broadly similar to the overall national averages (10% and 3% respectively), rail mode share (1%) is lower than the national average (4%) and car mode share (ranging from 79% to 93%) is higher than the national average (62%).**

Parking

3.3.19 The supply of parking within Perth and Dundee and the average charges for a working day (from 8am to 4pm) is shown in Table 2. The car park supply data has been obtained from surveys undertaken to inform the development of the Tay Cities Regional Transport Model (TCRTM). These surveys were undertaken on a typical Tuesday, Wednesday and Thursday in 2017. Although the vast majority of spaces in Perth were surveyed, only a small number were surveyed in Dundee with further synthesis being applied to provide an overall indication of capacity.

Table 2: Parking Supply in Perth and Dundee

City	Parking Supply – No. of Spaces	Average Daily Cost	Off-Street Parking
Dundee	6,171	£10	£10 – £25
Perth	5,995	£9	£9.60

3.3.20 The Perth survey data showed that the available supply was approximately 60% occupied, with half of all spaces occupied by 10am. Only 12 car parks were surveyed in Dundee and by 10am, just under a half of spaces were occupied.

3.3.21 **Key point: there is plenty supply of parking at a relatively cheap cost in both Perth and Dundee.**

3.4 Selected Settlements Profile

3.4.1 This sub-section details a socio-economic profile of selected settlements within the study area. It presents socio-economic indicators for each settlement and changes in the Scottish Index of Multiple Deprivation (SIMD)[4] across the wider area. The analysis has been undertaken to evidence the levels of transport demand within the study area, defining the sources of this demand and the socio-economic nature of the settlements from which this demand arises. Analysis of the supply-side is provided in Section 3.5.

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3.4.2 The top 20 settlements within the study area (excluding Perth and Dundee) shown in Figure 6 were identified based on the size of their working age population – the bigger the dots, the bigger the working age population. Working age population has been selected because, in practice, employment is a key driver in generating demand for travel and public transport services and working age population is strongly correlated with employment.

3.4.3 Selected socio-economic indicators for each settlement are shown in Table 3. Although now dated, elements of the 2011 census have been used in the analysis because it provides the most comprehensive dataset for some of the indicators.

[4] SIMD is the Scottish Government's official tool to identify areas of poverty and inequality across Scotland.

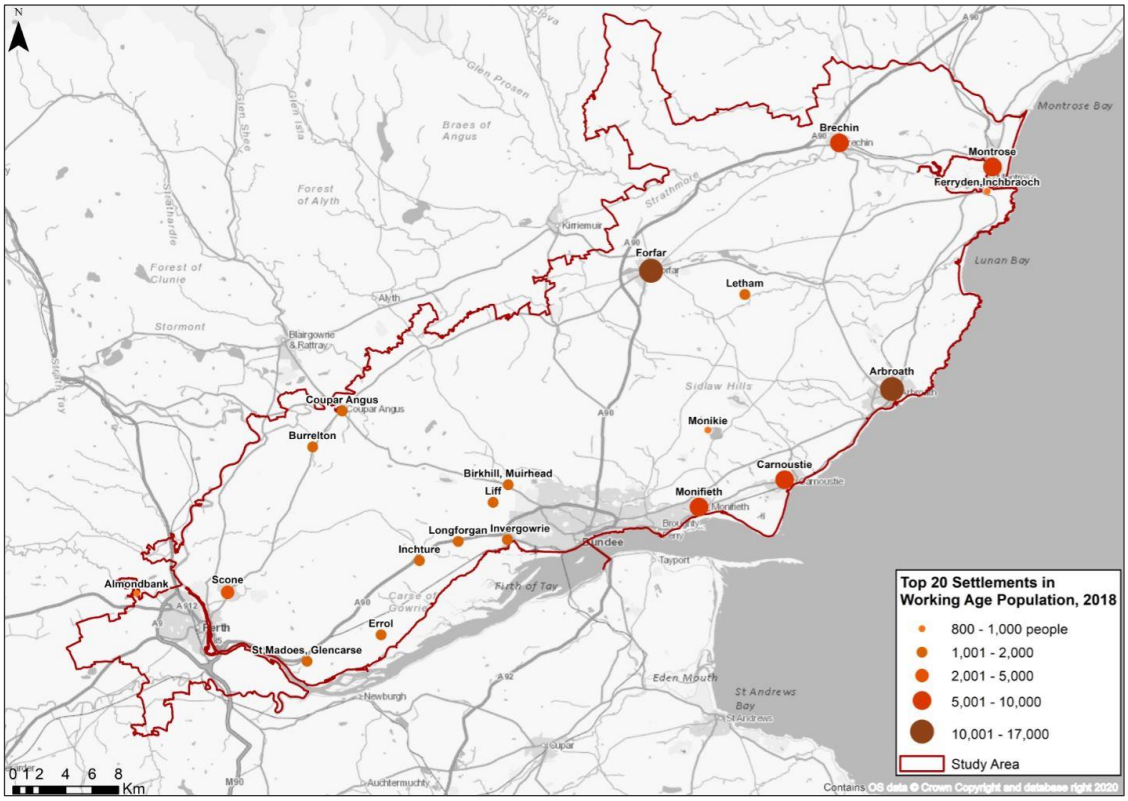

Figure 6: Location of Top 20 Settlements by Working Age Population, 2018

Table 3: Selected Socio-Economic Indicators for Top 20 Settlements

		2018		2018 vs. 2011		2011	2014	2011
Rank	Settlement	Population[5]	Working Age Population	Population Growth	Working Age Population Growth	Economic Activity[6]	Median Household Income[7]	Car Availability[8]
1	Arbroath	23,472	17,045	-2%	-2%	68%	£493	65%
2	Forfar	14,047	10,060	1%	0%	70%	£477	71%
3	Montrose	11,986	8,796	0%	0%	68%	£497	66%
4	Carnoustie	11,352	8,173	0%	-1%	70%	£591	81%
5	Monifieth	8,396	5,856	1%	0%	68%	£578	82%
6	Brechin	7,243	5,192	-3%	-4%	68%	£492	71%
7	Scone	5,093	3,475	2%	0%	67%	£536	81%
8	Longforgan	2,054	1,542	3%	3%	66%	£699	91%
9	St Madoes & Glencarse	1,982	1,506	-1%	1%	71%	£777	90%
10	Birkhill & Muirhead	2,029	1,498	-3%	-3%	72%	£601	88%
11	Coupar Angus	1,890	1,429	-6%	-3%	67%	£493	81%

[5] Source of Population & Working Age Population (aged 16-74) for years 2011 & 2018: National Records of Scotland, 'Mid-Year Small Area Population Estimates for 2011 Data Zones

[6] Source of Economic Activity data: Scotland's 2011 census – Table QS601SC – Economic Activity, all people aged 16-74 https://www.scotlandscensus.gov.uk/

[7] Source of Median Household Income data: Scottish Statistics – Median Household Income, 2014 https://statistics.gov.scot/data/local-level-average-household-income-estimates-2014

[8] Source of Car Availability data: Scotland's 2011 census – Table KS404SC – Car or van availability, all households https://www.scotlandscensus.gov.uk/

		2018		2018 vs. 2011		2011	2014	2011
Rank	Settlement	Population[5]	Working Age Population	Population Growth	Working Age Population Growth	Economic Activity[6]	Median Household Income[7]	Car Availability[8]
12	Inchture	1,905	1,340	21%	15%	77%	£745	93%
13	Woodside & Burrleton	1,769	1,314	4%	3%	71%	£594	92%
14	Invergowrie	1,761	1,286	-2%	-1%	68%	£561	82%
15	Liff	1,753	1,274	18%	21%	73%	£745	93%
16	Letham	1,693	1,196	7%	1%	68%	£558	85%
17	Errol	1,632	1,169	7%	3%	72%	£605	84%
18	Almondbank	1,340	980	2%	2%	72%	£603	83%
19	Ferryden & Inchbraoch	1,213	919	-6%	-4%	69%	£506	75%
20	Monikie	1,141	804	10%	2%	66%	£669	94%
	Scotland	**5,299,900**	**3,487,433**	**3%**	**0.1%**	**79%**	**£555**	**69%**

3.4.4 **Key points:**

- **The top six settlements by population size are located east of Dundee, five of which are located along the Perth-Montrose transport corridor.**
- **Households in all settlements, except Arbroath (65%) and Montrose (66%), have relatively high levels of car availability compared to Scotland as a whole (69%).**
- **All settlements have a favourable population demographic, with over 70% of total settlement population made up of working age residents. This is higher than national average of 66%.**

Scottish Index of Multiple Deprivation (SIMD)

3.4.5 The SIMD is used to identify areas where people experience multiple deprivation and, hence, finding areas of greater need for supported public services and intervention / investment. SIMD considers multiple types of deprivation because 'deprived' does not just mean 'poor' or 'low income,' it can also mean people have fewer resources and opportunities. SIMD is an important consideration, particularly given that the recently published National Transport Strategy 2 (NTS2) has a focus on tackling inequalities and social deprivation in relation to access to transport.

3.4.6 Many of the socio-economic indicators shown in Table 3 provide an initial understanding of the social and economic health of the selected settlements. This initial understanding has been built upon through analysis of changes in SIMD data zone overall rank between 2016 and 2020. The changes across all domains[9] have been used as opposed to using the singular rank because it provides a measurable statistic that helps determine the magnitude of change and impact across the area. For example, an area that has seen significant business closures will have an impact on several SIMD domains to varying levels of degree, and this may not be as easily discernible using the basic rank. It should be noted that updates have been made to the way SIMD indices are calculated and this may have had some material impact on the figures shown below. More details can be found on the SIMD website (simd.scot).

3.4.7 Figure 7 shows the relative positive change in SIMD data zone rank within the study area. The areas shaded green have experienced an improvement in the overall SIMD rank. Figure 8 shows the relative negative change (worsening) in SIMD data zone rank and this is reflected by the areas shaded orange and red.

[9] SIMD domains are Income; Employment; Education; Health; Access to Services; Crime; and Housing.

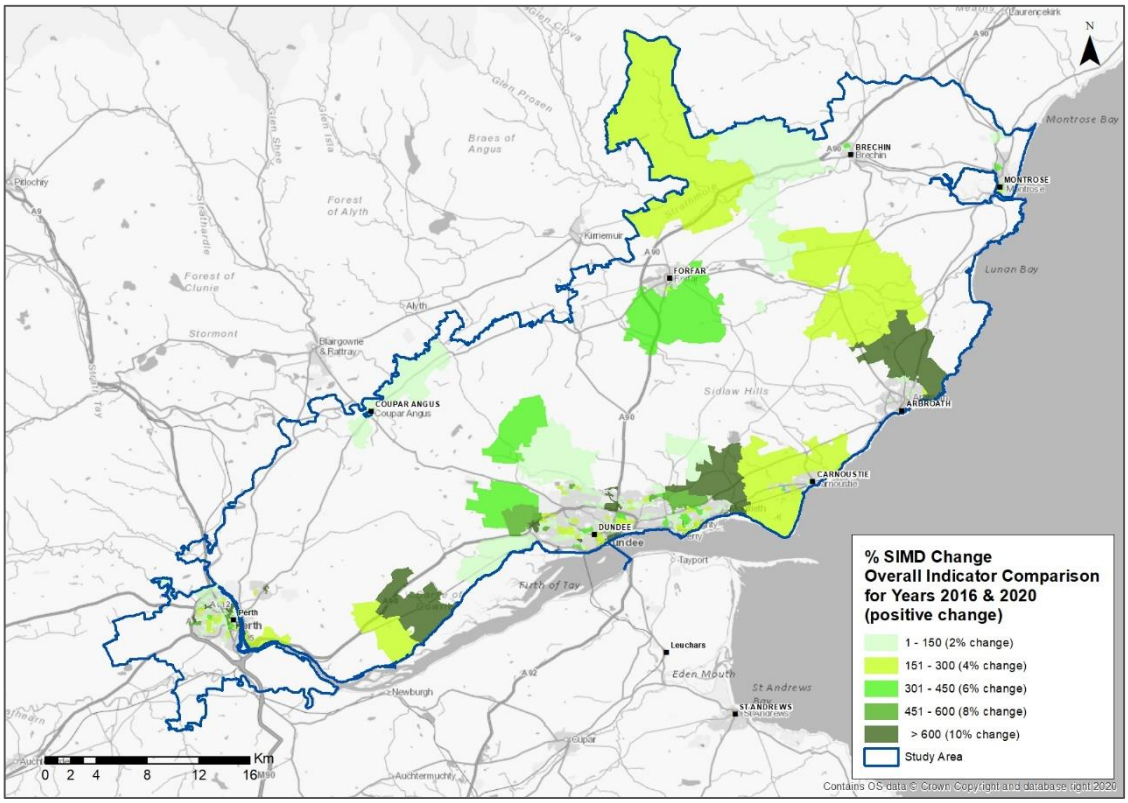

Figure 7: Positive % Changes in SIMD Rank, 2020 vs 2016

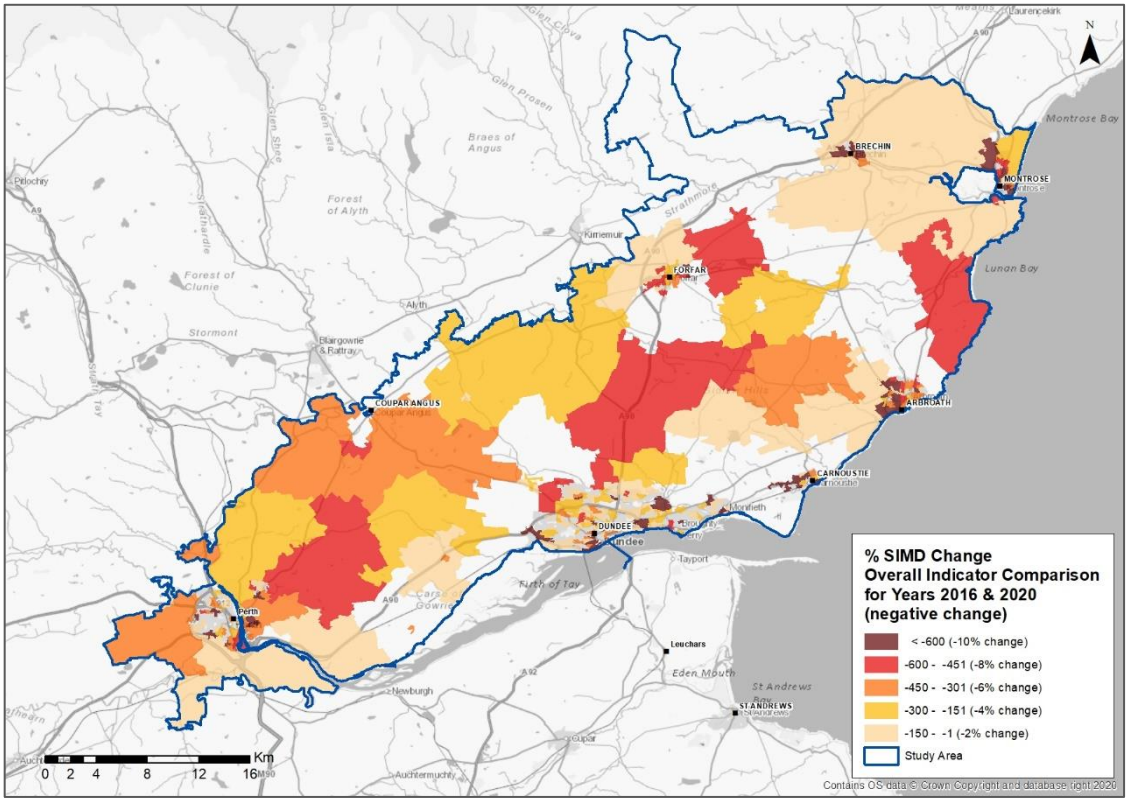

Figure 8: Negative % Changes in SIMD Rank, 2020 vs 2016

3.4.8 There is a varied picture across the study area. Overall, changes in rank are relatively low, with only a few data zones showing significant changes in rank of greater than +/-10%. In addition to the changes in overall data zone rank between 2016 and 2020, changes in SIMD domains were also identified. Large percentage changes for some of the selected settlements are shown below:

- **Arbroath**: employment -34%
- **Montrose**: employment -26%, income -18%, health -19%
- **Errol**: health -21%, access to services +57%, education -18%
- **Woodside & Burrleton**: education -34%, access to services -40%
- **Coupar Angus:** education -25%
- **Ferryden & Inchbraoch:** education -36%, access to services -55%, employment -18%
- **Almondbank:** education +18%
- **Carnoustie:** access to services -64%, income -17%
- **Longforgan:** access to services -23%
- **Monikie:** access to services -24%
- **Liff:** access to services +34%

3.4.9 The generally accepted point at which an area is defined as deprived is when it is classified within the '20% most deprived' areas in Scotland. There are several areas across the study area that experience high levels of multiple deprivation when all SIMD domains[10] are considered. These areas are illustrated in Figure 9, with the 20% most deprived areas of Scotland shaded in red. They include areas within Perth, Dundee and Arbroath, which are located along the Perth-Montrose transport corridor, as well as Brechin and Forfar which are outwith the corridor.

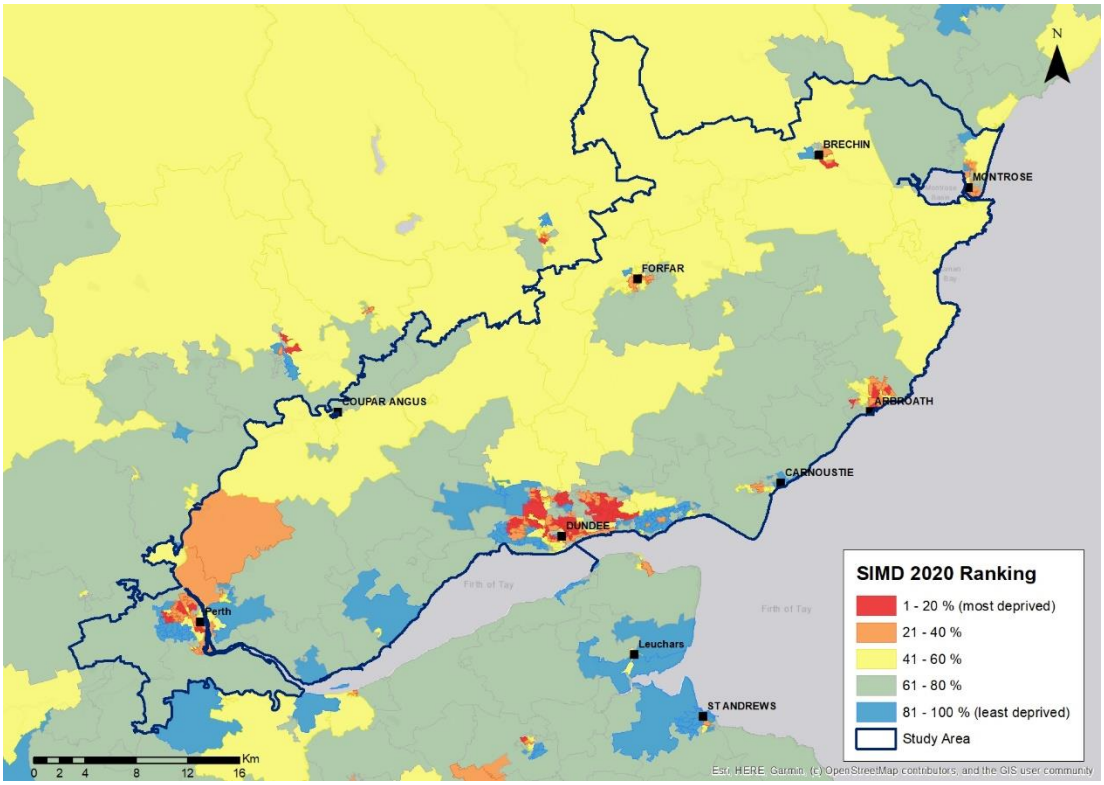

Figure 9: SIMD 2020 Ranking, Overall Index

[10] SIMD domains are Income, Employment, Education, Health, Access to Services, Crime and Housing.

3.4.10 From the headline results presented above, it is clear that there is a varied socio-economic profile across the study area. Some selected settlements are performing well compared to other parts of the study area, with higher median household incomes and economic activity. Conversely, other settlements are performing poorly with lower median household incomes and economic activity. It is also clear that for most of the settlements that show the largest changes in SIMD domains in the last four years, access to services (e.g. GP surgery, retail centre or schools) from rural areas has worsened overall albeit simply in terms of average drive or public transport travel times. The overall SIMD index reveals that several locations across the study area experience high levels of multiple deprivation and are in the top 20% most deprived in Scotland. There will be many contributing factors behind these headlines, including transport.

3.4.11 **Key point: across all SIMD domains, Perth, Dundee and Arbroath (located along the Perth-Montrose transport corridor), as well as Brechin and Forfar (located outwith the corridor), suffer from high levels of multiple deprivation, with many parts included within the 20% most deprived areas of Scotland. The domain that has worsened most notably over the last four years is Access to Services, albeit simply in terms of average drive or public transport travel times.**

3.5 Accessibility and Connectivity to Strategic Public Transport Network

3.5.1 This section focusses on existing accessibility and connectivity to the strategic public transport network, helping to identify related transport problems, including any that are encouraging use of the private car and / or currently preventing the use of sustainable transport modes across the study area.

3.5.2 In order to determine what transport problems and opportunities exist in this regard, it is important to consider the time and cost elements of undertaking a journey, the ability to travel when one wants and the available travel options.

3.5.3 The analysis presented in this section has included the following considerations:

- Selected settlements with a railway station.
- Other selected settlements without a railway station but connect to railway stations and bus-based Park & Ride sites further afield.

Method of Approach

3.5.4 Two software packages have been used to calculate journey times by car, bus and active travel modes [i.e. walking and cycling].

1. **TRACC** accessibility software has been used to calculate journey times by bus between 7am and 9am from the 25 selected settlements (using a central location) to access the strategic rail network and existing bus-based Park & Ride sites within the study area. The quickest journey time has been reported.
2. **Network Analyst** and HERE traffic data has been used to calculate journey times by car and active travel modes on the same basis as the TRACC runs.

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Selected Settlements with a Railway Station

3.5.5 Table 4 shows journey times by mode from the eight settlements which have a railway station, including Perth and Dundee, to access the strategic rail network. The table also shows the percentage (and corresponding absolute number) of resident working age population within 1km

of the settlement railway station. In this case, 1km is considered a reasonable distance that makes the stations accessible by walking and cycling. Broughty Ferry is included separately because it provides a suburban rail link to and from Dundee, and the wider rail network.

Table 4: Journey Times by Mode between 7am and 9am to access Strategic Rail Network

		Journey time (mins)					
From Settlement	To Railway Station[11]	PT	Car	Cycle	Walk	PT vs Car	% Working Age Population[12] within 1km
Dundee	Dundee	11	4	5	16	+7	6% (6,400)
Perth	Perth	12	2	5	16	+9	25% (8,600)
Arbroath	Arbroath	12	2	3	10	+10	37% (6,300)
Montrose	Montrose	5	1	3	10	+4	65% (5,800)
Carnoustie	Carnoustie	12	2	5	15	+10	44% (3,600)
Monifieth	Monifieth	11	1	2	7	+10	75% (4,400)
Invergowrie	Invergowrie	4	1	2	5	+3	99% (1,300)
Broughty Ferry	Broughty Ferry	7	4	7	17	+3	41% (5,200)

3.5.6 Journey times from the centre of the settlement to its railway station are relatively quick for all travel modes. As expected, car travel times are quickest followed closely by cycle. It is worth noting that there is a large proportion of working age population within 1km and, hence, within walking distance of several railway stations ranging from 65% to 99%, including Montrose, Monifieth and Invergowrie. Conversely, for Perth (25%) and Dundee (6%), the proportion of working age population within 1km of its railway station is much smaller, meaning more of the working age population, in percentage terms, live away from these urban centres compared with other, smaller settlements such as Arbroath and Carnoustie.

3.5.7 **Key points:**

- **Journey times from the centre of the settlement to its railway station are relatively quick for all travel modes.**
- **More of the working age population in Perth and Dundee, in percentage terms, live away from these urban centres compared with the other, smaller settlements.**

3.5.8 Whilst journey times to the railway stations are important, the level of service provided at each station is equally as important. This includes interchange facilities such as parking availability and cost, rail fares and service frequency. Details for the eight stations listed above and existing Park & Ride sites at Broxden and Scone are presented in Table 5 and Table 6 respectively.

[11] Balmossie, Barry Links and Golf Street Rail Stations have not been included because the number of passengers using these stations is relatively low.

[12] The working age population is defined as those aged 16-74.

Table 5: Railway Station Interchange Facilities, Fares and Frequencies

Railway Station	Parking Spaces	Cost	No. of trains AM Peak	Peak Return Fare to Perth[13]	Peak Return Fare to Dundee	Patronage and Parking[14]
Montrose	60	Free	16	£18.90	£14.10	Lennon ticket sales data showed a 19% decrease at Montrose station between 2014 and 2019. Whilst an overall decrease is evident, more recently passenger demand was increasing slightly pre COVID-19. Passenger journeys have been impacted by a reduction in demand for travel towards Aberdeen, but there has been an increase in trips towards Dundee in recent years.
						The main station car park was surveyed which has a capacity of 60 spaces. 85% operational capacity was exceeded by 7am before nearing capacity by 10.30am.
Arbroath	70	£2.50	15	£18.90	£11.30	Analysis of Lennon ticket sales at Arbroath station showed a 6% decrease in ticket sales between 2014 and 2019. Whilst an overall decrease is evident, passenger demand has risen slowly over the last three financial years. Passenger journeys have been impacted by a reduction in demand for travel towards Aberdeen, but there has been an increase in trips towards Dundee in recent years.
						Three car parks were surveyed. The station car park has a capacity of 18, three of which are reserved for blue badge holders. Capacity remained just below 85% across the survey period. Helen Street car park has a capacity of 23 spaces and was full by 7am and for the rest of the survey period. There are also 29 on-street bays at Helen Street, which exceeded 85% operational capacity by 9.30am before reaching 100% capacity by 11.30am.
Carnoustie	17	Free	9	£18.90	£7.30	Between 2014 to 2019, Lennon ticket sales showed a 7% increase in ticket sales at Carnoustie station.
						The main station car park has 17 spaces of which 85% operational capacity was reached by 8am, with peak capacity of 16 vehicles recorded at 8.30am, 1 space short of full capacity.

[13] Source: www.scotrail.co.uk

[14] Parking capacity obtained from TCRTM model data collection / survey programme

Railway Station	Parking Spaces	Cost	No. of trains AM Peak	Peak Return Fare to Perth[13]	Peak Return Fare to Dundee	Patronage and Parking[14]
Monifieth	20	Free	5	£16.20	£4.30	Lennon ticket sales data shows a significant increase at Monifieth between 2014 and 2019, with sales increasing from ~4,300 to ~15,800 (+267%), reflecting the impact of the new rail timetable that was introduced in December 2018 – an increase from seven station calls to 30 calls.
						The station is in a suburban location with limited parking spaces. There are 15 spaces within the station car park, with a further five available on-street. Both locations recorded availability across the survey period with a maximum of six and four vehicles recorded, respectively.
Broughty Ferry	100	£2.50	7	£15.00	£2.70	Ticket sales at Broughty Ferry doubled between 2014 and 2019, increasing from ~26,500 to ~ 53,000, despite fewer direct services from this station across this five-year period. The station has seen a reduction in the number of direct services to Perth, but an increase in the number of services to Dundee and to Edinburgh. This has resulted in an increase in passenger journeys to both; Dundee up 208% and Edinburgh up 189% in the first year of the Revolution in Rail, with Perth down 12%. Also, of particular note, passenger journeys to Arbroath up 102% across the same period.
						The rail station car park exceeded capacity by 10am on the day of the survey – parking outside of bays were recorded – and continued to exceed capacity by the end of the survey period at 12 noon. It should be noted that the station car park also serves as one of the main car parks for Broughty Ferry centre.
Dundee	9	Free	18	£13	n/a	Lennon ticket sales data shows a 12% increase in ticket sales at Dundee station between 2014 and 2019. It should be noted that there is a small car park to the rear of the station, but otherwise Dundee City Council multi-storey car parks nearby are used.
Invergowrie	-	-	2	£9.60	£15.00	Between 2014 and 2019, Lennon ticket sales at Invergowrie showed a 70% increase, with a noticeable increase in passenger journeys between FY16/17 and FY17/18 of approximately 1,800 more single journeys. Conversely, there has been a reduction in passenger journeys during FY18/19 and FY19/20
						With no official station car park, the street adjacent to the station was surveyed. A maximum of eight cars was recorded parked outside the station at 6am.

Railway Station	Parking Spaces	Cost	No. of trains AM Peak	Peak Return Fare to Perth[13]	Peak Return Fare to Dundee	Patronage and Parking[14]
Perth	261	£3.00	16	n/a	£13	Analysis of Lennon ticket sales for Perth station showed a 1% increase in ticket sales between 2014 and 2019.
						Three car parks were surveyed. The rear car park, which has a capacity of 96 spaces, was at 85% operational capacity by 8am and over 100% capacity by 8.30am. The main station car park has a capacity of 60 spaces which operated at 85% capacity by 8.30am and remained just under 100% capacity for the remainder of the day. The Station Hotel car park has a capacity of 105 spaces and is charged. This car park remained well below capacity with a maximum of 48 spaces occupied by noon.

Table 6: Park & Ride Facilities

Park & Ride	Parking Spaces	Cost	No. of buses AM Peak	Peak Return Fare to Perth	Peak Return Fare to Dundee	Occupancy
Broxden Park & Ride	400	Free	9	£1.80	-	Broxden Park & Ride site operated at 68% capacity at its busiest, with 270 spaces occupied by 1pm. This was 12% higher than at 10am.
Scone Park & Ride	55	Free	9	£1.80	-	Scone Park & Ride site recorded a maximum car occupancy of seven by 1pm. Four cars were counted in the car park by 10am.

3.5.9 **Key points:**

- **Five of the eight railway station car parks exceeded 85% operational capacity [i.e. Perth, Broughty Ferry, Carnoustie, Arbroath and Montrose].**
- **Of those five stations, Broughty Ferry, Arbroath and Montrose all exceeded capacity.**

3.5.10 The next section focusses on selected settlements without a railway station but connect to railway stations and bus-based Park & Ride sites further afield.

Other Selected Settlements without a Railway Station

3.5.11 Journey time accessibility from those settlements to a selection of railway stations and existing Park & Ride sites between 7am and 9am is shown in Table 7. The railway stations have been chosen on likelihood of use based on quickest car journey times to the station.

Table 7: Journey times by Mode between 7am and 9am to access Strategic Rail Network and P&R sites

From Settlement	To Railway Station / P&R	Car Journey Time (mins)	PT Journey Time (mins)	PT vs Car
Forfar	Arbroath	24	49	+26
	Dundee	23	55	+32
	Carnoustie	22	94	+73
	Broughty Ferry	24	66	+42
	Broxden P&R	46	-	-
	Scone P&R	39	-	-
Brechin	Montrose	13	27	+14
	Broxden P&R	60	-	-
	Scone P&R	52	-	-
Scone	Perth	7	26	+19
	Broxden P&R	11	-	-
	Scone P&R	2	-	-
Longforgan	Invergowrie	6	19	+13
	Dundee	11	41	+30
	Perth	20	56	+36
	Broxden P&R	21	-	-
	Scone P&R	21	-	-
St Madoes & Glencarse	Perth	11	34	+23
	Broxden P&R	12	-	-
	Scone P&R	14	-	-
Birkhill & Muirhead	Dundee	12	32	+20
	Invergowrie	7	56	+48

From Settlement	To Railway Station / P&R	Car Journey Time (mins)	PT Journey Time (mins)	PT vs Car
	Broughty Ferry	14	42	+28
	Broxden P&R	28	-	-
	Scone P&R	27	-	-
Coupar Angus	Perth	23	49	+26
	Invergowrie	22	78	+56
	Dundee	27	49	+22
	Broxden P&R	28	-	-
	Scone P&R	16	-	-
Inchture	Invergowrie	11	33	+22
	Dundee	16	49	+33
	Perth	21	54	+33
	Broxden P&R	21	-	-
	Scone P&R	20	-	-
Woodside & Burrleton	Perth	20	45	+25
	Invergowrie	23	106	+83
	Dundee	28	86	+57
	Broxden P&R	24	-	-
	Scone P&R	12	-	-
Liff	Dundee	11	34	+23
	Broughty Ferry	18	42	+24
	Invergowrie	6	43	+37
	Broxden P&R	27	-	-
	Scone P&R	26	-	-
Letham	Arbroath	18	31	+13
	Dundee	30	76	+46
	Broxden P&R	55	-	-
	Scone P&R	50	-	-
Errol	Perth	17	50	+33
	Invergowrie	14	60	+45
	Broxden P&R	17	-	-
	Scone P&R	18	-	-
Almondbank	Perth	13	41	+28
	Broxden P&R	9	-	-

From Settlement	To Railway Station / P&R	Car Journey Time (mins)	PT Journey Time (mins)	PT vs Car
	Scone P&R	17	-	-
Ferryden & Inchbraoch	Montrose	4	9	+5
	Broxden P&R	71	-	-
	Scone P&R	64	-	-
Monikie	Carnoustie	13	35	+22
	Broughty Ferry	14	30	+16
	Dundee	20	58	+38
	Broxden P&R	47	-	-
	Scone P&R	46	-	-

3.5.12 **Key points:**

- **In general, public transport journey times to railway stations are double, if not more than double, than car journey times.**
- **Station choice varies considerably, with many settlements limited to one station within a 20-minute drive.**
- **From the majority of settlements to the railway stations journey times are over 20 minutes by car, which could encourage car use to undertake a journey in full.**

3.6 The Importance of Perth and Dundee

3.6.1 Perth and Dundee are the operational centres for employment, education, health, leisure and culture within the Tactran Region. As such, both cities attract and generate a significant number of trips across the study area as well as from further afield, including strategic trips to and from the Central Belt to Aberdeen and the North East, therefore driving the need for investment in sustainable connectivity options across the region.

3.6.2 This section includes a selection of high-level analysis that provides evidence to support the socio-economic performance of both cities and the importance that they have to the region:

- Selected socio-economic indicators for Perth and Dundee.
- Change in SIMD domains [i.e. Income, Employment, Health, Education and Access to Services] between 2016 and 2020.
- Top 10 employment areas and travel-to-work method of transport.
- Journey time accessibility to Education and Health facilities by sustainable transport modes.

ANALYSIS

Selected Socio-Economic Indicators

Table 8: Selected Socio-Economic Indicators for Perth and Dundee

		2018		2018 vs. 2011		2011	2014	2011
Rank	Settlement	Population	Working Age Population	Population Growth	Working Population Growth	Economic Activity	Median Household Income	Car Availability
1	Dundee	148,742	112,521	1%	1%	65%	£465	58%
2	Perth	46,643	34,463	-1%	-2%	72%	£530	66%

3.6.3 Perth and Dundee have experienced minimal population growth between 2011 and 2018; however, both cities show favourable demographic profiles with the working age population making up 74% and 76% of the total population, respectively.

3.6.4 Interestingly both cities show relatively low car availability compared to the rural settlements within the study area. The lower level of car availability could reflect both the level of public transport options available to city residents and the relatively large proportion of the working age population living and working in both cities (see Section 3.3.8, Table 1 and Section 3.4, Table 3) as well as those unable to afford a car.

Table 9: Change in SIMD domains

	Change in SIMD domain (2020 vs 2016)				
City	Income	Employment	Health	Education	Access to Services
Dundee	6%	0%	0%	-13%	7%
Perth	2%	-6%	4%	-6%	2%

3.6.5 As highlighted in Section 3.4.9, some areas within both cities are amongst the 20% most deprived in Scotland and have experienced changes to varying levels of degree across several SIMD domains over the last few years. A similar picture is shown above and of particular point to note, both cities have performed better more recently against Income and Access to Service domains, but conversely performed worse against the Education domain.

3.6.6 **Key points:**

- **Dundee and Perth show favourable demographic profiles with the working age population making up 74% and 76% of the total population respectively**
- **Both cities show relatively low car availability compared to the rural settlements within the study area.**

Top 10 Employment Areas

3.6.7 As highlighted previously, it is important to consider travel-to-work movements because, in practice, population and employment are the main drivers in generating demand for travel and public transport services. Job location is equally important as this would influence the location and type of any new intervention, and hence aiming to make employment and job locations more readily accessible to the labour market.

3.6.8 The locations of the top 10 employment areas within the study area have been identified using the 2018 Business Register and Employment Survey (BRES) data and are highlighted in Figure 10. Indicative mode share is also shown, albeit obtained from the dated 2011 Census. These ten locations account for approximately 75,000 jobs, six of which are in or surrounding Dundee and just off the strategic road network.

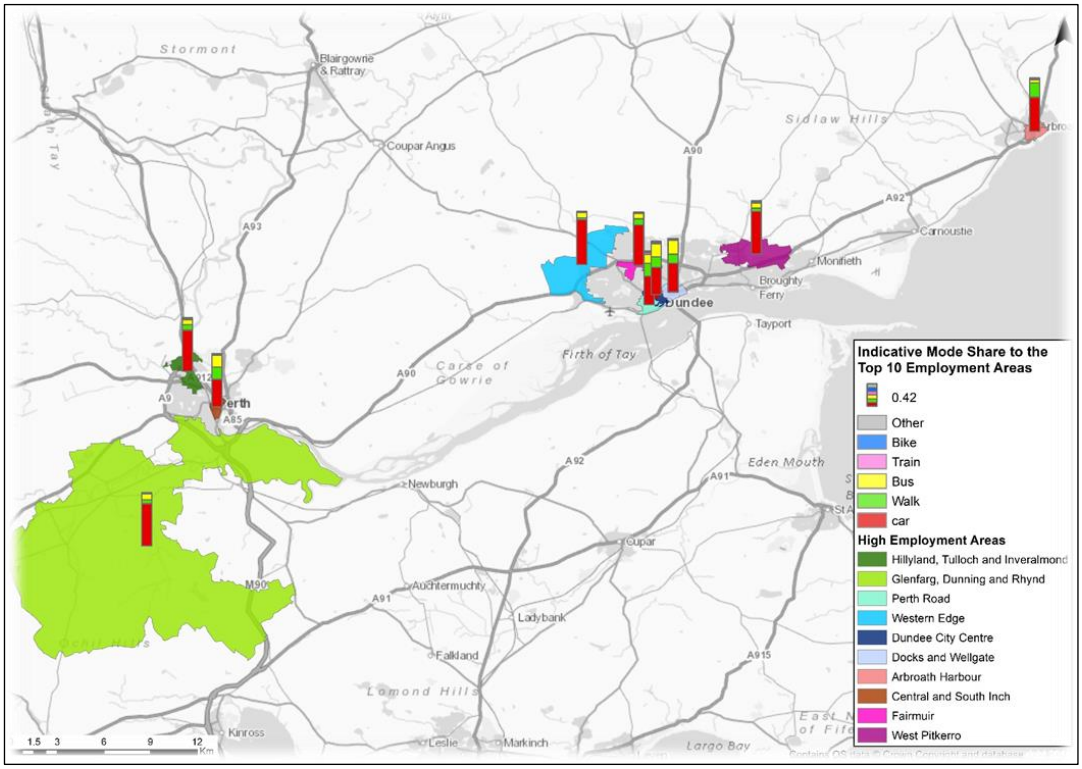


Figure 10: Top 10 Employment Areas

3.6.9 **Key points:**

- **Private car is the most dominant travel-to-work method of transport (red stacked bars).**
- **In broad terms, car mode share is higher for employment areas outside of Perth and Dundee city centres.**
- **Higher bus and walking mode shares (yellow and green stacked bars respectively) are evident for employment areas located in Perth and Dundee city centres.**

Journey Time Accessibility to Health Facilities and Education

Health Facilities

3.6.10 Dundee provides the region with the most comprehensive health care options and is one of the main employers of health care professionals and support staff within the study area.

3.6.11 Table 10 shows journey times to several health facilities by sustainable travel modes from their nearest major transport interchange. Only sustainable modes have been considered as it is assumed that people with an urgent medical issue would be driven to the nearest health facility if safe to do so. Therefore, the journey times shown below would more likely be experienced by people visiting patients, out-patients attending an appointment or staff commuting.

Table 10: Journey times to Health Facilities

			Journey time (mins)		
Council Area	**Health Facility**	**Nearest Transport Interchange**	**PT**	**Cycle**	**Walk**
Angus	Arbroath Infirmary	Arbroath rail station	-	3	10
	Brechin Infirmary	Brechin centre	-	1	4
	Stracathro		13	22	95
Dundee City	Ninewells	Dundee rail station	19	18	55
	Dundee Dental Hospital		-	6	11
	King's Cross Hospital		23	14	35
	Royal Victoria Hospital		20	12	38
Perth & Kinross	Perth Royal Infirmary	Perth rail station	15	8	21
	Murray Royal Hospital		20	10	28

3.6.12 Health facilities located in the smaller settlements [e.g. Arbroath and Brechin] are more easily reached (in terms of journey time) by sustainable travel modes from their nearest major transport interchange than those in Perth and Dundee. In both cities, there is relatively poor journey time accessibility by foot from the main railway stations, and by public transport the journey to any major city hospital would take around 20 minutes. On this basis, private car may be a preferred mode of travel to these major hospitals for those who have a car available.

Education Facilities

3.6.13 Perth and Dundee are important centres for further and higher education with many of the colleges and universities within the study area located in both cities. Table 11 shows journey times to some of the further and higher education facilities by sustainable travel modes from their nearest major transport interchange, in this case nearest rail station.

Table 11: Journey times to Education Facilities from Nearest Transport Interchange

			Journey time (mins)		
Council Area	**Education Facility**	**Nearest Transport Interchange**	**PT**	**Cycle**	**Walk**
Angus	Dundee & Angus College (Arbroath campus)	Arbroath rail station	5	3	8
Dundee City	Al-Maktoum College	Dundee rail station	14	8	19
	Abertay University		13	7	12
	University of Dundee		9	7	10
	Dundee & Angus College (Kingsway campus)		25	19	47
	Dundee & Angus College (Craigie campus)	Broughty Ferry rail station	19	16	38
Perth & Kinross	Perth College UHI	Perth rail station	11	11	33

3.6.14 On the whole, education facilities show a relatively good level of journey time accessibility by sustainable transport modes from their nearest major transport interchange – the journey times

may reflect the central locations of such facilities. This is beneficial for both students and staff alike, particularly students, as it is likely that most will rely on public transport and active travel modes to reach college or university. To give a sense of scale, the potential number of students and staff at Dundee University alone that could be benefitting from these favourable journey times is approximately 16,000 students and 2,700 staff members. Dundee & Angus College campuses at Kingsway and Craigie show a poorer journey time accessibility by comparison, as does Perth College UHI, particularly walk time.

3.6.15 In summary, with many key employment areas, and health and education facilities located in Perth and Dundee, it is clear that maintaining and improving sustainable connectivity options to Perth and Dundee is important to support inclusive growth across the region.

3.6.16 **Key points:**

- **Journey times by foot to access health services from Perth and Dundee railway stations are relatively poor, and by public transport it would take around 20 minutes to reach any major city hospital from either rail station.**
- **Journey times by sustainable transport modes to access education facilities from its nearest major transport interchange is relatively good.**

3.7 Conclusions and Emerging Transport Problems

3.7.1 From the review undertaken and summarised in this chapter of the existing transport network, services and current travel patterns across the study area, the following problems have emerged, all of which have informed the Analysis of Problems and Opportunities, as discussed in Chapter 6:

- High car availability in rural hinterland settlements.
- High car mode share - commuting into Perth and Dundee dominated by car.
- Public transport journey times from rural hinterland settlements to railway stations along the corridor are much longer than car journey times.
- Constrained car park capacity at some rail stations along the transport corridor.
- Limited rail station choice for rural hinterland settlements.
- Relatively long journey times by car from rural hinterland settlements to nearest rail station.
- Access to services (e.g. GP surgery, retail centre or schools) from rural areas has worsened overall albeit simply in terms of average drive or public transport travel times.
- Car mode share is higher for employment areas on the outskirts of Perth and Dundee.
- Plenty supply of car parking within Perth and Dundee at relatively cheap cost.

4 Stakeholder Engagement

4.1 Introduction

4.1.1 Consultation and engagement are essential elements in the development of any transport strategy, appraisal, or future design. They ensure the knowledge, ideas and experiences of people who live and work in a town, city or region feed into the transport appraisal process. In addition, engagement needs to be inclusive and assist in the resolution of tensions between different interest groups by including all views at an early stage.

4.1.2 A wide range of stakeholders, including stakeholder local authorities (officers and elected members), Community Councils, key transport operators, active travel groups, and local business and tourism organisations have contributed significantly to the study via a variety of engagement approaches as listed below. This has been supplemented by analysis of STPR2 online public survey for Tay Cities area.

- **Online Seminars:** two online seminars held during May 2020.
- **Structured Telephone Interviews:** in total, 12 interviews were undertaken during June and July 2020.
- **Briefing and Opportunity to Comment questionnaire:** a wider public engagement questionnaire issued to over 150 recipients during July 2020.

4.2 Online Seminars

4.2.1 During the Inception Phase of the study, it was agreed with Tactran and other members of the Project Steering Group that a key part of the Stakeholder Engagement Strategy would be hosting and facilitating workshops to gather the views of specific stakeholders and to identify problems and opportunities, and potential options for the study. However, due to the impact of COVID-19, in person workshops were not feasible and considerable effort was made to ensure stakeholder engagement was achieved by devising and utilising an alternative online engagement approach.

4.2.2 The following groups and organisations participated in the seminars:

Table 12: Stakeholders who Participated in Online Seminars

Organisation	
Tactran	sustrans
Dundee City Council	Living Streets
Perth and Kinross City Council	Angus Cycling Hub
Angus Council	Dundee Cycling Hub
Network Rail	Tayside Cycling UK
ScotRail	Coupar Cycling
Xplore Dundee	ByCycle Perth
Stagecoach East Scotland	Cycling Scotland
Fife Council	

4.2.3 Each seminar covered the following items:

- Introduction and Background.
- Presentations on Initial Data Trends and Key Observations, and Revolution in Rail Proposals.
- First discussion session – Problems and Opportunities.
- Summary of Key Points.
- Second discussion session – Potential Options.
- Next Steps and Closing Remarks.

SUMMARY OF PROBLEMS AND OPPORTUNITY DISCUSSION

CONNECTIVITY AND ACCESSIBILITY

4.2.4 Several stakeholders noted that rural connectivity is a real issue across the region, particularly in Angus and some areas of Perth and Kinross. It was also noted that transport poverty is a huge concern in these areas where there are limited transport options. This includes the ability to access education and healthcare. Transport provision is generally much better following the rail corridor on the coast; however, provision is significantly worse in the more rural, inland hinterlands.

4.2.5 Ninewells Hospital has come into focus due to COVID-19. It has highlighted that there are good transport connections, in general, from Angus; however, it has also highlighted that public transport connections from Forfar and Kirriemuir, which are both relatively near Dundee, are perceived to be poorer.

4.2.6 There has been work carried out in Angus talking to local employers about incorporating active travel into people's commuting journeys. The larger employers in Montrose are Baker Hughes and GSK. The majority of people working for these employer's commute by car, often from the Dundee area. Stakeholders believed that there is a problem with people arriving by train and then reaching their employment within Montrose – the problem being the final mile journey. Making this journey easier would encourage people to shift from travelling by car to more sustainable modes. It is a similar story with Dundee and Angus College in Arbroath. Students in particular arrive from outlying villages, are dropped off by car as they find that the bus journey times are too long, or the time of the services are unsuitable for what they need. It was suggested that more work needs to be carried out to see how these journeys could be facilitated.

4.2.7 It was highlighted that Perth and Kinross Council is currently liaising with community transport groups about the possibility of operating a community transport service from rural areas to main settlements, which would link with local services operating between Perth and Dundee. Additionally, electric vehicles are being considered for this.

4.2.8 It was noted that the lack of direct services results in people having to take two separate services and the requirement of interchange. One reason for this is that buses tend to go into the centre of the city, but this is not necessarily where employment locations are. Bus operators, however, noted that it is not an unwillingness to provide these direct services but instead trying to understand the constraints and demands in the area and find a way to facilitate these whilst providing a commercially viable service.

ROAD TRAFFIC

4.2.9 Stakeholders noted that there are problems with traffic volumes exceeding the road network capacity and causing delay in the study area, especially in Dundee and Perth city centres – high

car usage was raised as the key cause. Xplore Dundee noted that they have carried out some analysis of pinch points within Dundee and are willing to share details for this study.

4.2.10 Within Dundee there are specific traffic volume / delay problems on the A90 Kingsway and at Claypotts. It was noted that these pinch points do not only affect Dundee but also Angus residents accessing Dundee. It was believed that people who arrive in Dundee in the morning from Angus results in a large east to west movement across the city as people access large employment centres such as Ninewells. It was also noted that there are problems with children being unable to cycle to school and leisure facilities in Dundee due to the lack of good infrastructure and high traffic volumes. In Perth it was highlighted that a number of the streets are unpleasant for walking and cycling as a result of too much traffic. One participant noted that they had given up utility cycling in Perth because of traffic volumes making it too dangerous.

RAIL

4.2.11 A number of participants raised concerns over the lack of ticket checks both on trains and at stations in the area. This was particularly an issue for short journeys. Participants noted that is very easy to travel on these local train journeys without paying for a ticket, which they felt meant that these trips were not being recorded and 'true' demand for rail services may be misrepresented.

4.2.12 It was highlighted that between Perth and Dundee there is only Invergowrie station and questioned whether there is demand that justifies additional stations. It was noted that when considering new train stations, it is important to think about it in the context of the service and the service it would provide, not just the infrastructure of the station itself. It was also noted that existing rail passengers on the route would experience an increase in journey time due to additional calling points, and on top of that it would impact the overall capacity of the rail network.

4.2.13 Some participants felt that the cost of the train between Perth and Dundee is too high relative to other journeys in the area and this deters people from travelling. Often, as a result, people choose to travel by car instead. Stakeholders noted that this comes down to the willingness of the public to pay for a service.

4.2.14 It was noted that, in general, train station car parks across Scotland are full and it was felt that this is a problem within the study corridor.

BUS

4.2.15 It was felt that bus journey times can be very long which deters people from using a service. This is a consequence of traffic delays and routing and could be improved if there were fewer cars on the road or more bus priority measures introduced.

4.2.16 There were concerns raised over accessibility of bus stops in the area, and general facilities. Some of the stops require patrons to cross busy roads or have no shelter for waiting, both of which deter people from using the bus network.

4.2.17 The cost of bus travel is often a barrier for people, especially for those traveling without concession cards.

4.2.18 It was noted that the perception of public transport can often be a barrier to people using the service. Generally, people think that is "easier" to drive but that is not always the case. Some participants felt that there is a misconception of bus travel nationally; however, operators are trying to change this by investing in their fleet to provide a high-quality service. There was a feeling that marketing and publicity of bus services and timetables could be improved.

4.2.19 Public transport availability after working hours was highlighted as a problem across Angus outwith Arbroath. It was noted that evening services are subsidised and therefore there are limitations, but people travelling at those times such as those working shifts, in shops and restaurants are more likely to be dependent on public transport than other groups. This was also raised as a problem for those wanting to attend events in the evening, for example concerts at Perth Concert Hall. Quite often there will be a long wait before an appropriate bus arrives, which deters people, especially the elderly from travelling. Finding the balance between frequency and timing is difficult.

PARK & RIDE

4.2.20 Participants noted that Park & Ride is currently limited within the region, and many believed that this is a result of it being too easy to drive. It was felt that once people are in their cars they will stay there until their destination as they see it as their easiest option. It was noted that Park & Ride will struggle to be competitive when it is easy to park in the city centre. To be successful, restrictions will have to be introduced to discourage people from driving. For example, reducing the number of car parking spaces available and making it more expensive to park. Stakeholders noted that measures like these would have to be introduced alongside a new Park & Ride site. It is believed that there is some willingness from politicians to do this; however, it was noted that there is plentiful supply of private parking available in Dundee. Beyond that there are residential streets on the outskirts which people use to park and then walk into town. There were concerns that if the council took a hard-line and increased charges they could be easily undercut by private providers.

4.2.21 It was noted that there may be an issue with the preconception of what Park & Ride is. If you were to ask people in the area what Park & Ride is, they would talk about Broxden and that would be it. It was suggested that we need to think about the subtle applications of Park & Ride. For example, at Broughty Ferry where there is the car park, electric vehicle (EV) charging points and buses. This would challenge the idea that all Park & Ride facilities must be large, out-of-town sites.

4.2.22 With regard to current Park & Ride sites, it was highlighted that there was a problem connecting Broxden Park & Ride and Perth train station. The bus did not go to the station, which meant an additional walking leg to the journey – not everyone is able to do this walk, especially while carrying luggage.

4.2.23 The stakeholders noted that any Park & Ride or Park & Choose facility would have to be located in a position outside the city centre that intercepts incoming traffic. In addition to this, it would need a reliable and frequent public transport service. It should also have fully integrated active travel links.

4.2.24 Some participants noted potential sites that they believed would be appropriate for Park & Ride. These are situated at the main compass points into the city; in the north at Jack Martin Way where there is already a turning circle; Arbroath Road; Tay City South, which is a separate study, and in the Perth area. As well as Park & Ride, the site could have dual purposes as employment and servicing centres. Providing one solution for many purposes could potentially make these more feasible and provide additional commercial opportunities.

4.2.25 It was highlighted that there have been discussions between sustrans and Fife Council about the Park & Ride site south of the Tay Bridge, which some participants hoped would incorporate a segregated cycle lane for the Tay Bridge.

ACTIVE TRAVEL

4.2.26 The participants felt the biggest barrier to active travel was the lack of high-quality infrastructure. This includes well connected, segregated cycle paths and secure storage facilities at both origin and destination.

4.2.27 There was a consensus that Dundee is not a particularly attractive place to cycle. Although there is some infrastructure, it is mostly poor quality in addition to topographical challenges. The area around the City Quay Port was highlighted as a particular problem as it turns into a car park, which is often used by HGVs that can overspill onto the path.

4.2.28 Dundee Cycling Forum noted that they had been in contact with the councils with regard to developing a strategic cycling network summary and identified areas where road reallocation could occur through the widening of pavements.

4.2.29 It was noted that there is a lack of secure storage for bicycles at both origins and destinations. This is especially the case in deprived areas where, for example, people may be living in flats with no other option then to carry their bike up and down the stairs. This is a potential barrier to active travel.

4.2.30 A noticeable success of active travel is the bike park at Dundee train station where people can cycle along either NCN1/77, reach the station and securely park their bike. It is a double-decked facility with 24 hours CCTV. It was noted that there are some storage facilities at other stations such as Invergowrie, Monifieth and Broughty Ferry, but these were not as effective. For example, at Arbroath Station there has been some problems with vandalism, which deters people from wanting to cycling to the station. Therefore, it was suggested that similar infrastructure to that at Dundee station should be introduced along with Park & Ride / Park & Choose options.

4.2.31 It was highlighted that Perth and Kinross Council has recently implemented cycle lockers and shelters at a number of bus stops, encouraging the bus and cycle option. However, there is limited storage at the sites and the facilities have not been promoted, which has resulted in poor usage.

4.2.32 It was noted that if there was a way to reward choosing to travel by active modes and this could be a good way to encourage modal shift. One participant highlighted that Perth already have a reward scheme in place for both visitors and residents. More details can be found at www.mi-cnx.com/news/mi-rewards-adds-smart-active-travel-points180.

4.2.33 It was felt that the perception of active travel could be a barrier to its use, including thinking that it is easy to drive and believing that cycling on the road is much more dangerous than it is.

4.2.34 It was noted that cyclists are generally taken less seriously than those travelling by car. Many stakeholders agreed that in the future this needs to change, and active travel needs to become the priority.

4.2.35 There are some on-going projects within the study area. It was noted that an electronic bike scheme will be introduced into Dundee soon. This has been delayed numerous times, but it was felt that it would be a positive initiative and encourage people to use active travel. The plan is to initially implement 250-300 bikes, with planning permission already granted for about 20 docking stations in Dundee. Conversations are already in place about extending this and providing on-street bikes from Ninewells through to Monifieth with the potential for a similar scheme on the Arbroath to Montrose corridor. Participants agreed that E-Bikes would take away some elements of the weather deterring people from cycling. Should this scheme go ahead, there would be clear benefits to be gained from incorporating into Park & Choose sites.

4.2.36 It was noted that there are schemes in Edinburgh, Glasgow and Stirling already providing bicycles around the city. Some participants wondered if the onus for these projects is now on individual authorities to implement rather than national projects. Another project that was mentioned was the Northern Lines Project, which has been delayed. This project aims to facilitate travel from the north of the city into the centre.

4.2.37 It was noted that Perth and Kinross Council and Angus Council were successful in securing active travel funding through The Places For Everyone Fund. In Coupar Angus there is a cycling project funded by the climate challenge fund. Work has been carried out to engage local school children and encourage cycling. There has also been a huge increase in electric bike usage in the area. In addition, Coupar Angus Cycling Hub is also involved in developing the Strathmore Cycling Network, which is looking to connect Alyth, Blairgowrie and Coupar Angus. The roads are currently too dangerous for cycling.

4.2.38 It was also noted that sustrans has been reviewing the national cycle network over the past few years and has a vision of a traffic free network suitable for unaccompanied 12-year-olds. Some of the sections may be removed in the coming years if they do not meet the standard or cannot be changed to meet the standards. They have been looking at Route 77, between Perth and Dundee, to identify sections that need to be improved.

4.2.39 In addition to this, it was noted that there was an option to implement a protected cycle lane along the west lane of the Tay Bridge. There has been a proposal for a Park & Ride/Choose south of the River Tay, which could facilitate a cycle lane. Some stakeholders expressed that there may be merit in considering a Park & Choose facility on the southern bank of the Tay providing routes in from north east Fife.

4.2.40 Stakeholders also discussed the current situation with COVID-19 and the opportunity to introduce temporary infrastructure. Sustrans explained that the Spaces For People scheme that was recently announced is looking for quick measures from local authority and regional partnerships that can temporarily be implemented to make it easier for people to social distance. For example, widening pavements or new active travel priority measures. The effects of these measures will be monitored but for the time being they will be temporary measures to deal with the public health crisis. It was highlighted that during “lockdown” there has been a 300% increase in cycling at a particular location on Arbroath Road in Dundee according to Cycling Scotland data.

4.2.41 It was suggested having bikes at stations and Park & Ride sites could facilitate active travel in the region. This would remove the need to have your own bike and the need to take it on public transport. It would also provide certainty that you can reach your destination from the station you alight from. However, it was noted that ScotRail has recently stopped the Bike and Go scheme.

INTEGRATION

4.2.42 To have a successful sustainable transport network it was noted that public transport and active travel must be fully integrated and easy to use. The timing of services is very important for integrating transport. It was noted that as soon as there are long waits between services people will get back into their car instead. Additionally, it is really important that people can access their local stations by active travel to facilitate sustainable journeys.

4.2.43 It was highlighted, anecdotally, that the reliability of the train service is crucial for encouraging people to use active travel to access their local stations. The example given was that one can leave their bike at Broughty Ferry train station but then their return train will get cancelled and they will have to alight at Dundee. Stakeholders noted that the trains need to be reliable so that you know you are going to be able to get off where your bike is.

4.2.44 One participant noted that they had purchased a folding bike for travelling on the train between Dundee and Stirling, but the majority of people do not want to purchase a folding bike. There either needs to be bikes located at stations or the ability to travel with your bike on the train.

4.2.45 Some participants felt that public transport and active travel have been set against each other, especially in Dundee, and are seen as competition instead of complements to one another. For example, it is perceived that new cycling infrastructure takes away road space from a bus lane.

However, the ultimate aim should be to get people away from travelling by car and grow both the public transport and active travel mode share.

ENVIRONMENT

4.2.46 Many participants noted that the strategy needs to prioritise the climate change agenda. Air pollution was highlighted to be a significant problem in the area, especially in the city centres, with both Dundee and Perth declaring these Air Quality Management Areas. Dundee is developing proposals for a Low Emission Zone (LEZ), but it is yet to be seen what the future plans are for this. Although at first changes will be implemented to meet standards, they may become stricter in the future which could encourage Park & Ride. Perth & Kinross Council are assessing options regarding air quality in Perth.

4.2.47 It was noted that with the government encouraging electric vehicles there should be provision for charging at any new Park & Ride sites.

SIGNAGE / WAYFINDING

4.2.48 It was noted that signage in the area could be improved. An example of this was at Arbroath train station where there is very little information as to where to go.

4.2.49 Some participants noted that Dundee bus and train stations could be connected better via a walking / cycling link. Additionally, the signage between the bus and train station could be improved.

PROBLEMS AND OPPORTUNITIES

4.2.50 From the information obtained from stakeholders as part of the online seminars, a unique list of transport problem and opportunity themes relevant to this study have been identified. These have been examined and considered alongside evidence presented in Chapter 6, Section 6.2.

PROBLEMS

- Lack of rural connectivity, particularly within Angus.
- Lack of direct public transport services.
- Traffic delays at key junctions approaching Perth and Dundee during peak times.
- Long bus journey times.
- Poor frequency of evening public transport services.
- Outwith peak times, very easy to drive with plentiful parking available within Dundee and Perth.
- Lack of active travel infrastructure.
- Lack of secure storage for bikes.
- Poor public transport and active travel integration.

OPPORTUNITIES

- Improve Park & Choose integration, affording public transport opportunities for first and last mile.
- Sustrans Places for Everyone Fund.
- Consider roll out of bike hire scheme and use of electric bike.

POTENTIAL OPTIONS

4.2.51 Stakeholders were asked to consider potential options that could address the problems and opportunities identified:

- Strategic Park & Ride linking bus and train in west of Dundee – suggestion of new / relocated station at Invergowrie. Improvements in infrastructure between Perth and Invergowrie also required.
- Placement of Park & Choose sites linking to existing public transport corridors into Dundee and Perth. Need to include facilities for secure bike storage.
- Consider providing active travel infrastructure from new Park & Choose sites to key employment sites [e.g. Ninewells Hospital, Aviva, SSE, Universities and Colleges]. Critical to ensure links are in place to locations, not just city centre.
- New Park & Choose sites would need to be outside Dundee [i.e. outside the boundary of the swallow roundabout]. Similar thoughts for Perth – important to physically intercept vehicles before they enter the cities.
- Linked to the above, consider bus gates at key entrances to Perth and Dundee – located on Park & Choose corridors. This could encourage more use of Park & Choose sites and facilities.
- Potential for Park & Choose site on south side of Tay Bridge.
- Suggestion of permanent cycle ways from Tay Bridge, through Dundee Riverfront and linking with wider E-Bike scheme and series of travel hubs.
- Bus fleet improvement – helps environment plus improves perception of bus travel and the passenger experience.
- Integrated ticketing to include Park & Ride ticket offer.
- Ensure appropriate marketing and visibility of new facilities.
- SEStran has a strategic regional active travel network so take the opportunity to build on this and join it up with Tactran strategic active travel network cycle routes across the Tay Cities Region.
- Electric bike stations strategically placed within and around Perth and Dundee – linked to a bike hire scheme.
- Community transport to serve rural area.

4.3 Structured Telephone Interviews

4.3.1 Key stakeholders were invited to take part in a Structured Telephone Interview where a series of topic guides were used to shape the questions asked to ascertain the Stakeholder's perspective on key problems, opportunities and potential options, as well as to provide awareness of any developments or sources of data that could help inform the study.

4.3.2 The following groups and organisations participated in the one-to-one telephone interviews:

Table 13: Stakeholders who Participated in Telephone Interviews

Organisation	
Dundee Airport	James Hutton Institute
Road Haulage Association	Network Rail

Organisation	
Freight Transport Association	ScotRail
Visit Scotland	Xplore Dundee
Local Tourism Groups (Tay Cities Deal)	NHS Tayside
University of Dundee	Stagecoach East
Dundee and Angus College (via email)	

4.3.3 Each telephone interview was tailored to the participant but generally followed the format below:

- **General Introductory Questions**
- **Transport Problems**
  - What are the transport problems in the study?
  - How do these transport problems impact your organisation?
  - What are the main routes in the area that are of interest to your organisation?
  - What time of day is your organisation using the transport network?
- **Park & Ride**
  - Are you aware of people using Park & Ride / Choose in the study area?
  - Are the existing sites in the right place?
  - What are the barriers to using Park & Ride / Choose?
  - Do you think there is an opportunity for further facilities in the area?
- **Active Travel**
  - Are there good active travel links?
  - What are the barriers to active travel?
- **Transport Opportunities and Options**
  - Do you have suggestions of transport improvements / interventions in the study area and, if so, how would they impact your organisation?

SUMMARY OF STRUCTURED TELEPHONE INTERVIEW RESPONSES

CONNECTIVITY AND ACCESSIBILITY

4.3.4 Accessing key facilities was noted as a problem in the area, particularly in areas of Angus where there is a lack of rural bus provision.

4.3.5 Connectivity was found to be one of the main pillars of the Tay Cities Region Tourism Strategy. The transport network is key to welcoming visitors into the area. In Perth, most of the tourism activity happens outside the city centre, where there is no rail access. Therefore, visitors often choose to travel by car.

4.3.6 Stakeholders felt the majority of visitors do not want to change transport modes. This is because they will choose to travel in the easiest and least stressful manner. It is difficult to encourage tourists to get out of their car and onto a bus, which may not necessarily take them where they

wish to go. It was noted that the information regarding public transport services and what options are available would have to improve before people would choose to get out of their car.

4.3.7 As well as accessing individual tourist attractions, it is very difficult to travel between tourist attractions in the region without a car. For example, if you were to travel from the V&A in Dundee to Glamis Castle, there would be no way to complete both of these journeys by public transport. In particular, it was noted that travelling to Glamis Castle by public transport was a problem.

ROAD TRAFFIC

4.3.8 Traffic volumes / delay was noted as a significant problem across the transport network in the region. In Perth, the river is viewed as a key a pinch point that causes delay. The Kingsway in Dundee was the most frequently mentioned pinch point in the Dundee area along with the Swallow roundabout. In addition to this, Xplore Dundee undertook analysis of pinch points at junctions in Dundee using average speeds which identifies the following junctions they consider as having problems:

- Nethergate / West Marketgait Junction.
- King Street / East Marketgait Junction.
- Upper Meadowside Junction.
- Lower Stobswell Junction.
- Forfar Road / Kingsway Junction.
- Morrisons Junction.
- Claypotts Junction.
- Lochee High Street.

4.3.9 Unsurprisingly, stakeholders reported that delays are normally more of an issue during peak hours. Additionally, it was mentioned that hosting large events in the area can increase traffic and result in delay.

4.3.10 There were concerns regarding traffic volumes leading to longer journey times. This included bus journey times being longer and, in some cases, buses being unable to run to the timetable which deters people from using the service. It was also noted that long journey times adversely impacts freight movements, especially with time sensitive goods.

BUS

4.3.11 It was noted that patronage on buses in the area has been declining in recent years, following national trends. However, whilst local services have been impacted by this, there has been growth in the inter-city bus market. It was felt that this was due to investments made by Stagecoach in terms of improved frequency and enhanced vehicles that facilitate longer journeys.

4.3.12 Long journey times were felt to be one of the main reasons people in the area do not travel by bus. It was noted that there are very few bus priority measures in the area and therefore buses are impacted by general road traffic.

4.3.13 Lack of direct bus services was also noted to be an issue in the area, which can mean it is often easier to travel by car. Stakeholders also believed that it can also be difficult to travel across local authorities by bus. There is added confusion with different bus operators and tickets. As a result, people opt to travel by private car for ease. It was noted however that in some cases one can change bus before going into the city centre which reduces journey time, but these services are not promoted enough.

4.3.14 Stakeholders believed that to encourage more people to use the bus, services must be frequent and reliable. Those stakeholders living in commuter villages outside Perth noted that buses may only operate hourly, not at convenient times and do not connect with employment areas. They also felt that the easier the service is to use the more accessible it is to the public. For example, real time information and contactless payments should encourage people to use the services.

4.3.15 Concerns were also raised that the bus fleet is perceived to be old and at specific times, buses can be full of school children. However, it was highlighted that there has been recent investment into improving the bus fleet in the area. For example, Stagecoach bus fleet with 46% of the vehicles being Euro 6 classification. Stagecoach also has ambition to have 12 hydrogen buses next year. Whilst it was not raised at the workshops, the study team is aware that other bus operators in the area have also invested in cleaner engines.

PARK & RIDE / CHOOSE

4.3.16 It was noted that Broxden Park & Ride is reasonably well used and seems to be a well-located site. It was felt that given the projected growth on the West side of the city, expansion at that site would be good. It was noted that people who use Broxden tend to be people who live in the area.

4.3.17 Many interviewees noted that for Park & Ride to be successful in the area there will have to be other complementary measures put into place. Right now, one of the largest barriers to Park & Ride across the study area is that it is too easy to drive a private car and park in the centre of Perth or Dundee. Cheap parking makes it an inexpensive and convenient choice of transport. To make Park & Ride more attractive, it was felt that parking charges may have to be increased and/or bus priority measures implemented to reduce bus journey times.

4.3.18 It was noted that it would be good if any new facility could incorporate a number of features. This could include a parking facility, bus options, active travel links and retail options. In addition to this, it could provide a secure overnight parking facility for freight drivers, something which is currently lacking in the area. In order to do this, it would have to be built to withstand the weight of heavy good vehicles.

4.3.19 As far as locations for Park & Ride facilities, interviewees agreed that intercepting commuters at the city boundaries would significantly reduce traffic volumes / delays. It was noted that these would be best situated on the main arterial routes in and out of Perth and Dundee. The following locations around Dundee were suggested (NB interviewees were less specific for locations around Perth, but suggested main routes and compass points around the city):

- South of the Tay Bridge.
- Near the Hutton Research Institute in Invergowrie.
- Riverside Drive.
- Lochee Road.
- Forfar Road.
- Arbroath Road.

4.3.20 The bus industry noted that introducing Park & Ride facilities could potentially reduce the number of buses travelling into the city centre from surrounding towns. For example, a potential option could be that smaller, feeder bus services travel between local towns and Park & Ride facilities. Passengers can then connect with a service travelling into the town centre. This would reduce traffic delays and subsequently improve journey times.

4.3.21 It was noted that introducing a Park & Choose facility could significantly reduce the number of cars travelling to NHS Tayside facilities, particularly Ninewells. The car park at Ninewells is

constantly over-capacity which can induce further anxiety for patients travelling to hospital. A Park & Choose facility would be mostly targeting staff and possibly some visitors. Providing safe active travel routes to the hospital for those who would like to use them is important but also, providing an alternative mode of transport, like a shuttle bus, for those less able.

ACTIVE TRAVEL

4.3.22 It was noted that more last mile journeys could be made by active travel if the infrastructure was improved. This includes having secure storage for bikes at bus and train stations and being able to travel on public transport with bikes. Dedicated paths to employment areas would help make active travel a more attractive option. A few interviewees highlighted that public transport and active travel should be complementary to one another. Stakeholders did believe that if the 'choose' element were to be successful, not only should cycle parking and hire facilities be provided, but appropriate routes between these sites and areas of employment need to be introduced.

4.3.23 NHS Tayside advised that they currently employ 14,000 staff across the region with approximately 7,000 people based at Ninewells Hospital. NHS Tayside estimate that a significant number of employees live within 2 miles of the workplace. The NHS believe that while active travel options may not be suitable for all patients, there is clearly an opportunity to target large numbers of staff with improved transport options which could include active travel modes and infrastructure.

4.3.24 It was noted that there are difficulties cycling in the study area due to weather and topography. Electric bikes could be a solution to this. Another barrier to active travel is a lack of safe cycle paths, including lighting.

4.3.25 Electric bike hubs were suggested as a solution to the difficulties of the topography of Dundee. This could potentially operate with a hub in the city centre with satellite stations at significant destinations. NHS Tayside indicated that they felt Ninewells would be a good location for a satellite station.

RAIL

4.3.26 ScotRail noted that proposals for the Revolution in Rail project will result in timetables and stopping patterns in the area being altered which will mean more frequent stops at specific stations. These stations could provide an opportunity to make use of current station car parks and facilitate more Park & Ride journeys. ScotRail and Network Rail both recommend upgrading current facilities before considering introducing additional infrastructure.

4.3.27 It was noted that the train is much faster for commuter journeys and a few interviewees noted that they choose to travel by train rather than bus due to the shorter journey times. Although, those participants live close to a local rail station so accessing the station is easy.

4.3.28 There is a lot of scope in the area from a tourism point of view to get a train and then go for a walk or cycle, especially along the coast, as it is flat and therefore accessible.

COVID-19

4.3.29 Stakeholders did note a number of concerns regarding the introductions of pop-up active travel infrastructure as part of the COVID-19 response. Some were concerned that very limited consultation has been undertaken, while the freight fraternity emphasise the importance of ensuring any temporary cycle lanes do not interfere with goods deliveries which will also be crucial to the economic recovery. Additionally, it was noted that in some areas bus lanes had been compromised to provide dedicated cycle lanes. While bus operators intimated that they fully support people choosing active travel there were concerns that decisions which involve

reallocation of road space are being made without appropriate consideration and consultation which could significantly impact the bus industry if buses are expected to share reduced capacity with general traffic.

4.3.30 Many interviewees noted that they were concerned about travel patterns and behaviours changing as a result of COVID-19. Currently, the public is being encouraged to stay away from public transport and travel either by private car or active travel. Although it is difficult to predict what will happen going forward, traffic delays may increase due to increased car use. This would adversely impact movement in the area. Delivery times could increase along with bus journey times.

4.3.31 There were also concerns about people choosing to travel less. This could be due to people working at home and, in some cases, offices closing. The effect is not limited to commercial office environments but may include online shopping and its effects on retail centres. NHS Tayside noted that they have carried out a survey and the results showed both staff and patients were reluctant to use buses in the future due to COVID-19. This could significantly increase private traffic getting to and from the facilities and will add pressure to already full car parks.

4.3.32 Another problem that interviewees highlighted was the negative impact that COVID-19 may have on the climate change agenda. There were concerns that we may be moving away from sustainable transport modes.

4.3.33 On the other hand, it was noted that this could be a good opportunity to 'reset' the way our transport network operates to make it more efficient, convenient and sustainable. Indeed, representatives of the bus industry suggested that the situation could be used to town and city centres are redesigned with priority for active travel and public transport, with private cars restricted appropriately. The key challenge however will be to accurately communicate the benefits to the public to ensure acceptance.

OTHER TOPICS

4.3.34 NHS Tayside noted that they are looking to transform the way some of their services operate going forward which will impact the movement of staff, patients and visitors using their facilities. In particular they are looking at trying to minimise the number of times an individual has to travel to the hospital by providing consultation, diagnosis and treatment in one day – a one stop shop – rather than spread across multiple days and trips to various facilities. This could change the type of traffic that is coming into Ninewells.

4.3.35 Additionally, some medical units are currently being relocated from Ninewells into other facilities in the region such as Stracathro or Perth Royal Infirmary. Patients, staff and potentially visitors will be diverted to these other sites. It was highlighted that the wayfinding and signage could be improved to help facilitate these movements, especially for Stracathro.

4.3.36 Finally, it was noted that something the tourist industry are aware of is the growth in the motor home market in the UK. This includes both rentals and ownership. This is putting a strain on rural infrastructure, especially with water waste facilities. In terms of transport, there could be problems in the future such as where these vehicles travel throughout the region and where they stay.

PROBLEMS AND OPPORTUNITIES

4.3.37 From the information obtained from stakeholders during the structured telephone interviews, a unique list of transport problem and opportunity themes relevant to this study have been identified – these have been examined and considered alongside evidence presented in Chapter 6, Section 6.2. Several potential options have also been raised during the telephone interviews.

PROBLEMS

- Poor access to key facilities, particularly in Angus.
- Traffic delays at key junctions in both Perth and Dundee during peak times.
- Long bus journey times.
- Lack of direct public transport services.
- Lack of frequent public transport services.
- Outwith peak times, it is very easy to drive with plentiful car parking spaces.
- Potential negative impacts of pop-up active travel measures.

OPPORTUNITIES

- Improvements to the bus fleet.
- Park & Choose facilities which provides many services.
- NHS Tayside employs 14,000 staff in total with approximately 7,000 based at Ninewells Hospital. A significant number of employees live within 2 miles of the workplace – this presents an opportunity to target large numbers of staff with improved sustainable transport options.

POTENTIAL OPTIONS

- Strategic Park & Ride facilities at the compass points of the cities.
- Further roll out of low emission/green fleet buses.
- Provide cycle hire / electric bike hire at key Park & Choose sites.
- Provide active travel links from Park & Ride sites.
- Consider providing safe and secure areas for HGV drivers at Park & Ride sites.
- Introduce smart-light technology at congested junctions to facilitate movement of traffic, especially buses.

4.4 Wider Community Engagement

4.4.1 As discussed in Section 1.3, this Case for Change was undertaken prior to and during the COVID-19 pandemic. Local community councillors, local authority elected members and other 'non-key' stakeholders were provided with a Briefing and Opportunity to Comment Questionnaire in early July 2020. At the time, Scotland was gradually coming out of a national lockdown. As such, it was decided by the project Steering Group that consultation with the general public was not appropriate, as for example the public was being asked not to use public transport, and it was agreed to undertake community consultation through elected members and community councillors, who, as representatives of the local community / public, were the most appropriate means of wider community engagement at that time.

4.4.2 The questionnaire was tailored to ensure maximum value was gained and is provided in Appendix B to this report. It set out the key transport problems and opportunities that had been identified to date and asked several questions as shown below:

- General introductory questions
- Transport Problems and Opportunities
  - What do you think the key problems are within the study area, in terms of active travel, public transport and private vehicles?
  - What do you think the key opportunities are within the study area, in terms of active travel, public transport and private vehicles?
- Park & Ride / Choose
  - What are the current barriers to people using existing sites?
  - Are there opportunities to improve existing sites?
  - Are there any new sites you feel could be provide an opportunity for improving the Park & Ride /Choose complement?
- Other questions
  - Do you have any thoughts on what may be the future opportunities for active travel / integration and challenges for public transport as a result of the COVID-19 pandemic?

4.4.3 In total, 13 organisations responded to the questionnaire (listed below) representing a significant population[15] within the study area (Figure 11):

- Tactran elected members
- Liberal Democrats Spokesperson, Dundee City Council
- Fife Senior Officer
- One Dundee Councillor
- Two Perth and Kinross Councillors
- Three Angus Councillors
- Muirhead, Birkhill and Liff Community Council
- Dundee City Centre and Harbour Community Council
- Fintry Community Council
- Stobswell and District Community Council

[15] Source: National Records of Scotland, Mid-2019 Population Estimates

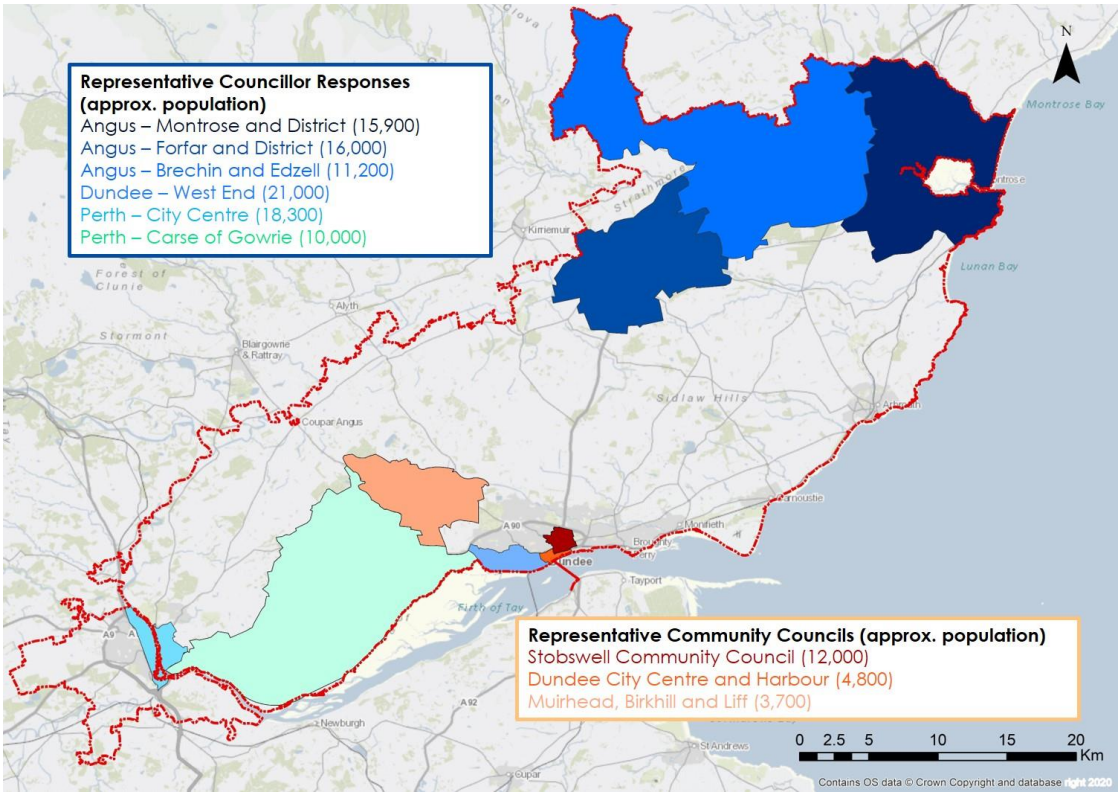


Figure 11: Population and Catchment of Respondents to Questionnaire

4.4.4 The responses to the comment questionnaire are summarised below.

SUMMARY OF QUESTIONNAIRE RESPONSES

TRANSPORT PROBLEMS

ACTIVE TRAVEL

4.4.5 There were numerous comments regarding problems surrounding active travel in the region. Ten respondents noted that a lack of appropriate infrastructure in the form of safe, segregated walk and cycling ways was a significant barrier to active travel. It was felt that even on existing dual paths there needs to be stricter rules for cyclists to make them attractive to pedestrians. Other barriers included safe storage for bikes (3 respondents), adverse weather conditions (1 respondent), topography (1 respondent) and pollution (1 respondent).

4.4.6 One respondent noted that they felt that private vehicles were still given too much space and priority. However, it was noted that due to the rural nature of the region many distances are too great for pedestrians.

PUBLIC TRANSPORT

4.4.7 Three respondents noted that bus journey times in the region were long, making public transport an unattractive transport option. Some highlighted causes of this such as long distances (2 respondents), non-stopping HGVs (1 respondent) and through traffic especially on the northern and southern approaches to Forfar Road / Kingsway in Dundee (1 respondent).

4.4.8 Three respondents mentioned that many rural areas in the region are not covered by bus services, which makes it hugely uncompetitive compared to private car. Examples included that

there is no direct bus service to Perth or Montrose from Forfar. One respondent noted that there are limited early morning, late evening and Sunday services.

4.4.9 Another issue that was raised regarding bus travel was that sometimes it is difficult to make a complete journey as one would often have to change bus / bus operator mid journey. This was raised by three respondents. It was felt that the interchange facilities were not high-quality either, including Dundee bus station which was deemed by one respondent to be unwelcoming by some respondents.

4.4.10 It was noted by one respondent that with a large portion of low paid employment in the region, many people cannot afford to travel by bus.

4.4.11 With regard to rail travel, it was noted by two respondents that whilst there is a core rail corridor that stretches across the region, which links the key towns and cities, outwith this corridor access to the rail network is limited.

4.4.12 In general, it was noted that there was a lack of regional planning with regard to public transport with no coordination between bus and rail timetables. Travelling across Angus, east to west, out with the coastal corridor, is difficult with poor connections between Aberdeen and Forfar.

ROAD TRAFFIC

4.4.13 Road traffic volumes and delay were highlighted as a particular issue at the Kingsway A90 junction by two respondents and both the Double Tree junction and the A90 Claverhouse Road junction by one respondent. This is compounded by the fact that often the car is the only reasonable travel option in the region, with no real alternatives such as Park & Ride facilities near Dundee.

4.4.14 The issue was raised by three respondents that people are believed to be using their private vehicle to carry out short journeys that could be made by active travel.

FREIGHT

4.4.15 It was noted by two respondents that there is no freight hub in the study area. Concerns were raised by another respondent over the belief that satellite navigation systems direct freight from the Queensferry Crossing onto the A92 rather than the motorway. Concerns were also noted from two respondents that inappropriately sized vehicles have to make deliveries within the narrow streets of Perth town centre.

PARKING

4.4.16 One respondent noted that the displacement of shoppers and residential parking causes economic damages making the study area less attractive to the business and property market. Additionally, it was highlighted that commuters either cannot afford parking or do not want to pay for parking and consequently end up parking in many residential areas. Another respondent noted that there is already a lack of parking for residents before other cars are displaced.

SIGNAGE / WAYFINDING

4.4.17 It was mentioned by two respondents that that there is a lack of signposting to truck routes for long distance non-stopping traffic.

TRANSPORT OPPORTUNITIES

ACTIVE TRAVEL

4.4.18 Five respondents noted that there is an opportunity to develop a regional network of active travel routes for walking, cycling and wheeling. This could link tourist centres and attractions while aligning with commuter routes. To be inclusive, it should link outlying villages into Dundee and Perth. New active travel routes must be safe to make them an attractive transport option. One respondent noted that changes being considered through National Planning Framework 4 should incorporate active travel as a main requirement for all new/improved developments.

4.4.19 It was noted that diverting non-stopping HGVs and traffic would open up opportunities for segregated walkways / cycleways or simply wider footpaths. Additionally, one respondent noted that better management of car parks in the area could provide more space for cycle storage.

PUBLIC TRANSPORT

4.4.20 Two respondents noted that it is important to separate bus services from rush hour traffic, providing an opportunity to reduce journey times. Another two respondents commented that they felt there is an opportunity for integrated public transport ticketing in the region.

4.4.21 One respondent suggested developing a dial-a-ride for rural bus, away from the main road and once the Cross Tay Link Road is open, banning HGVs from Perth City centre.

4.4.22 A respondent noted that a new integrated travel centre at Perth rail station would be a positive new development. This could include a better tariff structure or no tariff at all. This respondent also noted a desire to see Perth used as a trial site for free urban public transport.

4.4.23 One respondent noted that there is an opportunity to engage and speak with minority groups to ensure that public transport is accessible to all. Assisted and mobility impaired users require to travel to access key services and they often need to travel by public transport.

4.4.24 One respondent noted that in Angus a bus service from Brechin Castle Gardens into town would be a worthwhile investment.

PARK & RIDE / CHOOSE

4.4.25 Four respondents felt that new Park & Ride / Choose sites in the region would reduce traffic volumes / delays in the city centres. In order to be effective, they would have to provide dedicated, fast transport links into the centres. To do this, bus services must utilise bus lanes. One respondent suggested there could be bus services travelling directly to railheads to support modal shift.

4.4.26 One respondent noted that there should be investment into Electric Vehicle (EV) charging for both cars and buses at any new Park & Ride / Choose site. Additionally, two respondents noted that Park & Ride / Choose sites should have integrated active travel routes to employment locations.

4.4.27 Another respondent noted that a development of a Perth North Parkway rail station linked to the Cross Tay Link Road / A9 junction Park & Ride site and a development of Bridge of Earn Parkway rail station as a south of Perth Park & Ride site would help the transport network in the region.

4.4.28 Additionally, one respondent felt that taxis could be offered incentives to service any Park & Ride / Choose sites.

ROAD TRAFFIC

4.4.29 One respondent felt that improving the lane priority at Kingsway and amending road layout at Albert Street / Pitkerro Road would reduce traffic delay. An additional measure to reduce traffic delay was a bypass to the A92 from A90 west of Dundee.

4.4.30 Four respondents noted that it was imperative to keep freight to dedicated routes to reduce traffic delays and improve journey times. It was felt that a transport hub located near the A90 would alleviate a lot of HGV traffic issues in North Angus too. Finally, suggestions were made by two respondents that there should be restrictions in place in terms of the size of HGVs and the time deliveries are allowed to take place.

PARKING

4.4.31 It was suggested by one respondent that there should be integrated parking rules, regulations and costs across the region creating a more joined up approach. Additionally, it was noted that there should be no increase in city centre parking availability along with the roll out of resident parking zones and increased parking tariffs, except for electric vehicles.

TECHNOLOGY

4.4.32 One respondent noted that there should be investment in renewable energy for transport.

BARRIERS TO EXISTING PARK & RIDE SITES

4.4.33 One respondent felt that it is too easy and cheap to park in Perth to make the Park & Ride facilities attractive. They noted that increasing parking prices will discourage commuter parking. It was also noted that there should be payment on entry to a Perth Park & Ride which provides both parking and a one day, all Perth, travel ticket.

4.4.34 In general, it was felt that there is a lack of Park & Ride facilities in the region. However, one respondent highlighted that where they have been proposed they have been met with a lot of opposition. An example of this was adding an extra deck to the car park at Broughty Ferry which would have provided Park & Ride facilities to Dundee and beyond.

4.4.35 It was noted by Fife Council that there should be increased parking at Leuchars rail station. Leuchars is situated outside the study area but is a main commuter station for people working in Dundee.

OPPORTUNITIES TO IMPROVE EXISTING PARK & RIDE SITES

4.4.36 One respondent noted that there should be better integration between bus and rail timetables at Invergowrie train station.

4.4.37 It was believed that there is an opportunity to provide EV charging points in Tay Bridge car park in partnership with Tay Bridge Joint Board and Fife Council.

NEW PARK & RIDE SITES

4.4.38 One of the respondents felt that there are Park & Ride or Park & Stride opportunities at the following locations. They noted that the purpose of these sites would be to specifically displace residents, shoppers and local business parking:

- Dura Street.
- Langlands Street.

- Craigie Street.
- Ferguson Street.

4.4.39 Two respondents noted that from a Dundee context, the following sites would help the transport network:

- Business industrial site at Jack Martin Way.
- Swallow roundabout.

4.4.40 One respondent noted that from a Perth context, the following sites would help the transport network:

- The A9 / Cross Tay Link Road junction, along with a rail station.
- Blairgowrie Road.
- Dundee Road.
- Bridge of Earn, along with a rail station.
- Crieff Road.

4.4.41 One respondent noted that there are opportunities on the periphery of Perth to support rail journeys without the need to start in the city centre. Additionally, it was felt that a West Carse Parkway rail station at or west of Errol would help modal shift. It was felt that rail use would not develop from Perth station beyond the existing numbers as no additional parking can be easily provided.

4.4.42 A Park & Ride site at the southern end of the Tay Bridge was also suggested. Another respondent noted that the adopted FIFEplan (2017) safeguards land to the south east of the Tay Bridge roundabout at the A92 / B046 junction for the provision of a Park & Ride / Choose facility.

COMPLEMENTARY MEASURES TO ENCOURAGE USE OF PARK & RIDE / CHOOSE

4.4.43 One respondent suggested revising the pricing regime to provide free parking for residents and shoppers for up to a certain time limit with a punitive fee form parking beyond that.

4.4.44 Another respondent noted that there should be a review of the affordability of public transport in the region as it is currently perceived to be costly.

4.4.45 One respondent commented that to operate a successful Park & Ride site there would need to be dedicated routes through the area along with improved bus priority. In terms of buses, one respondent felt that there should be a review into bus service franchising options and the option for the council to own and lease a fleet of electric buses.

4.4.46 To develop a sustainable transport network, in addition to Park & Ride sites, it was felt by one respondent that there should also be support for e-bike hire schemes and EV charging.

COVID-19 – OPPORTUNITIES AND CHALLENGES FOR THE TRANSPORT INDUSTRY

4.4.47 It was noted by four respondent that travel patterns may shift as a result of COVID-19, with daily commutes reducing. On the other hand, another respondent felt that, in time, travel patterns will return to what they used to be. The same respondent also advised caution against assuming there would be more commuting cycling trips.

4.4.48 With regard to active travel, it was noted by two respondents that there is increased demand and opportunities to develop further with public support.

4.4.49 It was highlighted by one respondent that the government are advising people to avoid public transport during the transition period from lockdown and that this will undoubtedly impact travel behaviours longer term.

4.4.50 The transport problems and opportunities raised by stakeholders via the questionnaire have been examined and considered alongside evidence presented in Chapter 6, Section 6.2. In light of the current gradual easing of COVID-19 restrictions, we will consider the timing of wider public consultation during the next stages of the STAG process and its potential implications on this Case for Change study.

STPR2 Online Public Survey for Tay Cities area

4.4.51 As part of the 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 the Tay Cities region. Of those 284 responses, 161 are relevant to the study area catchment and are summarised below. The responses have been used to validate the views of stakeholders who were engaged with as part of the study.

ACTIVE TRAVEL

4.4.52 A lack of high quality, safe and linked cycle routes was highlighted as a major transport problem by 23 respondents. Safe, segregated routes that are well signposted were thought to be crucial for encouraging cycling across the region. Respondents also noted that there is a lack of safe walking and wheeling routes. In some cases, specific routes were highlighted as a concern. For example, one respondent noted that cycling in Perth is dangerous and a new bridge from Bridgend to North Inch is needed. Another respondent noted that the lack of safe cycle routes to schools is a problem.

4.4.53 Two respondents noted that there is a lack of cycle storage at key points across the region, including Dundee Bus Station. They noted that secure storage facilities are important to promote and facilitate a shift to active travel.

4.4.54 One respondent felt that there is too much focus on active travel commuting routes and not enough focus on leisure routes, which could contribute to the growth of sustainable tourism.

PUBLIC TRANSPORT

4.4.55 A problem highlighted by eight respondents is the lack of public transport integration. This includes integrating timetables across services, reducing wait times and overall journey times. Reducing public transport journey times is important as long and unreliable journey times were highlighted as a barrier to travel for several respondents. Two respondents noted that there is currently a lack of functional, multi-modal transport infrastructure which, if implemented, would help facilitate an integrated transport network. The lack of integrated ticketing across the public transport network was also highlighted as a problem, with some noting that it made services more expensive and the journey confusing.

4.4.56 Some respondents noted that there is also a lack of integration between public transport and active travel. The capacity for bikes on both trains and buses was highlighted as a problem as well as space for wheelchairs on buses. This lack of integration was noted by some as a reason why people choose to travel by car rather than more sustainable modes.

4.4.57 16 respondents raised the cost of public transport as a problem. This included the cost of both bus and rail travel. Several respondents noted that it was cheaper for them to drive than taking public transport. Some solutions, including introducing a family travel pass, were suggested to make public transport more accessible and attractive. Three respondents felt that public transport needs to be highly subsidised for everyone.

4.4.58 Five respondents highlighted that limited bus provision across the region was a major problem, particularly in rural areas. Three respondents highlighted that in Angus, particularly west Angus, the lack of bus services results in forced car ownership. One respondent highlighted that they are concerned at the vulnerability of bus services in the region and worry that if services are cut, they will no longer be able to travel.

4.4.59 Across the region, respondents noted that there is a lack of bus services both in the evenings and at weekends, limiting transport options and encouraging car travel. A lack of real time information for bus services was also raised as a concern.

4.4.60 In terms of rail travel, respondents noted that service delays and cancellations are a barrier to rail travel.

PARK & RIDE / CHOOSE

4.4.61 Five respondents raised that there is a lack of Park & Ride / Choose facilities. East of Perth was highlighted as an area in need of a P&R / Choose site.

ROAD TRAFFIC

4.4.62 Five respondents highlighted that there are too many private vehicles in the city centres and seven respondents raised a related concern regarding pollution and air quality, impacting the health of those in the area. Two respondents felt that it was too easy to drive into the city centres, aided by plenty of available parking. On the other hand, one respondent felt that a lack of parking leads to seasonal overfilling onto pavements, creating barriers for walking and wheeling.

4.4.63 One respondent noted that although parking charges have increased, the alternative travel options are not attractive. Expensive parking charges were also noted to disproportionately impact those from lower income households.

4.4.64 High traffic volumes resulting in long journey times was highlighted by several respondents. Some respondents felt that very little was being done to resolve high traffic volumes in the city centres, including Kingsway in Dundee. Seven respondents suggested that a Dundee bypass would relieve some of these issues. Broxden roundabout in Perth was also highlighted as an area of traffic delay. It was suggested that measures should be introduced to limit car use, such as charging single car occupancy vehicles.

4.4.65 Respondents felt that high traffic volumes, which exceed capacity at times, leave little road space for active travel. In addition to this, poor road surfaces, which impact both cars and cyclists was noted as a concern, with four respondents highlighting that this can be very dangerous for cyclists in particular.

5 Key Documents Review

5.1 Introduction

5.1.1 A review of key documents has been undertaken covering a wide range of relevant regional and local transport strategies and plans as well as previous studies. The document review has been undertaken to capture further information that could inform the problems and opportunities relevant to the study and to supplement those identified by stakeholders and through data analysis.

5.2 Key Documents

5.2.1 The following documents have been reviewed:

REGIONAL TRANSPORT STRATEGIES, PLANS AND STUDIES

- STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
- The Tay Cities Deal, 2018
- Tactran Regional Transport Strategy, 2015-2036 Refresh
- Tay Cities Passenger Rail Usage Survey Report, 2018
- Tay Estuary Rail Study, 2011
- Regional Bus Information Strategy, 2011
- Tactran Park & Ride Strategy and Action Plan, 2008

LOCAL TRANSPORT STRATEGIES, PLANS AND STUDIES

Perth

- Perth and Kinross Local Development Plan 2 – 2019
- Shaping Perth's Transport Future 2010-2014
- Development of the A90 Perth Park & Ride Site, 2010
- Perth and Kinross Council Air Quality Action Plan 2009

Dundee

- Dundee Local Development Plan 2 – 2019
- Dundee Air Quality Action Plan 2011
- A90 West of Dundee Park & Ride Study, 2010
- South Tay Park and Ride, Business Case Analysis, 2010

Angus

- Angus Local Development Plan – 2016

5.3 Identified Problems and Opportunities

5.3.1 The document review has identified 18 problem themes and eight opportunity themes, all of which have been categorised. These are shown in Table 14 and Table 15 respectively. They have informed the Analysis of Problems and Opportunities as discussed in Chapter 6.

Table 14: Problem Themes from Key Documents Review

No.	Problem Category	Problem Theme(s)	Document Source
1	**Active Travel**	Lack of high-quality, safe walking and cycling routes	▪ Development of the A90 Perth P&R Site, 2010 ▪ Tactran RTS, 2015-2036 Refresh ▪ Tay Estuary Rail Study, 2011 ▪ Shaping Perth's Transport Future 2010-2014 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
2	**Public Transport Accessibility & Connectivity**	Transport poverty in rural hinterlands	▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
		Transport Exclusion	▪ Tactran RTS, 2015-2036 Refresh
		Lack of direct public transport services	▪ The Tay Cities Deal, 2018 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
		Limited access to public transport service provision	▪ Tactran P&R Strategy and Action Plan, 2008
3	**Public Transport Availability**	Limited transport choice	▪ The Tay Cities Deal, 2018 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
4	**Public Transport Service Provision**	Lack of frequent public transport services	▪ Tactran RTS, 2015-2036 Refresh ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
		Lack of reliable bus services	▪ Tactran P&R Strategy and Action Plan, 2008

No.	Problem Category	Problem Theme(s)	Document Source
5	**Public Transport Infrastructure and Information**	Lack of travel information	▪ Regional Bus Information Strategy, 2011 ▪ Tactran RTS, 2015-2036 Refresh
		Limited accessible public transport infrastructure	▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
6	**Transport Integration**	Lack of public transport timetable integration	▪ Regional Bus Information Strategy, 2011 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
		Lack of transport integration between modes, including PT and active travel	▪ Tactran RTS, 2015-2036 Refresh ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
7	**Rail Station Parking Capacity**	Constrained parking capacity at rail stations	▪ Tay Cities Passenger Rail Usage Survey Report, 2018
8	**Traffic Delays**	Traffic delays at key locations within Dundee and Perth during peak times	▪ A90 West of Dundee P&R Study, 2010 ▪ Development of the A90 Perth P&R Site, 2010 ▪ Tactran P&R Strategy and Action Plan, 2008 ▪ Tactran RTS, 2015-2036 Refresh ▪ Shaping Perth's Transport Future 2010-2014 ▪ The Tay Cities Deal, 2018 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
		Long bus journey times	▪ Tactran P&R Strategy and Action Plan, 2008 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
9	**Parking**	Lack of parking capacity at large employment sites	▪ A90 West of Dundee P&R Study, 2010
10	**Car Dependence and Dominance**	High car mode share	▪ Tactran RTS, 2015-2036 Refresh ▪ Tay Cities Passenger Rail Usage Survey Report, 2018 ▪ Tay Estuary Rail Study, 2011 ▪ Perth and Kinross Council Air Quality Action Plan 2009

No.	Problem Category	Problem Theme(s)	Document Source
11	**Air Pollution**	Poor air quality in towns and cities across the region	▪ Tactran P&R Strategy and Action Plan, 2008 ▪ Shaping Perth's Transport Future 2010-2014 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020 ▪ Perth and Kinross Council Air Quality Action Plan 2009

Table 15: Opportunity Themes from Key Documents Review

No.	Opportunity Category	Opportunity Theme(s)	Document Source
1	**Accessibility & Connectivity**	Improve access to public transport	▪ South Tay Park and Ride, Business Case Analysis, 2010 ▪ Perth and Kinross Local Development Plan 2 – 2019 ▪ Dundee Local Development Plan 2 – 2019 ▪ The Tay Cities Deal, 2018
		Improve sustainable connectivity	▪ Development of the A90 Perth P&R Site, 2010 ▪ Tactran Park & Ride Strategy and Action Plan, 2008 ▪ The Tay Cities Deal, 2018 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020
2	**Public Transport Availability**	Increase public transport choice	▪ Perth and Kinross Local Development Plan 2 – 2019
3	**Public Transport Growth**	Improve transport infrastructure and services	▪ South Tay Park and Ride, Business Case Analysis, 2010
		Capitalise on Revolution in Rail (RinR) and Aberdeen to Central Belt rail proposals	▪ Commission Brief
4	**Public Transport Infrastructure and Information**	Improve access to travel information	▪ Development of the A90 Perth P&R Site, 2010 ▪ Regional Bus Information Strategy, 2011 ▪ Perth and Kinross Council Air Quality Action Plan 2009

No.	Opportunity Category	Opportunity Theme(s)	Document Source
5	**Transport Integration**	Improve transport integration	▪ Tay Estuary Rail Study, 2011 ▪ Tactran Park & Ride Strategy and Action Plan, 2008 ▪ Tactran RTS, 2015-2036 Refresh ▪ Angus Local Development Plan – 2016 ▪ Dundee Air Quality Action Plan 2011
6	**Modal Shift**	Encourage sustainable transport modes	▪ Development of the A90 Perth P&R Site, 2010 ▪ Tactran Park & Ride Strategy and Action Plan, 2008 ▪ Tactran RTS, 2015-2036 Refresh ▪ Perth and Kinross Local Development Plan 2 – 2019 ▪ Dundee Local Development Plan 2 – 2019 ▪ Angus Local Development Plan – 2016 ▪ The Tay Cities Deal, 2018 ▪ Perth and Kinross Council Air Quality Action Plan 2009 ▪ Dundee Air Quality Action Plan 2011 ▪ STPR2 Initial Appraisal: Case for Change Tay Cities Region, 2020

6 Analysis of Problems and Opportunities

6.1 Introduction

6.1.1 This part of the STAG appraisal process is used to identify and evidence actual and perceived transport problems and opportunities. It forms the basis for the development of TPOs, option generation and the appraisal of the options. It is therefore important that problems and opportunities are considered in the wider context and, as such, relevant issues and constraints have also been considered.

6.1.2 STAG methodology broadly describes each of these terms as:

- **Problem** – existing and future problems within the transport and land use system [e.g. traffic delays].
- **Opportunity** – chances to improve the transport and land use system to realise opportunities [e.g. improve journey times and reliability].
- **Issue** – uncertainties that the study may not be in a position to resolve but must work within the context of [e.g. uncertainty at the time of the study whether a major road link will be built that will affect the study area].
- **Constraint** – represents the bounds within which a study is being undertaken [e.g. the funding levels that can realistically be obtained, or Scottish, UK or EU legislation].

6.1.3 Three separate exercises have been undertaken to identify existing transport problems and opportunities across the study area:

- data analysis;
- key documents review; and
- stakeholder engagement.

6.1.4 A total of 104 individual problems and 159 individual opportunities have been identified through these exercises. It should be noted that many of the identified opportunities from the stakeholder engagement exercise and documents review have been deemed to be transport options. Some examples include: “Develop the Active Travel Network,” “Develop Green Travel Plans" and “Roll out of Bike Hire Schemes.” Therefore, ‘opportunities’ such as these have informed the Option Generation, Sifting and Development task, as discussed in Chapter 8.

6.1.5 A review of the individual problems was undertaken which highlighted many that were very similar and, as such, were grouped into broad categories and then more specific themes for ease of assessment.

6.1.6 A total of **8 problem categories** have been identified:

1. **Active Travel**
2. **Public Transport Accessibility**
3. **Public Transport Connectivity**
4. **Transport Integration**
5. **Rail Station Parking Capacity**
6. **Park & Ride**
7. **Journey Times by Road**
8. **Air Pollution**

6.2 Transport Problem Summary Tables

6.2.1 Informed by the problem categories and problem themes, eight transport problem summary tables have been prepared covering:

- transport user problems covering all modes of transport across the network;
- the root causes[16] of the transport user problems from the perspective of transport supply; and
- the supporting evidence.

6.2.2 The tables form a key component of the Initial Appraisal: Case for Change stage of the study, providing a clear evidence base of existing problems and a direct linkage into setting TPOs (Chapter 7) and generating transport options (Chapter 8).

TRANSPORT PROBLEM SUMMARY TABLE 1

Problem Category Ref. 1	**Active Travel**
Transport User Problem(s)	**Walking and cycling in Perth and Dundee, and in some rural areas, can feel unsafe and be inconvenient for some**
Root Cause(s)	▪ Motorised traffic levels and speeds ▪ Lack of high-quality, safe walking and cycling routes
Evidence of Route Cause(s)	▪ Details of road accidents involving Cyclists and Pedestrians[17] presented below ▪ Active Travel Audits covering several settlements across Angus, Dundee and Perth & Kinross[18] presented below ▪ Key documents review (see Problem Category 1 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.26 – 4.2.41, 4.3.22 – 4.3.25, 4.4.52 – 4.5.54 and 4.4.65 for detail)

Road Accidents involving Cyclists and Pedestrians

6.2.3 The figures below show road accidents by severity type [i.e. fatal, serious injury, minor injury] involving cyclists and pedestrians in Perth and Dundee between 2015 and 2019.

6.2.4 The figures reveal a significant number of accidents have occurred in both cities, including fatalities. Although not visible in the figures, most accidents that occurred in Perth and Dundee involving pedestrians and cyclists occurred at or near to road junctions.

[16] The root causes are the problem themes, which have been identified via stakeholder engagement and documents review, and validated through the data analysis

[17] STATS19 database via https://bikedata.cyclestreets.net/

[18] https://www.tactran.gov.uk/ActiveTravelAudits.php

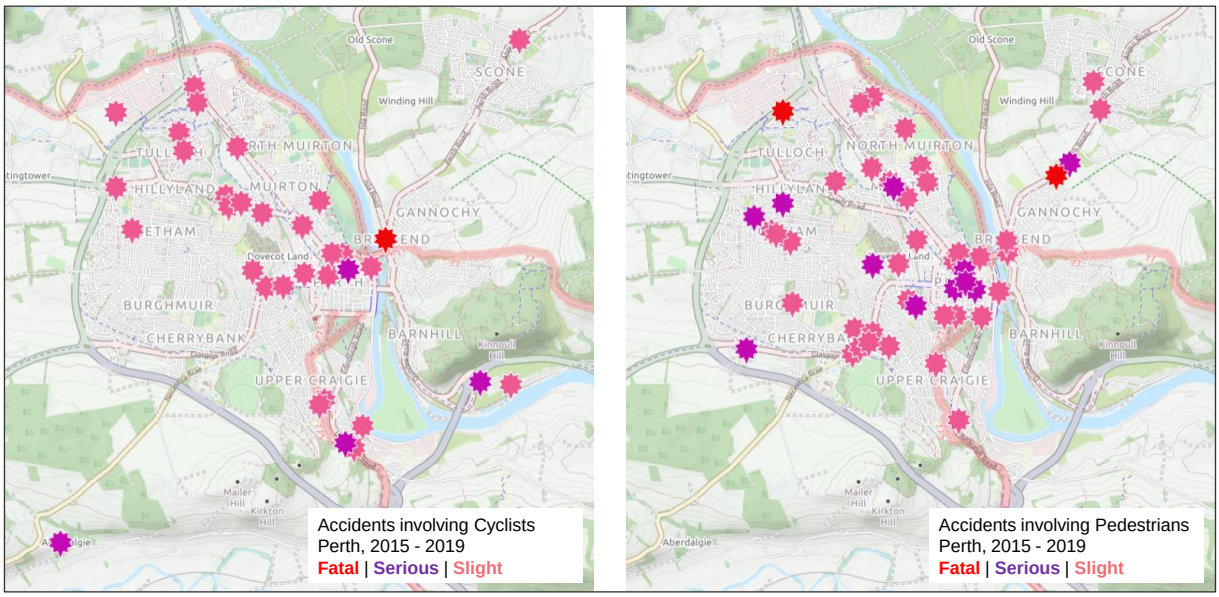


Figure 12: Accidents by Severity Type involving Cyclists and Pedestrians in Perth, 2015 – 2019

Figure 13: Accidents by Severity Type involving Cyclists in Dundee, 2015 – 2019

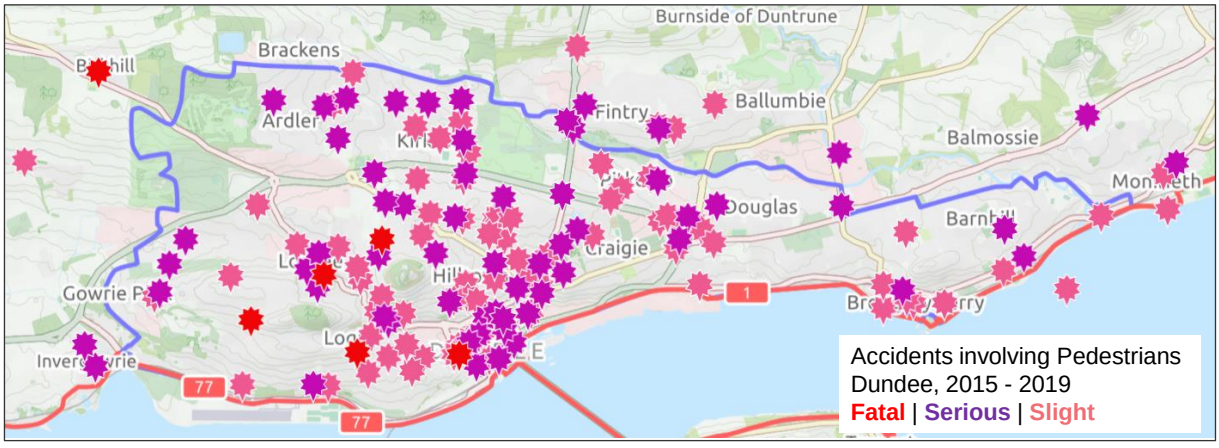


Figure 14: Accidents by Severity Type involving Pedestrians in Dundee, 2015 – 2019

Active Travel Audits

6.2.5 Tactran has completed many Active Travel Audits covering a number of settlements across the region, including in Angus (Arbroath, Brechin, Forfar, Monifieth and Montrose); in Dundee (Coldside, Lochee and North East Dundee); and in Perth & Kinross (Bridgend/Scone, Crieff and Perth City North). These audits have provided up-to-date information of existing active travel networks and include an account of infrastructure and facilities for walking and cycling within each settlement.

6.2.6 Key gaps and issues identified that existing infrastructure does not always join up and as a consequence an active travel user is presented with a series of intermittent routes rather than a complete network.

Feedback from Stakeholder Engagement

6.2.7 **Key Points:**

- The biggest barrier to active travel, both in the cities and rural hinterland settlements, is the lack of high-quality infrastructure, including well connected, segregated cycle paths and secure storage facilities at both origin and destination.
- Perceptions of active travel could be also be a barrier to its use – people believing that it is easier to drive and that cycling on the road is much more dangerous than it is.

Relevant feedback from STPR2 online public survey

6.2.8 **Key Points:**

- Lack of high quality, segregated active travel links
- Lack of space on public transport for bikes and wheelchairs

TRANSPORT PROBLEM SUMMARY TABLE 2

Problem Category Ref. 2	**Public Transport Accessibility**
Transport User Problem(s)	**Access to public transport can be difficult for some**
Root Cause(s)	▪ Limited access to public transport service provision ▪ Lack of travel information
Evidence of Route Cause(s)	▪ Analysis of Journey Time Accessibility (key points provided below – see Sections 3.5.12 & 3.5.13 for detail) ▪ Percentage of adults reporting that Public Transport is Convenient or Fairly Convenient[19] in 2018 presented below ▪ Scottish Access to Bus Indicator 2019[20] presented below ▪ Key documents review (see Problem Categories 2 & 5 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.4 – 4.2.8,4.3.4 – 4.3.7 and 4.4.57 – 4.5.59 for detail)

[19] https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fpublic-transport

[20] https://www.transport.gov.scot/publication/transport-and-travel-in-scotland-results-from-the-scottish-household-survey-1/scottish-access-to-bus-indicator-2019-weekday-score/

Journey Time Accessibility

6.2.9 **Key Points:**

- In general, public transport journey times to railway stations are double, if not more than double, than car journey times.
- Station choice varies considerably, with many settlements limited to one station within a 20-minute drive.
- From the majority of settlements to the railway stations journey times are over 20 minutes by car, which could encourage car use to undertake a journey in full.

Convenience of Public Transport in 2018

6.2.10 Figures for the general convenience of Public Transport are from the Scottish Household Survey (SHS). Whilst no definition is given of what is meant by convenience, for the purposes of this study it is assumed convenience is the time-related attributes that impact on the convenience of public transport, including (but not limited to):

- The inconvenience of public transport not being immediately accessible or available, covering walk time, access to PT more generally that is not walking, and wait time (at origin or transferring between services or modes).
- The inconvenience of not being able to travel at the desired time, covering service frequency and variations in departure times.
- The inconvenience of having to interchange.
- The inconvenience of the absence of good user information [e.g. wayfinding, on-journey information etc.].
- The inconvenience of unreliable services and arriving late.

6.2.11 Figure 15 shows the percentage of adults reporting that Public Transport is Convenient or Fairly Convenient by local authority area. The national level percentage is also presented.

6.2.12 The figure reveals that the 2018 resident adult population in Angus found public transport most convenient at 73%, which is eight percentage points above the national percentage (65%). The resident adult population in Perth & Kinross and Dundee City found public transport less convenient by comparison, with both local authority areas below Angus and the national average and noting that residents in Dundee City found public transport to be the least convenient of the three local authority areas in 2018.

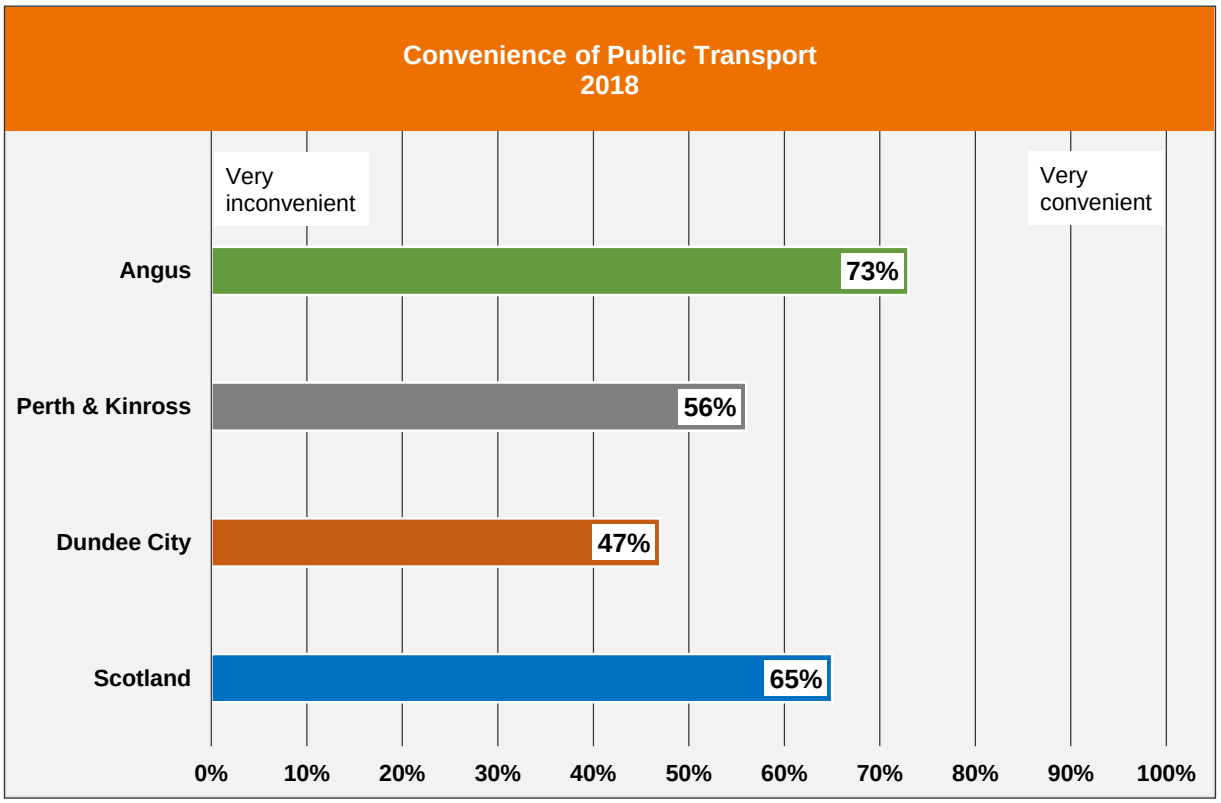


Figure 15: General Convenience of Public Transport

Scottish Access to Bus Indicator

6.2.13 The Scottish Access to Bus Indicator (SABI) provides a useful and objective measure of accessibility to public transport by bus at the datazone level of geography. The measure is based on the frequency of weekday and / or weekend services.

6.2.14 Figure 16 shows a combined weekday and weekend SABI indicator score for 2019. Least accessible datazones are coloured red and most accessible datazones are coloured dark green.

6.2.15 It is clear that rural hinterland settlements and other settlements between Perth and Dundee are least accessible. Some least accessible settlements include Letham, Monikie, Errol and St Madoes. Unsurprisingly, access to bus is most accessible in larger urban areas, including Perth and Dundee. Those living in other smaller towns along the corridor, including Carnoustie, Arbroath and Montrose, have reasonable access to bus (denoted by the orange datazones).

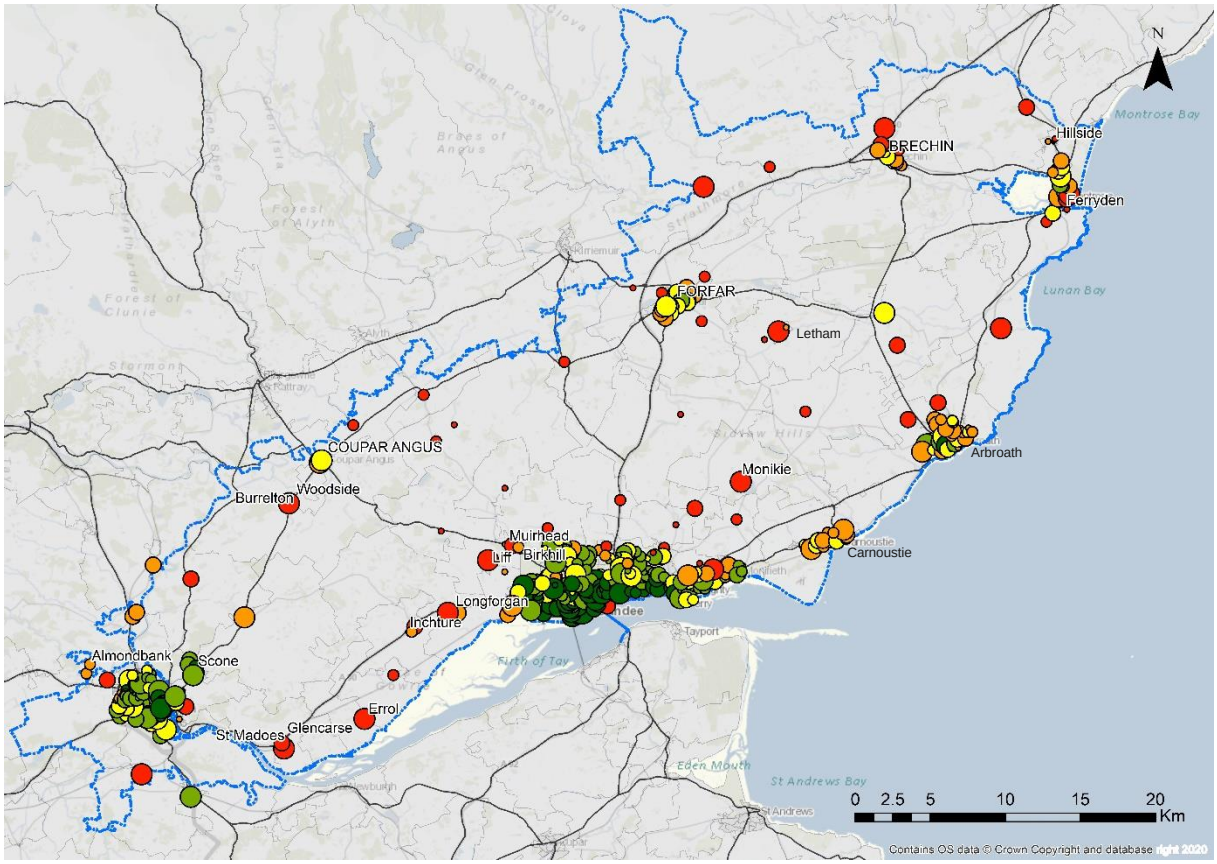


Figure 16: Scottish Access to Bus Indicator 2019

6.2.16 Whilst Figure 16 above shows accessibility to public transport by bus is most accessible in larger urban areas, including Perth and Dundee, as one would expect, Figure 15 shows that the general convenience of public transport is less convenient in Dundee City and across Perth & Kinross. This direct comparison may appear contradictory; however, it should be borne in mind that the SABI indicator (Figure 16) is only considering one measure of convenience [i.e. frequency of bus services], whereas the general convenience of public transport (Figure 15) is most likely to be considering several measures related to convenience. As such, a degree of care is needed when considering these findings.

Feedback from Stakeholder Engagement

6.2.17 **Key Points:**

- Accessing key facilities is a problem, particularly in areas of Angus where there is a lack of rural bus provision.
- Transport provision is generally much better following the rail corridor on the coast; however, provision is significantly worse in the more rural, inland hinterlands. Transport poverty[21] is a concern in these areas where there are limited transport options.
- Public transport service information and available options would have to improve to encourage travel by more sustainable modes.

[21] Transport poverty is a concept that broadly refers to difficulty or inability to make necessary journeys due to a combination of income / cost and service availability
View NatCen Social Research Transport & Inequality Report

Relevant feedback from STPR2 online public survey

6.2.18 **Key Points:**

- There is limited bus service provision across the study catchment area, particularly in rural areas, leading to forced car ownership.
- There is a perception that the cost of public transport is expensive, leading to increased car use.

TRANSPORT PROBLEM SUMMARY TABLE 3

Problem Category Ref. 3	**Public Transport Connectivity**
Transport User Problem(s)	**Long journey times using public transport from rural hinterland to access employment, key services and opportunities within Perth and Dundee and beyond**
Root Cause(s)	▪ Lack of direct public transport services ▪ Lack of rural connectivity ▪ Lack of frequent public transport services
Evidence of Route Cause(s)	▪ Analysis of Journey Time Accessibility (key points provided below – see Sections 3.5.12 & 3.5.13 for detail) ▪ Percentage of Adults Reporting that Public Transport is Convenient or Fairly Convenient[22] (as presented in Transport Problem Summary Table 2) ▪ Scottish Access to Bus Indicator 2019[23] (as presented in Transport Problem Summary Table 2) ▪ Key documents review (see Problem Categories 2 & 4 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.4 – 4.2.8 and 4.3.4 – 4.3.7 for detail)

Journey Time Accessibility

6.2.19 **Key Points:**

- In general, public transport journey times to railway stations are double, if not more than double, than car journey times.
- Station choice varies considerably, with many settlements limited to one station within a 20-minute drive.
- From the majority of settlements to the railway stations journey times are over 20 minutes by car, which could encourage car use to undertake a journey in full.

Feedback from Stakeholder Engagement

6.2.20 **Key Point** – rural connectivity is a real issue across the region, particularly in Angus and some areas of Perth and Kinross.

[22] https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fpublic-transport

[23] https://www.transport.gov.scot/publication/transport-and-travel-in-scotland-results-from-the-scottish-household-survey-1/scottish-access-to-bus-indicator-2019-weekday-score/

TRANSPORT PROBLEM SUMMARY TABLE 4

Problem Category Ref. 4	Transport Integration
Transport User Problem(s)	**For those without a direct connection, using public transport is inconvenient to access employment, key services and opportunities within Perth and Dundee and beyond**
Root Cause(s)	▪ Lack of high-quality interchanges ▪ Lack of transport integration between modes, including PT and active travel ▪ Lack of direct public transport connections ▪ Lack of public transport timetable integration ▪ Lack of integrated ticketing
Evidence of Route Cause(s)	▪ Analysis of SIMD, particularly Access to Services (key points provided below – see Section 3.4.8 for detail) ▪ Percentage of Adults Reporting that Public Transport is Convenient or Fairly Convenient[24] (as presented in Transport Problem Summary Table 2) ▪ Findings from selected Interchange Audits (transformscotland[25], 2014) are summarised below, including Dundee Seagate Bus Station, Perth Leonard Bus Station and Perth Rail Station ▪ Key documents review (see Problem Category 6 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.42 – 4.2.45,4.3.13 & 4.3.14 and 4.4.55 & 4.5.56 for detail)

Access to Services

6.2.21 **Key Point:** the SIMD analysis has shown that under all domains, Access to Services [e.g. GP surgeries, retail centres and schools] has, in most cases, worsened in the last four years. This is most notable from rural settlements such as Woodside & Burrleton (-40%) near Coupar Angus, Ferryden & Inchbraoch (-55%) in Montrose and Carnoustie (-64%).

Interchange Audits

6.2.22 Undertaken in 2014, the selected interchange audits focussed on an assessment of how easy it is to combine cycling with other forms of sustainable transport. The audit considered aspects that could make a cyclist's journey easier or more difficult, starting from the station approach, through entering, to locating parking or the appropriate boarding point. Features such as signage, suitable routes and access to facilities were included.

6.2.23 Findings from the interchange audits for Dundee Seagate Bus Station, Perth Leonard Bus Station and Perth Rail Station are summarised below.

Dundee Seagate Bus Station

6.2.24 There are no services that allow bikes on buses and therefore this station is simply a cycle-to-destination for the purposes of interchange. On all road approaches, there was only one sign at East Port roundabout that gave a clear direction to the bus station. There was no cycle-specific

[24] https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fpublic-transport

[25] https://transform.scot/what-we-do/publications/

signage. At the station itself, no bike storage facilities nor cycle information were available on-site, despite National Cycle Network (NCN) Route 1 running just outside the station.

Perth Leonard Bus Station

6.2.25 Similar to Dundee Seagate Bus Station, there are no services at Perth Leonard Bus Station that allow bikes on buses. Therefore, this station is also a cycle-to-destination for the purposes of interchange. In terms of signage to the bus station, this was found to be poor from the city centre on all routes – upon exiting the bus station, the railway station was signposted. At the station itself, no bike storage facilities were available on-site and of the people surveyed at the time, few would feel comfortable leaving their bike at the storage facilities near to the bus station due to concerns about bike theft.

Perth Rail Station

6.2.26 The main issues found at Perth Rail Station related to signage for cyclists and bike storage facilities. The main entrance that is signposted for cyclists is off York Place; however, this takes cyclists onto a platform further away from the main station facilities. In addition, the cycling parking at the York Place entrance is obscured, uncovered (which is an unattractive option for those wishing to leave their bike for any period of time), not clearly signposted and even further away from the main station facilities.

6.2.27 It is acknowledged that the Tay Cities Deal Perth Bus and Rail Interchange project aims to improve integration within the City, including appropriate parking and storage facilities to improve the travel experience in Perth. Current issues at Perth Rail Station, such as those described above, could be considered as part of this project.

Feedback from Stakeholder Engagement

6.2.28 **Key Points:**

- Public transport and active travel are perceived to be set against each other, especially in Dundee – both modes are perceived as competition rather than complementary [e.g. new cycling infrastructure takes away road space from a bus lane].
- There is a lack of direct bus services meaning it is often easier to travel by car. Furthermore, stakeholders raised that there is difficulty in travelling across local authority boundaries by bus and with added confusion due to different operators and ticket types. As a result, people choose to travel by private car as it is more convenient / easier.

Relevant feedback from STPR2 online public survey

6.2.29 **Key Points:**

- There is a lack of public transport integration, including integrated timetables across services and functional, multi-modal transport infrastructure.
- Limited integration between public transport and active travel modes, including a lack of capacity on buses and trains for bikes and wheelchairs, meaning people will choose private car rather than sustainable transport modes.

TRANSPORT PROBLEM SUMMARY TABLE 5

Problem Category Ref. 5	**Rail Station Parking Capacity**
Transport User Problem(s)	**Car users unable to park reliably / regularly at rail stations**
Root Cause(s)	▪ Constrained parking capacity at rail stations
Evidence of Route Cause(s)	▪ Findings from Rail Station Car Park surveys (key points provided below – see Section 3.5, Table 4 for detail) ▪ Key documents review (see Problem Category 7 in Table 14)

Findings from Rail Station Car Park Surveys

6.2.30 **Key Points:**

- Five of the eight railway station car parks exceeded 85% operational capacity [i.e. Perth, Broughty Ferry, Carnoustie, Arbroath and Montrose].
- Of those five stations, Broughty Ferry, Arbroath and Montrose all exceeded capacity.

TRANSPORT PROBLEM SUMMARY TABLE 6

Problem Category Ref. 6	**Park & Ride**
Transport User Problem(s)	**Car users unable to park securely and complete rest of journey by public transport**
Root Cause(s)	Barriers to existing P&R sites, including: ▪ Plentiful parking at a relatively cheap cost in Perth and Dundee ▪ Lack of Park & Ride capacity / number of sites ▪ Constrained parking capacity at rail stations
Evidence of Route Cause(s)	▪ Analysis of parking availability in Perth and Dundee (key points provided below – see Section 3.3.19 – 3.3.21 for detail) ▪ Findings from Rail Station Car Park surveys and P&R sites (key points provided below – see Section 3.5, Tables 4 & 5 for detail) ▪ Key documents review (see Problem Category 7 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.20 – 4.2.25, 4.3.16 & 4.3.17, 4.4.33 – 4.4.35, and 4.4.61 for detail)

Parking Availability in Perth and Dundee

6.2.31 **Key Point:** there is plenty supply of parking at a relatively cheap cost in both Perth and Dundee.

Findings from Rail Station Car Park Surveys

6.2.32 **Key Points:**

- Five of the eight railway station car parks exceeded 85% operational capacity [i.e. Perth, Broughty Ferry, Carnoustie, Arbroath and Montrose].
- Of those five stations, Broughty Ferry, Arbroath and Montrose all exceeded capacity.

Feedback from Stakeholder Engagement

6.2.33 **Key Points:**

- Park & Ride is currently limited within the region with many stakeholders suggesting that this is due to the relative ease at which people can drive to complete end-to-end journeys, but also highlighting that P&R has been proposed for some time but has been met with a lot of opposition.
- Some stakeholders suggested that P&R will struggle to be competitive when there is plentiful supply of parking at a relatively cheap cost in both Perth and Dundee.

Relevant feedback from STPR2 online public survey

6.2.34 **Key Point:** there is a lack of Park & Ride / Choose facilities across the region, particularly east of Perth.

TRANSPORT PROBLEM SUMMARY TABLE 7

Problem Category Ref. 7	**Journey Times by Road**
Transport User Problem(s)	**Car / Van / Commercial Vehicles and Bus journey times can be extended and variable**
Route Cause(s)	▪ Traffic delays at key locations within Dundee and Perth during peak times ▪ High car mode share ▪ High car ownership / availability outwith Dundee and Perth ▪ Limited alternative travel choices for some
Evidence of Route Cause(s)	▪ Analysis of travel-to-work method of transport (key points provided below – see Sections 3.3.14 – 3.3.18 for detail) ▪ Analysis of car availability for selected settlements (key points provided below – see Section 3.4, Table 3 for detail) ▪ Analysis of INRIX Roadway Analytics journey times presented below ▪ Key documents review (see Problem Categories 8 & 10 in Table 14) ▪ Feedback from Stakeholder Engagement (key points provided below – see Sections 4.2.9 & 4.2.10, 4.3.8 – 4.3.10, 4.4.13 & 4.4.14,and 4.4.62 – 4.4.64 for detail)

Travel-to-work method of transport

6.2.35 **Key Points:**

- Bus, Rail and Cycle mode share is very low compared to car mode share for people travelling to work on strategic routes into Perth and Dundee.
- Whilst bus mode share (up to 18%) and cycle mode share (up to 3%) are broadly similar to the national averages (10% and 3% respectively), rail mode share (1%) is lower than the national average (4%) and car mode share (ranging from 79% to 93%) is higher than the national average (62%).

Car availability for selected settlements

6.2.36 **Key Point:** households in all settlements, except Arbroath (65%) and Montrose (66%), have relatively high levels of car availability compared to Scotland as a whole (69%).

Analysis of INRIX Journey Times

6.2.37 Road network journey times along several routes throughout the study area, including routes in and around Perth and Dundee, have been extracted from INRIX data. The journey time data has been analysed to provide an understanding of journey times and the variability of journey times at different times of the day.

6.2.38 The journey times are representative of average weekdays and weekends in May 2019 between 7am and 8am (defined as the peak hour in this case) and between 9am and10am (defined as off-peak in this case). These routes are listed and shown in Figure 17.

Figure 17: Selected Journey Time Routes

Route Descriptions

- Route 1: A9, Dunkeld to Broxden Roundabout
- Route 2: A912, Inveralmond Roundabout to Perth
- Route 3: A85
- Route 4: A9(T) – M90 – A90(T)
- Route 5: M90
- Route 6: A90 – A92, Tannadice to Letham, Fife
- Route 7: A92, Dundee to Montrose

6.2.39 Analysis of Route 4 has been presented below, with outcomes clearly demonstrating the transport user problem and congested-related root cause. All other routes and analysis are available on request.

6.2.40 Route 4 starts at Aberuthven on the A9 west of Perth, along the A90(T) between Perth and Dundee and ends at Kingsway East / A92 junction.

6.2.41 In Figure 18, the average journey times for each day are shown by the small crosses in the orange boxes. The orange boxes themselves show the extent of the variability in the journey times compared with the average journey time. An orange box that is small indicates little variation in journey time, whereas an orange box that is large indicates a high level of variation in journey times. Therefore, the larger the orange box, the greater the amount of journey time variability.

6.2.42 It is clear from Figure 18 that journey times along route 4 in each direction are longer and more variable, particularly on weekdays, during the peak hour (7am-8am) when compared with the off-peak hour.

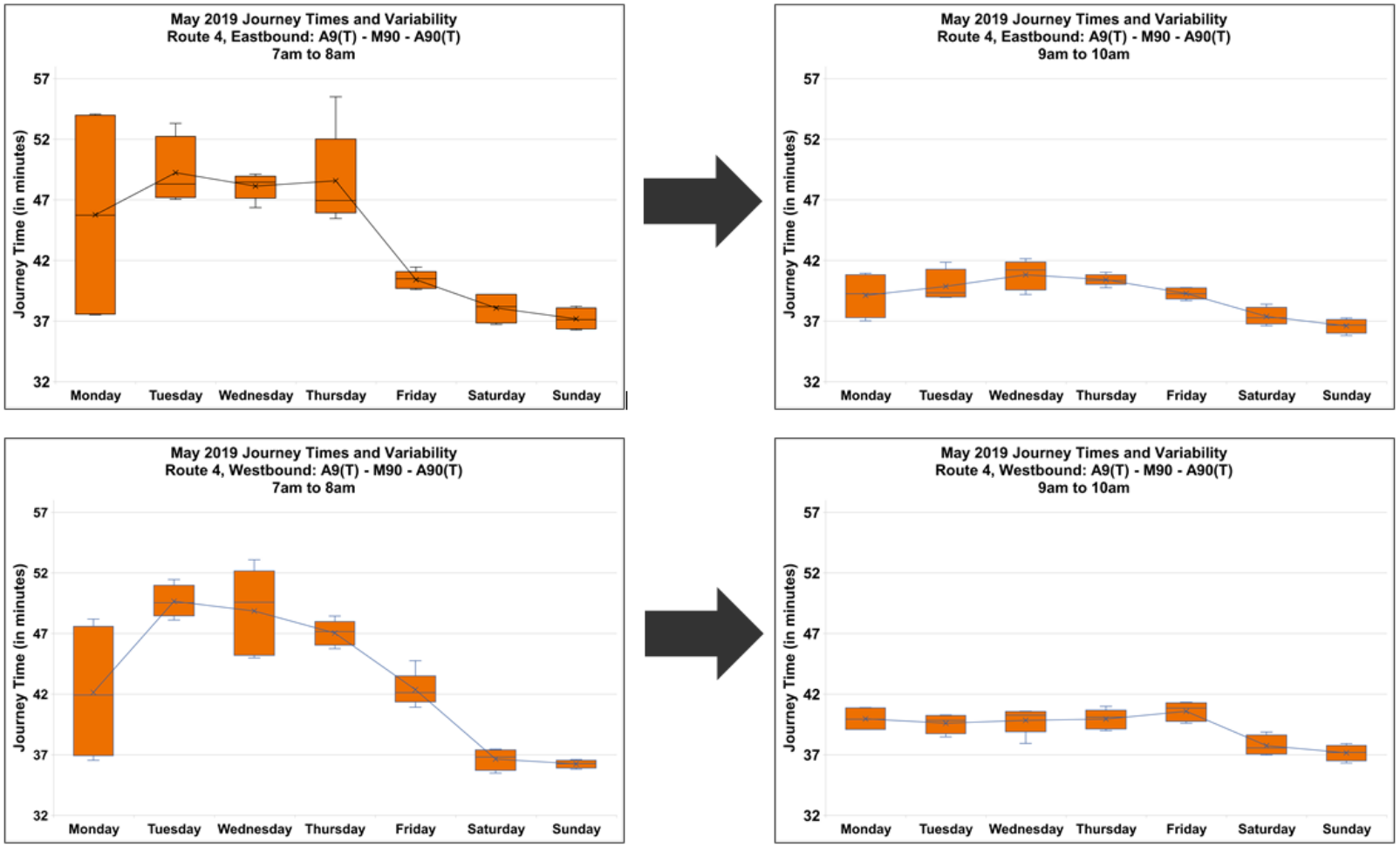


Figure 18: Average Journey Times and Variability

Feedback from Stakeholder Engagement

6.2.43 **Key Point:** Traffic volumes exceed road network capacity and cause delays at peak times, particularly in and around Perth and Dundee.

Relevant feedback from STPR2 online public survey

6.2.44 **Key Point:** High traffic volumes in the city centres, including Kingsway in Dundee, and Broxden roundabout near Perth causing traffic delay.

TRANSPORT PROBLEM SUMMARY TABLE 8

Problem Category Ref. 8	**Air Pollution**
Transport User Problem(s)	**Poor air quality has a negative effect on the public environment / urban realm**
Root Cause(s)	▪ Traffic levels and associated vehicle emissions
Evidence of Route Cause(s)	▪ High car mode share - commuting into Perth and Dundee dominated by car (key points provided below – see Sections 3.3.14 – 3.3.18 for detail) ▪ Growth in Annual Vehicle Kilometres, Traffic on all roads, by Council area (Scottish Transport Statistics, Table 5.5[26]) presented below ▪ Petrol and diesel consumption of road vehicles, by council area (Scottish Transport Statistics, Table 5.10[21]) presented below ▪ Proposed Dundee Low Emission Zone (LEZ) and Perth Air Quality Management Area (AQMA) presented below ▪ 2018 levels of NO_2 and PM_{10} pollutants from road transport[27] presented below ▪ Key documents review (see Problem Category 11 in Table 14) ▪ Relevant feedback from STPR2 online public survey (key points provided below – see Section 4.4.62 for detail)

High car commuter mode share

6.2.45 **Key Points:**

- Bus, Rail and Cycle mode share is very low compared to car mode share for people travelling to work on strategic routes into Perth and Dundee.
- Whilst bus mode share (up to 18%) and cycle mode share (up to 3%) on these strategic routes are broadly similar to the overall national averages (10% and 3% respectively), rail mode share (1%) is lower than the national average (4%) and car mode share (ranging from 79% to 93%) is higher than the national average (62%).

[26] https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/chapter-5-road-traffic/

[27] National Atmospheric Emissions Inventory, https://naei.beis.gov.uk/emissionsapp/

Growth in Annual Vehicle Kilometres

6.2.46 Growth in annual vehicle kilometres is a proxy measure for growth in general road traffic. Table 16 shows changes in annual vehicle kilometres (in millions) over time at the national level and for Angus, Dundee City and Perth & Kinross council areas.

Table 16: Annual Vehicle Kilometres (millions) by Council Area

Council Area	2013	2014	2015	2016	2017	% change 2017 vs. 2013
Angus	1,082	1,119	1,120	1,141	1,174	+9%
Dundee City	858	862	863	877	884	+3%
Perth & Kinross	2,254	2,331	2,371	2,472	2,620	+16%
Scotland	43,838	44,841	45,373	46,457	47,984	+9%

6.2.47 It is clear that the **level of annual vehicle kilometres has continued to grow over time** across each of the council areas. The largest change has occurred across Perth & Kinross (+16%), which is higher than the change seen at the national level (+9%). The smallest change in annual vehicle kilometres has occurred across Dundee City (+3%). Angus has experienced the same growth of 9% as experienced at the national level.

6.2.48 Whilst analysis of annual vehicle kilometres has provided an indication of traffic growth in each council area, analysis of changes in fuel consumption of road vehicles has also been undertaken to provide an indication of the likely impacts of road traffic on emission levels over time.

Petrol and Diesel consumption of road vehicles

6.2.49 Changes in Petrol and Diesel consumption of road vehicles (thousands of tonnes) is shown in Table 17.

6.2.50 A similar pattern to traffic growth is evident insofar as **fuel consumption has, in general, increased over time.** The only exception is across Dundee City, where no real material change has occurred. Elsewhere, Perth & Kinross has seen the largest change over time (+9%), which is higher than the change seen at the national level (5%). Angus has experienced the same growth of 5% as experienced at the national level.

Table 17: Petrol and Diesel Consumption (thousands of tonnes) of Road Vehicles by Council Area

Council Area	2013	2014	2015	2016	2017	% change 2017 vs. 2013
Angus	73	75	74	75	77	+5%
Dundee City	60	60	59	59	60	0%
Perth & Kinross	172	174	177	177	187	+9%
Scotland	3,113	3,165	3,164	3,188	3,283	+5%

Dundee LEZ and Perth AQMA

6.2.51 Dundee City amended its Air Quality Management Area (AQMA) to cover the whole of the city in 2013. Following the commitment made in the 2017 Programme for Government, Dundee City Council is currently developing its Low Emission Zone which would exclude all non-

compliant vehicles from the city centre, allowing only certain vehicles that meet stringent air quality criteria to access the LEZ. The LEZ is just one of the measures to improve air quality in the city.

6.2.52 Perth City was declared an Air Quality Management Area (AQMA) in 2006. In response to this, Perth & Kinross Council developed its Air Quality Action Plan for the designated AQMA with an overarching aim to reduce emissions (Nitrogen Oxides as NO_2) and Particulate Matter (e.g. PM_{10}, $PM_{2.5}$) within the city and thereby working towards achieving wider environmental objectives such as those set out in the Environment Act 1995.

6.2.53 2018 levels of NO_2 and PM10 pollutants from road transport across the study area are shown in Figures 19 and 20, respectively. The figures reveal that **road transport within both Perth and Dundee as well as on connecting Trunk A-roads and non-Trunk A roads produced relatively high levels of NO_2 and PM_{10} pollutant**, denoted by the light green and yellow colours on the maps. Unsurprisingly, given the lower levels of road transport in the rural hinterland, lower levels of NO_2 and PM_{10} were produced, denoted by the darker shades of purple.

Relevant feedback from STPR2 online public survey

6.2.54 **Key Point:** High traffic volumes in the city centres, including Kingsway in Dundee, causing pollution and air quality issues, and impacting the health of those in these areas.

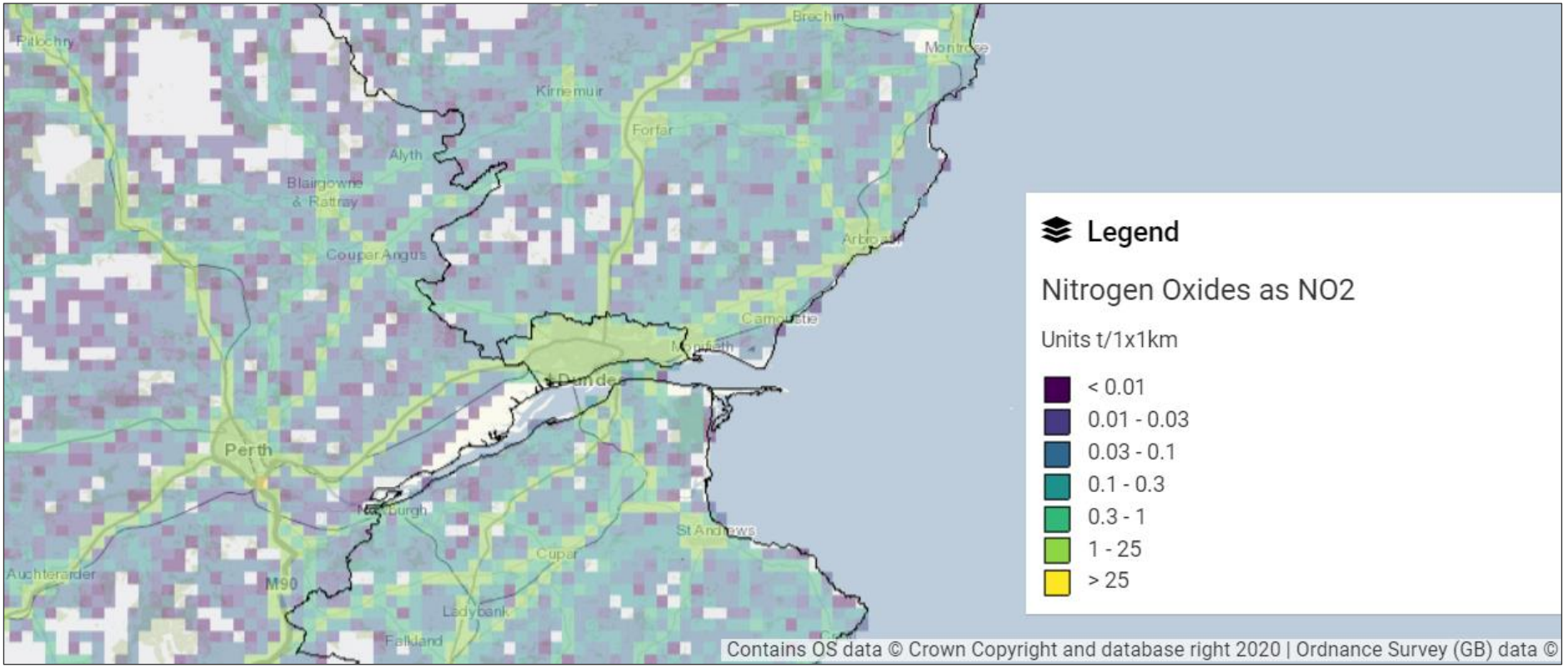


Figure 19: Levels of Nitrogen Oxides as NO_2 Pollutant from Road Transport in 2018

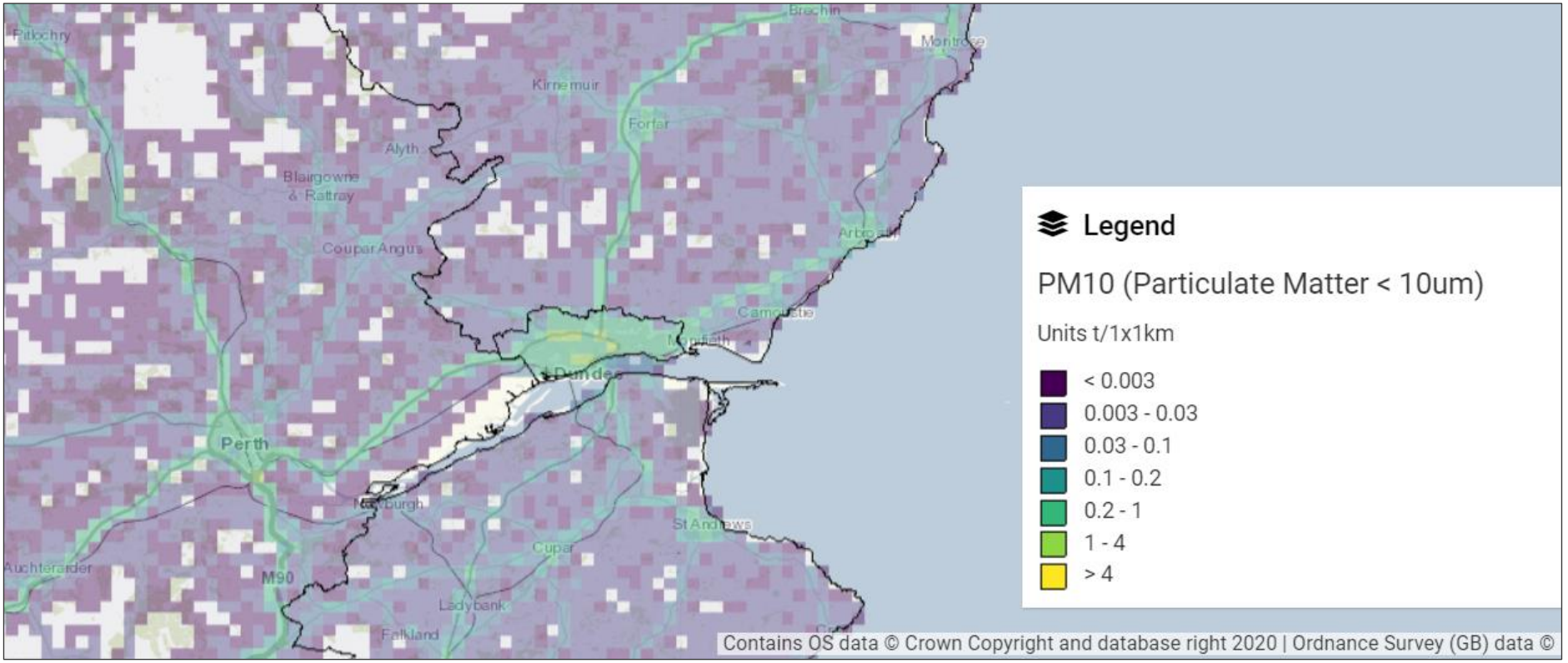


Figure 20: Levels of PM_{10} Pollutant from Road Transport in 2018

6.3 Transport Opportunities

Transport Opportunities: broadly described in STAG methodology as the chances to improve the transport and land use system to realise opportunities

6.3.1 The following transport opportunities have been identified via the stakeholder engagement exercise and key document review:

Opportunity Category	Opportunity Theme(s)
Active Travel	Sustrans Places for Everyone Fund
Accessibility & Connectivity	Improve access to public transport
	Improve sustainable connectivity
Public Transport Availability	Increase public transport choice
Public Transport Growth	Improve PT infrastructure and services
	Improvements to the bus fleet
	Capitalise on Revolution in Rail and Aberdeen to Central Belt proposals
Public Transport Infrastructure and Information	Bus Partnership Fund – Transport Scotland Improve access to travel information
Transport Integration	Improve transport integration, affording PT opportunities for first and last mile journeys
Modal Shift	Encourage sustainable transport modes

6.4 Transport Issues

Transport Issues: broadly described in STAG methodology as uncertainties that the study may not be in a position to resolve, but must work within the context of

6.4.1 The following issues have been identified:

- There are potentially wide ranging and longer-term structural changes and impacts caused by the COVID-19 pandemic, many of which could impact on the demand for travel across all modes.
- Due to the impact of COVID-19, there is considerable uncertainty around the timing of when the proposed Dundee Low Emission Zone (LEZ) will be implemented. In turn, this will affect the timing of delivering proposed alternative options for those affected by the LEZ. However, the Programme for Government 2020 (published September 2020) commits to delivering the Dundee LEZ between February and May 2022.
- The Programme for Government 2020 committed to long-term capital investment of over £500m via the Bus Partnership Fund for bus priority measures to tackle the negative impacts of traffic volumes / delays on bus services. The Tayside Bus Alliance comprising Tay Cities local authority areas and its bus operators applied for Bus Partnership funding in April 2021. Therefore, it will be important to review any proposals for bus service improvements that could affect the study area to understand any impacts on the options recommended for further appraisal work.

- Several ongoing studies, including the Tay South Park & Ride Study, Newburgh Transport Appraisal, St Andrews Transport Appraisal and Bridge of Earn / South Perth Transport Appraisal, could influence the future performance of the transport network across the study area.
- Options being recommended or rejected as part of the STPR2 Initial Appraisal Case for Change covering the Tay Cities Region were published in February 2021. A cross-check of the STPR2 options will be undertaken and consideration will be given as to how those may affect the recommended options for the Preliminary Options Appraisal stage of this study.

6.5 Transport Constraints

Transport Constraints: broadly described in STAG methodology as the bounds within which a study is being undertaken

6.5.1 The following constraints have been identified:

Physical Constraints

- Land within Dundee and Perth boundaries is generally designated as protected green space or is already allocated to housing or economic development.
- The hinterland within the study area is rural and its settlements are sparsely located. This sparse topography can constrain: the ability to travel; the delivery of sustainable transport effectively; and implementing potential infrastructure interventions due to higher delivery costs and environmental concerns.

Environmental Constraints

- The potential environmental impacts when considering any new road, rail or public transport infrastructure.
- Proximity of transport corridor to environmental designations such as Sites of Special Scientific Interest (SSSI), Ramsar sites and Special Areas of Conservation, particularly along the Firth of Tay.

Collaboration and Cooperation

- Multiple bodies will be required to participate and take options forward, including Transport Scotland, Tactran, sustrans, Public Transport operators, ScotRail and Network Rail.

7 Objective Setting

7.1 Introduction

7.1.1 This chapter sets out the TPOs for the study that have been developed to reflect the evidence gathered on problems and opportunities considered and analysed in the previous chapters.

7.1.2 It is recognised in STAG that TPOs may not be fully SMART at the Initial Appraisal: Case for Change stage of the appraisal process. However, it is considered helpful to 'stress test' the TPOs at this early stage to avoid difficulties later in the appraisal process and, as such, the TPOs have been developed with SMART principles in mind, such that they will be:

- **Specific** – it will say in precise terms what is sought.
- **Measurable** – there will exist means to establish to stakeholders' satisfaction whether or not the objective has been achieved.
- **Attainable** – there is general agreement that the objective set can be reached.
- **Relevant** – the objective is a sensible indicator or proxy for the change which is sought.
- **Timely** – the objective will be associated with an agreed future point by which it will have been met.

7.2 Approach

7.2.1 The process for developing and 'stress-testing' the objectives was undertaken using a five-staged approach and is described in more detail below.

STEP 1: IDENTIFYING PROBLEMS AND OPPORTUNITIES

7.2.2 A fundamental part of STAG is the identification of problems (both actual and perceived) and opportunities within the existing transport system.

7.2.3 Problems and opportunities have been identified through two key tasks:

1) Problems and Opportunities identified through data analysis, stakeholder engagement and from a review of key documents.
2) Discussions with the Project Steering Group.

7.2.4 A total of **104 individual problems** and **159 individual opportunities** have been identified.

7.2.5 As highlighted in Chapter 6, many of the opportunities identified via the stakeholder engagement exercise and documents review have been deemed to be transport options. Therefore, these 'opportunities' have informed the Option Generation, Sifting and Development phase, discussed in Chapter 8.

STEP 2: DERIVE AND CATEGORISE SPECIFIC TRANSPORT SUPPLY PROBLEM THEMES

7.2.6 A review of the individual problems was undertaken which highlighted many that were very similar and, as such, were grouped into broad categories and then more specific themes for ease of assessment.

7.2.7 A total of **eight problem categories** and **20 problem themes** have been identified – these are shown in the first and third columns in Table 18. The problem themes reflect the identified transport supply problems and are, in effect, the root causes of the transport user problems as derived in Step 3.

7.2.8 **STEP 3: DERIVE TRANSPORT USER PROBLEM**

7.2.9 A series of implied transport problems as experienced by the users of the transport system have been derived based on the identified transport supply problem themes (Step 2). The implied transport user problems are shown in the second column in Table 18.

7.3 Transport Planning Objectives

STEP 4: DEVELOP TPOs

7.3.1 In line with STAG, the TPOs need to express the outcomes sought for the study and describe how the identified problems and root causes will be alleviated – this is what ultimately will need to be addressed. The TPOs should also reflect the opportunities to be grasped, whilst avoiding indications of potential solutions/options at this stage.

7.3.2 Based on the outputs from Steps 1, 2 and 3 above, **six TPOs** have been derived as shown in the final column of Table 18. The TPOs have been appropriately framed such that they can be "SMARTened" as the potential multi-modal transport options are refined and developed.

7.3.3 The TPOs for the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor Study are shown in Table 18. It should be noted that no weighting is applied to any of the TPOs. The numbering system is for presentation and reference purposes only.

Table 18: Transport Planning Objectives (TPOs)

Problem Category	Transport User Problem(s)	Cause of Transport User Problem – supply side	Opportunity	Transport Planning Objective
Active Travel	Walking and cycling in Perth and Dundee, and in some rural areas, can feel unsafe and be inconvenient for some	• Motorised traffic levels and speeds • Lack of high-quality, safe walking and cycling routes	• Places for Everyone Fund (sustrans) • Encourage sustainable transport modes	**TPO 1: Create a safer and more convenient environment that facilitates active travel**
Public Transport Accessibility	Access to public transport can be difficult for some	• Limited access to public transport service provision • Lack of travel information •	• Improve access to public transport • Improve PT infrastructure and services • Improve access to travel information • Encourage sustainable transport modes	**TPO 2: Address perceived and actual barriers to the use of Public Transport along the transport corridor**
Public Transport Connectivity	Long journey times using public transport from rural hinterland to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of direct public transport services • Lack of rural connectivity • Lack of frequent public transport services	• Improve sustainable connectivity • Increase PT choice • Improve PT infrastructure and services • Capitalise on RinR and Aberdeen to Central Belt rail proposals • Encourage sustainable transport modes	**TPO 3: Improve public transport connectivity to employment, key services, and opportunities within Perth and Dundee and beyond**

Problem Category	Transport User Problem(s)	Cause of Transport User Problem – supply side	Opportunity	Transport Planning Objective
Transport Integration	For those without a direct connection, using public transport is inconvenient to access employment, key services and opportunities within Perth and Dundee and beyond	• Lack of high-quality interchanges • Lack of transport integration between modes, including PT and active travel • Lack of direct public transport connections • Lack of public transport timetable integration • Lack of integrated ticketing	• Improve transport integration, affording PT opportunities for first and last mile • Improve PT infrastructure and services • Capitalise on RinR and Aberdeen to Central Belt rail proposals • Encourage sustainable transport modes	**TPO 4: Improve integration with and between sustainable transport modes**
Rail Station Parking Capacity	Car users unable to park reliably / regularly at rail stations	• Constrained parking capacity at rail stations	• Improve PT infrastructure and services	
Park & Ride	Car users unable to park securely and complete rest of journey by public transport	Barriers to existing P&R sites, including: • Plentiful parking at a relatively cheap cost in Perth and Dundee • Lack of Park & Ride capacity / number of sites • Constrained parking capacity at rail stations	• Improve PT infrastructure and services	
Journey Times by Road	Car / Van / Commercial Vehicles and Bus journey times can be extended and variable	• Traffic delays at key locations within Dundee and Perth during peak times • High car mode share • High car ownership / availability outwith Dundee and Perth • Limited alternative travel choices for some	-	**TPO 5: Reduce journey times and improve reliability for road traffic**

Problem Category	Transport User Problem(s)	Cause of Transport User Problem – supply side	Opportunity	Transport Planning Objective
Air Pollution	Poor air quality has a negative effect on the public environment / urban realm	• Traffic levels and associated vehicle emissions	-	**TPO 6: Reduce vehicle emissions in Perth and Dundee**

STEP 5: STRESS-TEST TPOs

This final step, shown in Table 19, provides an early indication of how the TPOs could be made SMART during the next stages of the appraisal process. Further development and refinement of the SMARTening process will be undertaken at this time.

Table 19: SMARTening the Transport Planning Objectives

		SMARTening the Transport Planning Objectives				
Problem Category	**TPO**	**Specific**	**Measurable**	**Attainable**	**Relevant**	**Timely**
Active Travel	**TPO 1:** Create a safer and more convenient environment that facilitates active travel	Specifically linked to active travel	• Active travel audits • Attitudinal surveys • STATS19 accident database	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later
Public Transport Accessibility	**TPO 2:** Address perceived and actual barriers to the use of Public Transport along the transport corridor	Specifically linked to public transport accessibility barriers	• TRACC accessibility analysis • Attitudinal surveys	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later

		SMARTening the Transport Planning Objectives				
Problem Category	**TPO**	**Specific**	**Measurable**	**Attainable**	**Relevant**	**Timely**
Public Transport Connectivity	**TPO 3:** Improve public transport connectivity to employment, key services, and opportunities within Perth and Dundee and beyond	Specifically linked to public transport connectivity and connections to the job market, key services and opportunities	• TRACC accessibility analysis • Social and Distributional Impacts Assessment	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later
Transport Integration **Rail Station Parking Capacity** **Park & Ride**	**TPO 4:** Improve integration with and between sustainable transport modes	Specifically linked to sustainable modes of travel	• TRACC accessibility analysis • Timetable analysis • Surveys at key bus and rail interchanges, including P&R	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later
Journey Times by Road	**TPO 5:** Reduce journey times and improve reliability for road traffic	Specifically linked to journey times and journey time reliability for road traffic	• INRIX Roadway Analytics	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later
Air Pollution	**TPO 6:** Reduce vehicle emissions in Perth and Dundee	Specifically linked to vehicle emissions in city centres	• Attitudinal surveys • Air quality monitoring	Potential barriers / difficulties in achieving this objective will be thoroughly explored later in the appraisal process	Linked to evidenced problems and root causes, and expected to align well with wider policy context	No timeframes added at this stage but could be added later

8 Option Generation, Sifting and Development

8.1 Introduction

8.1.1 This chapter sets out details of the option generation, sifting and development process, including rationale for option selection at this stage of the appraisal process. The overall aim is to identify a set of transport options that could potentially deliver the TPOs and, consequently, address the evidenced problems and help realise the opportunities.

8.1.2 STPR2 has recently published its recommended long list of options at the Initial Appraisal: Case for Change stage. Whilst STPR2 takes a national overview of the transport network, it also has a focus on the regions, including Tay Cities. Therefore, going forward to the next stage of this study, a cross-check of the options being selected or rejected as part of STPR2 will be undertaken and consideration will be given as to how those may affect the recommended options for the Preliminary Options Appraisal stage of this study.

8.2 Do-Minimum Scenario

8.2.1 STAG requires the development of a Do-Minimum scenario and this forms a natural part of the option development process. This scenario includes no change to the provision of transport services other than those set out in existing commitments. It represents the scenario if no other options are taken forward and will form the benchmark against which the additional benefits and costs [i.e. value for money of the impacts associated with each option] can be measured.

8.2.2 A list of committed Road and Public Transport schemes within the study area and included in the TCRTM is shown in Table 20.

Table 20: Do-Minimum Schemes

Do-Minimum Infrastructure	2022	2027
ROAD		
Perth & Kinross		
A9/A85 Junction Improvements	✓	
Bertha Park Link Road		✓
Cross Tay Link Road (CTLR)		✓
Dundee		
Swallow Roundabout	✓	
Dundee City Low Emission Zone		✓
Angus		
Westway	✓	
RAIL (service changes)		
Dunblane-Perth/Glasgow	✓	
Aberdeen - Glasgow	✓	
Edinburgh - Aberdeen	✓	
Inverness – Glasgow via Perth	✓	
Inverness – Edinburgh via Perth	✓	
Edinburgh - Arbroath	✓	

8.2.3 The Do-Minimum scenario, including transport interventions and land use planning inputs, will be confirmed and agreed during the next stages of the STAG process.

8.3 Option Generation

Option Generation – identifying an initial long list of transport options which are not unreasonably constrained at this stage of the appraisal process

8.3.1 The option generation process was undertaken using a two-staged approach and has been informed by:

- The TPOs set for this study.
- Consideration of previous transport studies and relevant transport plans and strategies.
- Project Team and Steering Group workshops.
- Suggestions from stakeholders.

STAGE 1 – GENERATE LONG LIST OF OPTIONS

8.3.2 This initial stage involved collating all multi-modal options from the above list of sources which could potentially address the identified transport problems and deliver against the TPOs. In line with STAG methodology, this stage has not been unreasonably constrained. This has helped to generate a wide range of multi-modal options, including new options and existing options which have been proposed for some time. A total of **130 options** was generated at this stage.

STAGE 2 – CLEAN AND REFINE LONG LIST OF OPTIONS

8.3.3 This second stage involved 'cleaning' and refining the long list, including removing duplicates and consolidating similar options. **56 options** remained at this stage.

8.4 Option Sifting

Option Sifting – sifting out of options from the initial long list to retain a reasonable number of multi-modal transport options for development

8.4.1 The initial sifting out of options approach sought to reject options that:

a. Are unlikely to contribute sufficiently (by considering the relative size and scale of impacts) to meeting the TPOs.

b. Are in progress elsewhere – that is the option is being investigated, for example, by partner organisations.

c. Are not strictly deemed to be transport options.

d. Are considered outside the scope of this study – that is options are more appropriate to be considered elsewhere.

8.4.2 It was recognised that, in some cases, there is limited quantifiable information available and therefore the approach also sought to avoid rejecting any options too early without the necessary supporting evidence to do so.

8.4.3 Following this initial sifting exercise, a total of **ten multi-modal options** remained and are worthy of further consideration. These options are described below, including rationale for selection at this stage. Rationale for rejecting options at this stage is provided in Section 8.7.

8.5 Option Development

Option Development – developing a reasonable number of broadly defined multi-modal options which could be subjected to further appraisal

8.5.1 The list of recommended multi-modal options for Preliminary Options Appraisal, including rationale for selection at this stage is shown in Table 21.

8.5.2 It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options – the numbering system is used for presentation and reference purposes only. It should also be noted that options may not be in all cases mutually exclusive and could be packaged together to help meet the TPOs and address the evidenced transport problems. This will be considered further as part of the Preliminary Options Appraisal.

Table 21: Recommended Multi-Modal Transport Options for Preliminary Options Appraisal

Option Ref.	Type	Description	Rationale for Selection
1	Active Travel	Increase active travel links to nearest Public Transport Hub from hinterland settlements and to Perth and Dundee, including enhanced provision around key services and public transport interchanges.	Option 1 would contribute to the objectives "to create a safer and more convenient environment that facilitates active travel" and "improve integration with and between sustainable transport modes." At a national level, this option is anticipated to align well with the sustainable transport hierarchy set out in NTS2. This option would encourage mode shift from car to walking and/or cycling and, in turn, have a positive impact on physical and mental health through increased levels of physical activity.
2	Bus	Improve direct bus services from hinterland settlements to Perth and Dundee, and rail stations along transport corridor.	Option 2 would contribute to some TPOs, namely TPO 2, 3 and 4, and would provide direct bus links from settlements with poor access to bus, including Errol, Letham, Liff, Birkhill and Muirhead, and Friockheim. This option would reduce journey times by bus, offer a more competitive alternative to private car use and improve access to employment and key services.
3	Demand Responsive Transport	Increase DRT public transport to serve hinterland settlements.	Option 3 would contribute to many TPOs and would provide increased coverage of DRT across the region, particular the rural hinterland, building on existing services in Angus and Perth & Kinross.
4	Park & Ride / Choose	Implement new Park & Ride / Choose sites for all modes at key locations around Perth and Dundee, including associated bus priority measures, and at key strategic regional locations.	Option 4 would increase Park & Ride / Choose capacity across the region, particularly on the A90(T) between Perth and Dundee, and north of Dundee; on the A9(T) - North and South of Perth; and on A92 east of Dundee. This option would also consider more regionally located sites, not just sites on the periphery of Perth and Dundee. In doing so, this option would contribute to many TPOs. It would also offer a more competitive alternative to the car and encourage a shift in mode from car to public transport.

Option Ref.	Type	Description	Rationale for Selection
5	Integration	Improve existing bus-to-bus and bus-to-rail interchanges along the transport corridor.	Option 5 would contribute to most TPOs. It would also promote equality by improving access to employment, key services and other opportunities as well as increase the awareness and provision of accessible public transport information such as real time and on-journey information. It is anticipated that this option would score positively against STAG criteria, particularly Integration and Accessibility & Social Inclusion.
6	Rail	New rail station north of Perth at Luncarty on the Highland Main Line, including construction of a Park & Ride / Choose site.	Option 6 would contribute to many TPOs by building a new rail station north of Perth and associated Park & Ride / Choose site. It is anticipated that this option would score positively against STAG criteria, particularly Integration, Accessibility & Social Inclusion and Economy. The feasibility of potential service calling patterns would be considered further in Detailed Options Appraisal if this option is taken forward.
7	Rail	Relocate Invergowrie rail station to Dundee West, including construction of bus-to-rail interchange.	Option 7 would contribute to many TPOs by relocating Invergowrie rail station to the north of Riverside Avenue (Dundee West) and constructing a new bus-to-rail interchange facility. It is anticipated that this option would score positively against STAG criteria, particularly Integration, Accessibility & Social Inclusion and Economy. The feasibility of potential service calling patterns would be considered further in Detailed Options Appraisal if this option is taken forward.

Option Ref.	Type	Description	Rationale for Selection
8	Rail	New rail station between Perth and Dundee at Errol, St Madoes or Walnut Grove, including construction of bus-to-rail interchange.	Option 8 would contribute to many TPOs by building a new rail station at Errol, St Madoes or Walnut Grove, and constructing a bus-to-rail interchange. It is anticipated that this option would score positively against STAG criteria, particularly Integration, Accessibility & Social Inclusion and Economy. The feasibility of potential service calling patterns would be considered further in Detailed Options Appraisal if this option is taken forward.
9	Rail	Increase the number of calls and upgrade station facilities at existing, underused, rail stations at Balmossie, Barry Links and Golf Street.	Option 9 would contribute to many TPOs by increasing the number of calls at underused Balmossie, Barry Links and Golf Street rail stations. This option would capitalise on the Revolution in Rail (RinR) and Aberdeen to Central Belt proposals. It is anticipated that this option would score positively against STAG criteria, particularly Integration, Accessibility & Social Inclusion and Economy. The feasibility of potential service calling patterns would be considered further in Detailed Options Appraisal if this option is taken forward.
10	Rail	Increase rail station car parking capacity at intermediate stations along the transport corridor (outwith Perth and Dundee).	Option 10 would contribute to some TPOs, particularly “improve integration with and between sustainable transport modes” by increasing car parking capacity at rail stations outside of Dundee and Perth, including Montrose, Arbroath and Carnoustie. This option could have a positive impact on Environment and Integration STAG criteria by reducing the number of longer distance journeys currently made by car and encouraging greater use of rail.

8.6 Mapping Options to Transport Planning Objectives

8.6.1 An initial high-level appraisal of the options against the TPOs has been undertaken and this is set out in Table 22. It demonstrates which TPOs the options are expected to meet (denoted by ✓) but without any indication of the anticipated level of impact. Recognising that the options will be further developed and refined at Preliminary Options Appraisal stage, the relative size or scale of impacts (benefits / disbenefits), in qualitative terms, will be considered then.

8.6.2 For clarity in the table below, the TPO descriptions are listed here for ease of reference.

- **TPO 1:** Create a safer and more convenient environment that facilitates active travel.
- **TPO 2:** Address perceived and actual barriers to the use of Public Transport along the transport corridor.
- **TPO 3:** Improve public transport connectivity to employment, key services, and opportunities within Perth and Dundee and beyond.
- **TPO 4:** Improve integration with and between sustainable transport modes.
- **TPO 5:** Reduce journey times and improve reliability for road traffic.
- **TPO 6:** Reduce vehicle emissions in Perth and Dundee.

8.6.3 It is clear that the active travel option (option ref. 1) is only expected to meet a limited number of objectives. This option may perform more effectively if packaged with another option or options. Packaging of options will also be considered as part of the Preliminary Options Appraisal.

Table 22: Mapping of Recommended Options to Transport Planning Objectives (no indication of anticipated level of impact provided at this stage)

Option Ref.	Type	Description	TPO 1	TPO 2	TPO 3	TPO 4	TPO 5	TPO 6
1	Active Travel	Increase active travel links from hinterland settlements to nearest rail station and to Perth and Dundee, including enhanced provision around key services and public transport interchanges.	✓			✓		
2	Bus	Improve direct bus services from hinterland settlements to Perth and Dundee, and rail stations along transport corridor.		✓	✓	✓		
3	Demand Responsive Transport	Increase DRT public transport to serve hinterland settlements.		✓	✓	✓	✓	✓
4	Park & Ride / Choose	Implement new Park & Ride / Choose sites for all modes at key locations around Perth and Dundee, including associated bus priority measures, and at key strategic regional locations.	✓	✓	✓	✓	✓	✓
5	Integration	Improve existing bus-to-bus and bus-to-rail interchanges along the transport corridor.	✓	✓	✓	✓	✓	✓
6	Rail	New rail station north of Perth at Luncarty on the Highland Main Line, including construction of a Park & Ride / Choose site.		✓	✓	✓	✓	✓
7	Rail	Relocate Invergowrie rail station to Dundee West, including construction of bus-to-rail interchange.		✓	✓	✓	✓	✓
8	Rail	New rail station between Perth and Dundee at Errol, St Madoes or Walnut Grove		✓	✓	✓	✓	✓
9	Rail	Increase the number of calls and upgrade station facilities at existing, underused, rail stations at Balmossie, Barry Links and Golf Street		✓	✓	✓	✓	✓
10	Rail	Increase rail station car parking capacity at intermediate stations along the transport corridor (outwith Perth and Dundee).		✓	✓	✓	✓	✓

8.7 Rejected Multi-Modal Transport Options

8.7.1 A summary of the rationale for sifting out options at this stage of the study is provided in Tables 23 to 26. Whilst many options have been rejected at this stage, some are considered complementary to the recommended options for further appraisal. These options could deliver further potential benefits, if delivered by other means, and could be considered during the next stage of the appraisal when packaging of options, if appropriate.

Table 23: Options unlikely to contribute sufficiently to meeting the TPOs

Option Ref.	Type	Description	Is Option complementary?
11	Bus	A shuttle service from Brechin Castle Garden Centre into town	Not considered complementary
12	Rail	New travel centre at Perth Rail station	Yes, considered complementary to Option 5. This option could be considered further through the Tay Cities Deal Perth Bus and Rail Interchange project
13	Road	Road layout and junction improvements at Albert Street / Pitkerro Road in Dundee	Yes, considered complementary to Options 2 and 4. The form of this option could include bus priority measures
14	Road	Upgrade A930 Carlogie Road	Yes, considered complementary to Options 2 and 4. The form of this option could include bus priority measures
15	Road	Road layout and junction improvements at A9 / A85 Crieff Road Junction	Yes, considered complementary to Options 2 and 4. The form of this option could include bus priority measures

Table 24: Options in progress elsewhere

Option Ref.	Type	Description	In progress
16	Active Travel	Develop a low carbon strategy, including active travel hubs, for the Tay Cities Region	▪ Tay Cities Deal through its Low Carbon Transport project ▪ Tactran Regional Electric Vehicle (EV) Strategy
17	Active Travel	Roll out of bike hire schemes in Dundee and Perth, and across the region	▪ Via schemes such as Bike & Go in Perth and Dundee
18	Bus	Expand the ABC ticketing scheme region-wide	▪ Via commercial bus operators, including Stagecoach East Scotland and National Express, and supported by the region authorities

Option Ref.	Type	Description	In progress
19	Park & Ride / Choose	Implement new Park & Ride / Choose site south of Dundee on A92(T)	▪ Via Tay South Park & Ride Site Project
20	Integration	Integrate bus and rail timetables	▪ Via Transport Scotland's Smart Ticketing Delivery Strategy ▪ Via proposed clockface rail timetable as part of Revolution in Rail (RinR) proposals
21	Integration	Integrated ticketing	▪ Via Transport Scotland's Smart Ticketing Delivery Strategy ▪ Via proposed clockface rail timetable as part of Revolution in Rail (RinR) proposals
22	Integration	Smart, integrated ticketing systems	▪ Via Transport Scotland's Smart Ticketing Delivery Strategy ▪ Via proposed clockface rail timetable as part of Revolution in Rail (RinR) proposals
23	Integration	Provide an integrated bus and rail interchange, better parking, improved passenger experience and enhanced visitor arrival in Perth city centre that complements investment at Dundee rail station	▪ Via Tay Cities Deal through its Perth Bus and Rail Interchange project
24	Rail	New rail station at Bridge of Earn	▪ Via the LRDF funded Bridge of Earn Transport Appraisal
25	Rail	Increase rail capacity and implement new rail timetable along transport corridor	▪ Via Revolution in Rail (RinR) proposals.
26	Road	Increase use of electric vehicles in the region	▪ Via Transport Scotland's Smart Ticketing Delivery Strategy ▪ Via recent initiatives, including Tactran's Regional Electric Vehicle Strategy
27	Road	Cross Tay Link Road connecting A9 to the A93 and A94 requiring construction of new bridge across River Tay in Perth	▪ Via Perth Transport Futures Project, Phase 2, and Tay Cities Deal
28	Road	Introduce measures to reduce traffic volumes / delays and improve air quality	▪ Captured by recommended options for Preliminary Options Appraisal
29	Soft Measures	Invest in low carbon technologies	▪ Via Tay Cities Deal through its various low carbon projects ▪ Via Tactran Regional EV Strategy

Option Ref.	Type	Description	In progress
30	Soft Measures	MaaS pilot project	▪ Via recent initiatives, including Tactran Maas and Dundee City Council Maas projects

Table 25: Options not deemed strictly a transport option

Option Ref.	Type	Description
31	Integration	Increase collaboration between councils and partnership organisations
32	Integration	Instant ticketing/internet information should be available as a one-stop shop
33	Parking	No increase in city centre parking availability (considered as part of a Do-Nothing scenario)
34	Soft Measures	Technology for mobile phone services in the Tactran area could be improved to provide teleservices for ticketing and 'real time' transport information
35	Soft Measures	Maintain current Public Transport Guides and section on the PKC website

Table 26: Options that are outside the scope of this study

Option Ref.	Type	Description	Is Option complementary?
36	Bus	Implement bus franchising across the region	Yes, considered complementary to Options 2 and 3
37	Bus	Increase support and funding for Community Transport	Yes, considered complementary to Options 2 and 3
38	Bus	Introduce a new bus fares structure	Yes, considered complementary to Options 2 and 3
39	Freight	Develop rail freight terminals in Montrose, Dundee and Perth	Not considered complementary
40	Freight	Implement and enforce a freight route signage strategy	Not considered complementary. However, this option could be considered further by Tactran and the region authorities
41	Freight	Intermodal rail freight transfer facilities at the Port of Dundee	Not considered complementary
42	Freight	Support the implementation of a more efficient and environmentally friendly urban logistics service	Not considered complementary. However, this option is included within the Dundee LDP 2 and could be investigated further by Dundee City Council
43	Integration	Integrated ticketing to include Park & Ride ticket offer	Yes, considered complementary to Option 4, and could be included in an update to Transport Scotland's Smart Ticketing Delivery Strategy

Option Ref.	Type	Description	Is Option complementary?
44	Parking	Implement a revised city centre parking and pricing policy in Perth and Dundee	Yes, considered complementary to Option 4. This option could be considered further by Perth & Kinross Council and Dundee City Council through potential demand management measures contained in the Local Transport Strategy
45	Parking	Roll-out of residents parking zones	Yes, considered complementary to Option 4. This option could be considered further by Perth & Kinross Council and Dundee City Council as part of potential demand management measures contained in the Local Transport Strategy
46	Rail	Reduction in rail fares from Fife stations	More appropriate to be considered in the context of Scottish Government's wider approach to fare setting
47	Road	Construction of bypass from A90 south of Dundee to A92	A strategic option which may be considered further in the second Strategic Transport Projects Review (STPR2)
48	Road	New Road Infrastructure Provision - Dundee Northern Relief Road	As above
49	Road	Improve existing roadside facilities on A90(T), including overnight parking for HGVs, at Brechin Castle Centre, Orchardbank Business Park or Stracathro Services	Not considered complementary. However, this option could be considered further by Angus Council through its the Local Transport Strategy
50	Soft Measures	Investment in renewable energy sources for vehicles	Yes, considered complementary to Options 2 and 3
51	Soft Measures	Sustainable travel reward schemes	Yes, complementary to all options
52	Soft Measures	Invest in smart mobility to ensure the most effective and efficient use of the transport network	Yes, considered complementary to Options 2 to 4
53	Soft Measures	Introduce smart-light technology at congested junctions to facilitate movement of traffic, especially buses	Yes, considered complementary to Options 2 and 3. This option could be considered further by Perth & Kinross Council and Dundee City Council
54	Soft Measures	Develop promotional marketing campaign for new transport facilities	Yes, considered complementary to Options 4 to 8 inclusive

Option Ref.	Type	Description	Is Option complementary?
55	Soft Measures	Develop Green Travel Plans for large businesses or institutions in Perth and Dundee	Yes, considered complementary to Option 1. This option could be considered further by both Perth & Kinross Council and Dundee City Council through its Air Quality Action Plans. Travelknowhow Scotland website and toolkit facility currently exists and is promoted
56	Soft Measures	Support the Council's emerging Travel Plan particularly in respect of journeys to and from work and during office time	Yes, considered complementary to Option 1

9 Recommendations and Next Steps

9.1 Introduction

9.1.1 This Initial Appraisal: Case for Change report has set the context for the appraisal of multi-modal transport options for the Tay Cities Park & Choose Strategy: Opportunities along the Perth-Montrose Transport Corridor.

9.1.2 In line with STAG methodology, it has identified the key transport problems, opportunities, issues and constraints within the study area, which have formed the basis for objective setting and the generation of a wide range of options to be appraised. The options recommended for Preliminary Options Appraisal are listed in Table 27.

9.2 Multi-Modal Transport Options for Preliminary Options Appraisal

9.2.1 It should be noted that the STAG process does not prioritise between options and therefore no weighting or hierarchy is applied to any of the options. The numbering system is used for presentation and reference purposes only.

Table 27: Recommended Multi-modal Transport Options for Preliminary Options Appraisal

Option Ref.	Type	Description
1	Active Travel	Increase active travel links to nearest Public Transport Hub from hinterland settlements and to Perth and Dundee, including enhanced provision around key services and public transport interchanges
2	Bus	Improve direct bus services from hinterland settlements to Perth and Dundee, and rail stations along transport corridor
3	Demand Responsive Transport	Increase DRT public transport to serve hinterland settlements
4	Park & Ride / Choose	Implement new Park & Ride / Choose sites for all modes at key locations around Perth and Dundee, including associated bus priority measures, and at key strategic regional locations
5	Integration	Improve existing bus-to-bus and bus-to-rail interchanges along the transport corridor
6	Rail	New rail station north of Perth at Luncarty on the Highland Main Line, including construction of a Park & Ride / Choose site
7	Rail	Relocate Invergowrie rail station to Dundee West, including construction of bus-to-rail interchange
8	Rail	New rail station between Perth and Dundee at Errol, St Madoes or Walnut Grove, including construction of bus-to-rail interchange
9	Rail	Increase the number of calls and upgrade station facilities at existing, underused, rail stations at Balmossie, Barry Links and Golf Street
10	Rail	Increase rail station car parking capacity at intermediate stations along the transport corridor (outwith Perth and Dundee)

9.3 Preliminary Options Appraisal

9.3.1 The purpose of the Preliminary Options Appraisal will be to undertake an initial, qualitative appraisal of the recommended options taken forward from the Initial Appraisal: Case for Change stage. This will include an assessment of:

- The likely impacts of the options against the TPOs.
- The likely impacts of the options against STAG criteria [i.e. Environment, Safety, Economy, Integration, and Accessibility and Social Inclusion].
- The alignment of options with established policy directives.
- Feasibility, affordability and public acceptability of the options.

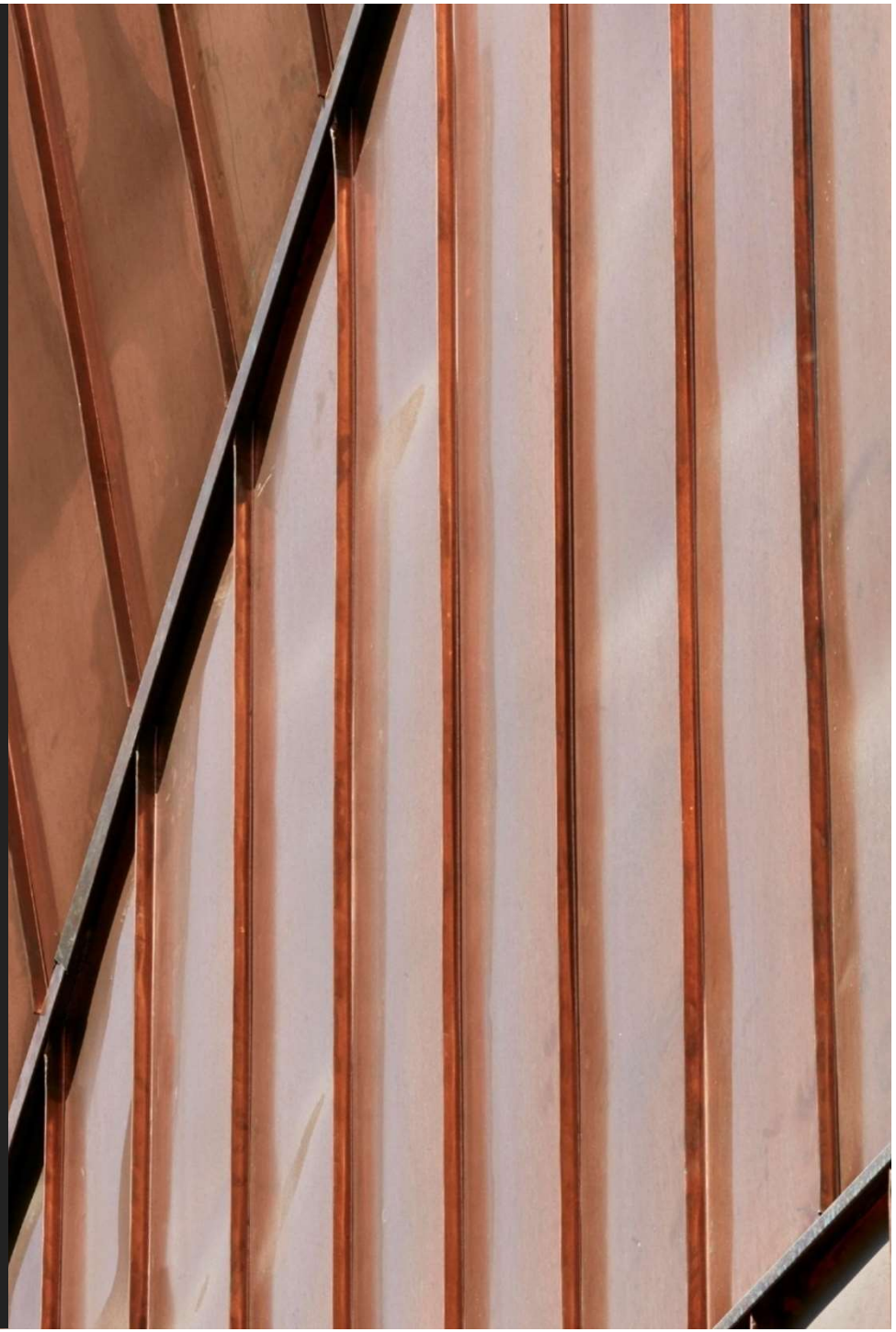
9.3.2 Following the Preliminary Options Appraisal, a more detailed, quantitative appraisal will be carried out for the options that perform well against the TPOs and STAG criteria.

Appendix A Online Seminar Data Presentation

Tay Cities Park & Choose Strategy: Opportunities along the Perth – Montrose Transport Corridor

Initial Appraisal: Case for Change
Stakeholder Webinar

7 May 2020



Purpose of Webinar

- Explain purpose of the Study
- Capturing views of key stakeholders on:
  - Problems and Opportunities
  - Key Themes
  - Potential Options
- Let you know what will be done next

Agenda

13.30 – Welcome and Housekeeping

13.35 – Introduction and Background

13.40 – Initial data trends and observations

14.00 – Revolution in Rail proposals

14.10 – Q&A

14.15 – Break

14.20 – Introduction to Problems and Opportunities Session

14.25 – Stakeholder Discussion on Problems and Opportunities

14.55 – Break

15.15 – Summary of key themes

15.25 – Introduction to Options Session

15.30 – Stakeholder Discussion on Potential Options

16.00 – Next steps / closing remarks

Housekeeping

- Please do not share your webcam or screen
- Your mic will be muted when the host is presenting
- If you wish to speak, please type your name in the chat box and you will be given the opportunity to participate
- When speaking please keep background noise to a minimum

Introduction & Background

Niall Gardiner

Senior Partnership Manager

Tayside and Central Scotland Transport Partnership

Introduction & Background (cont.)

Local Rail Development Fund

- Multi-modal STAG based transport study – opportunities for Park & Choose facilities on the Montrose – Perth Corridor, including north of Perth

Background

- Historically rail network in corridor not used for local commuter journeys, but has been increasing incrementally.
- Bus based P&C – only significant facility in Tay Cities region is Broxden, Perth
- Tactran/Tay Cities P&C Strategy

Study

- Rail and coach/bus options for P&C on strategic routes within study area (supported by Active Travel).
- Maximise opportunity presented by Revolution in Rail and Aberdeen to Central Belt proposals

Introduction & Background (cont.)

Key aims to identify and investigate options which can:

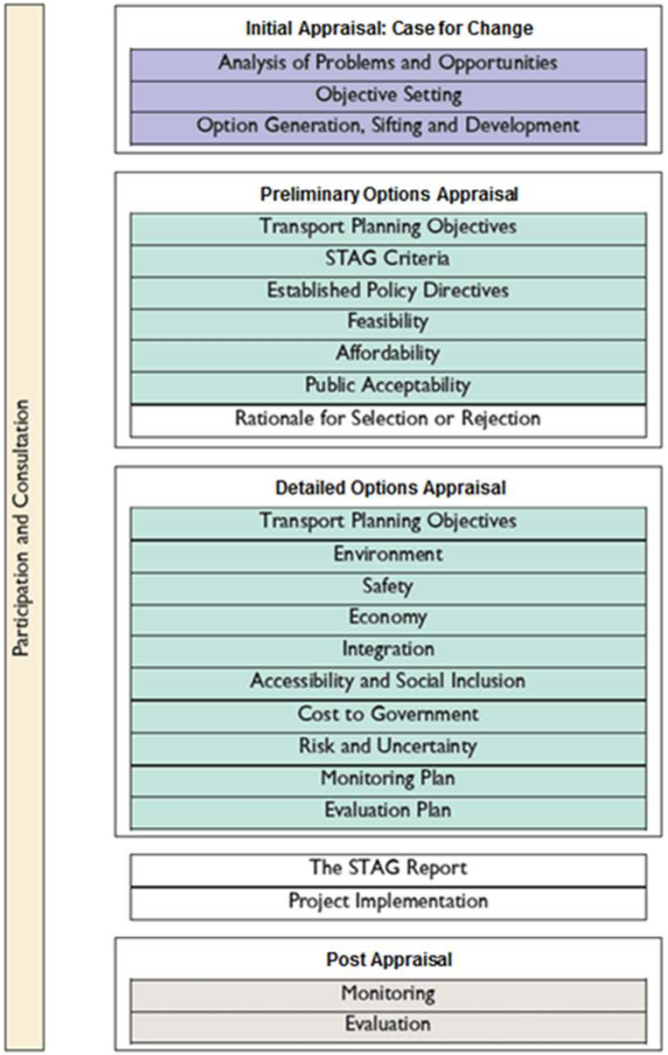
- Reduce congestion and air pollution in Perth and Dundee
- Support climate change and journey time objectives by reducing road traffic on strategic routes
- Address peripherality of Tay Cities Region by improving sustainable connectivity options to Scotland's cities

Scottish Transport Appraisal Guidance

- Focus for this part of the study is **Initial Appraisal: Case for Change**

- Provides mechanism by which potential options to address evidence-based transport problems or opportunities are identified and appraised in a consistent manner

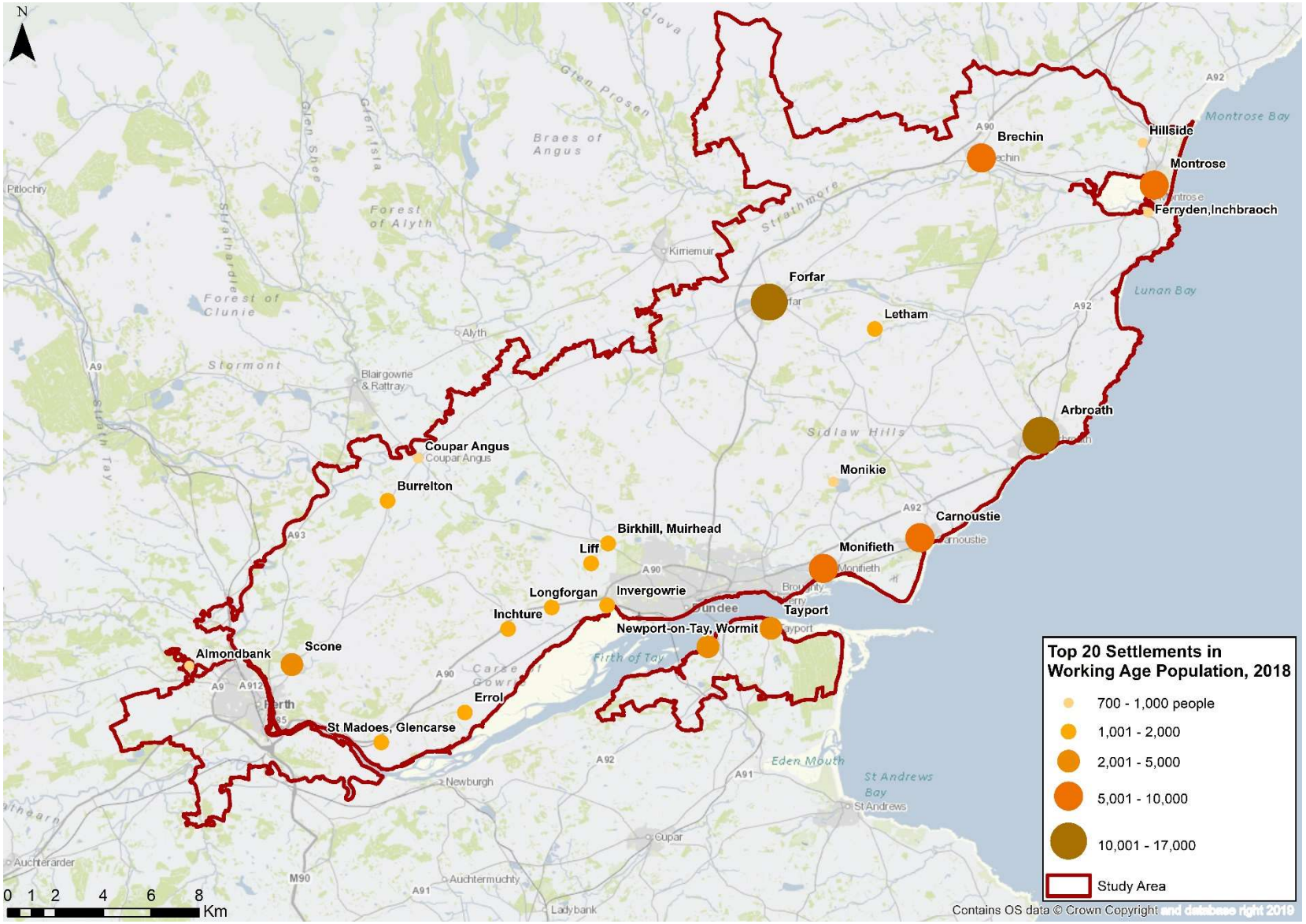
- Objective-led, proportional and robust



Initial Data Trends & Observations

- Main **characteristics** that influence Park & Ride / Park & Choose
  - Socio-Economic
  - Trip
  - Parking

Selected Settlements Profile



Data Source: National Records of Scotland, 2018

Some Key Points – Selected Settlements

- **Positive growth** in working age population between 2011 and 2018 for many settlements
- Over **70%** of settlement total population made up of **working age residents**
- Relatively **high levels of car availability** ranging from 65% (Arbroath) to 94% (Monikie)
- Clear correlation between **economic activity** and **car availability**
- In broad terms, **median household income** linked to **car availability**

Data Sources: National Records of Scotland (2011 & 2018), 2011 Census and Scottish Government Statistics (2014)

Journey times to Rail Stations and existing bus-based P&R sites From Selected Rural Hinterland Settlements 7am – 9am

Settlement*	Rail Station / P&R	Car JT (mins)	Public Transport (mins)
Forfar (71%)	Dundee Rail Station Broxden P&R Scone P&R	23 46 39	55
Brechin (71%)	Montrose Rail Station Broxden P&R Scone P&R	13 60 52	27
Burrelton (92%)	Perth Rail Station Broxden P&R Scone P&R	20 24 12	45
Letham (85%)	Arbroath Rail Station Broxden P&R Scone P&R	18 55 50	31
Coupar Angus (81%)	Perth Rail Station Broxden P&R Scone P&R	23 28 16	49

* Car Availability in brackets

Data Sources: 2011 Census and TRACC

Car Parking at Rail Stations and P&R

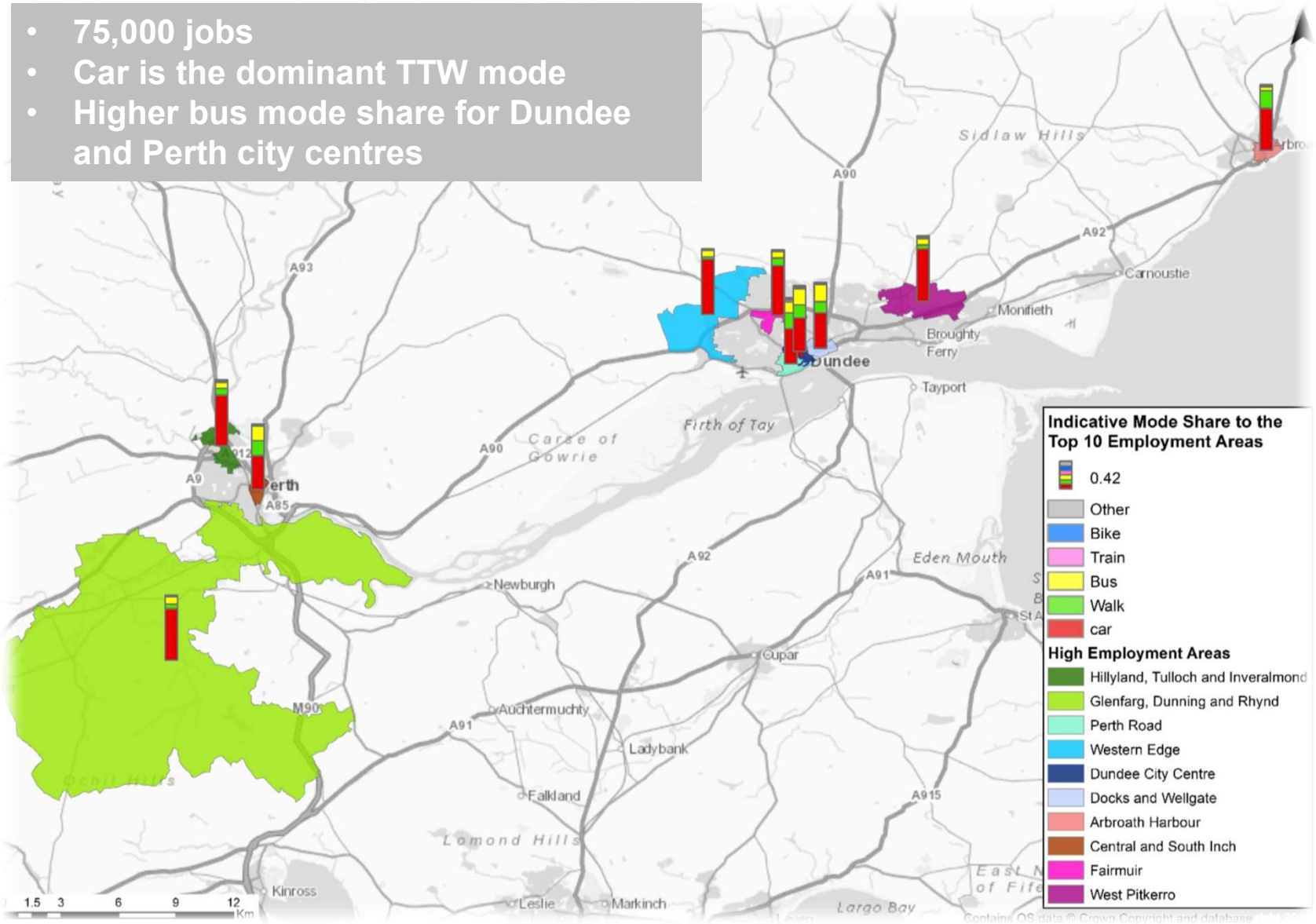
Station Name	Number of Spaces	Daily Cost	Capacity Issue?
Montrose	60	Free	Yes, at capacity
Arbroath	70	£2.50	Yes, approaching capacity
Carnoustie	17	Free	Yes, approaching capacity
Monifieth	20	Free	No
Broughty Ferry	100	£2.50	Yes, at capacity
Dundee Greenmarket*	548	£9.60 (8am-6pm, Mon-Sat)	-
Invergowrie	n/a	n/a	n/a
Perth	261	£3.00	Yes, approaching capacity
Broxden P&R	400	Free	No
Scone P&R	50	Free	No

* One of many car parks near Dundee Rail Station

Data Sources: Tay Cities Regional Transport Model (TCRTM), Dundee City Council and ScotRail websites

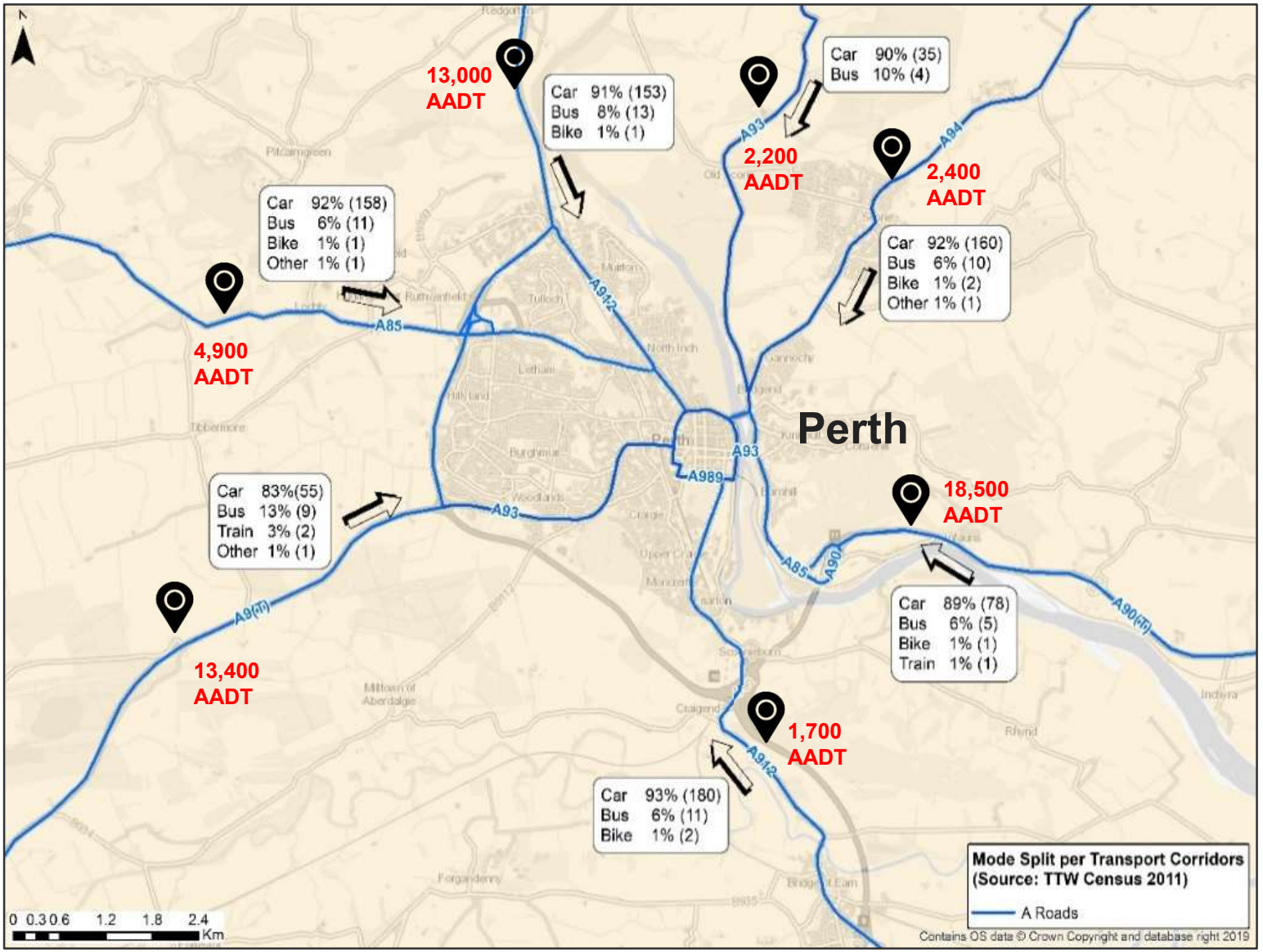
Top 10 Employment Areas

- 75,000 jobs
- Car is the dominant TTW mode
- Higher bus mode share for Dundee and Perth city centres



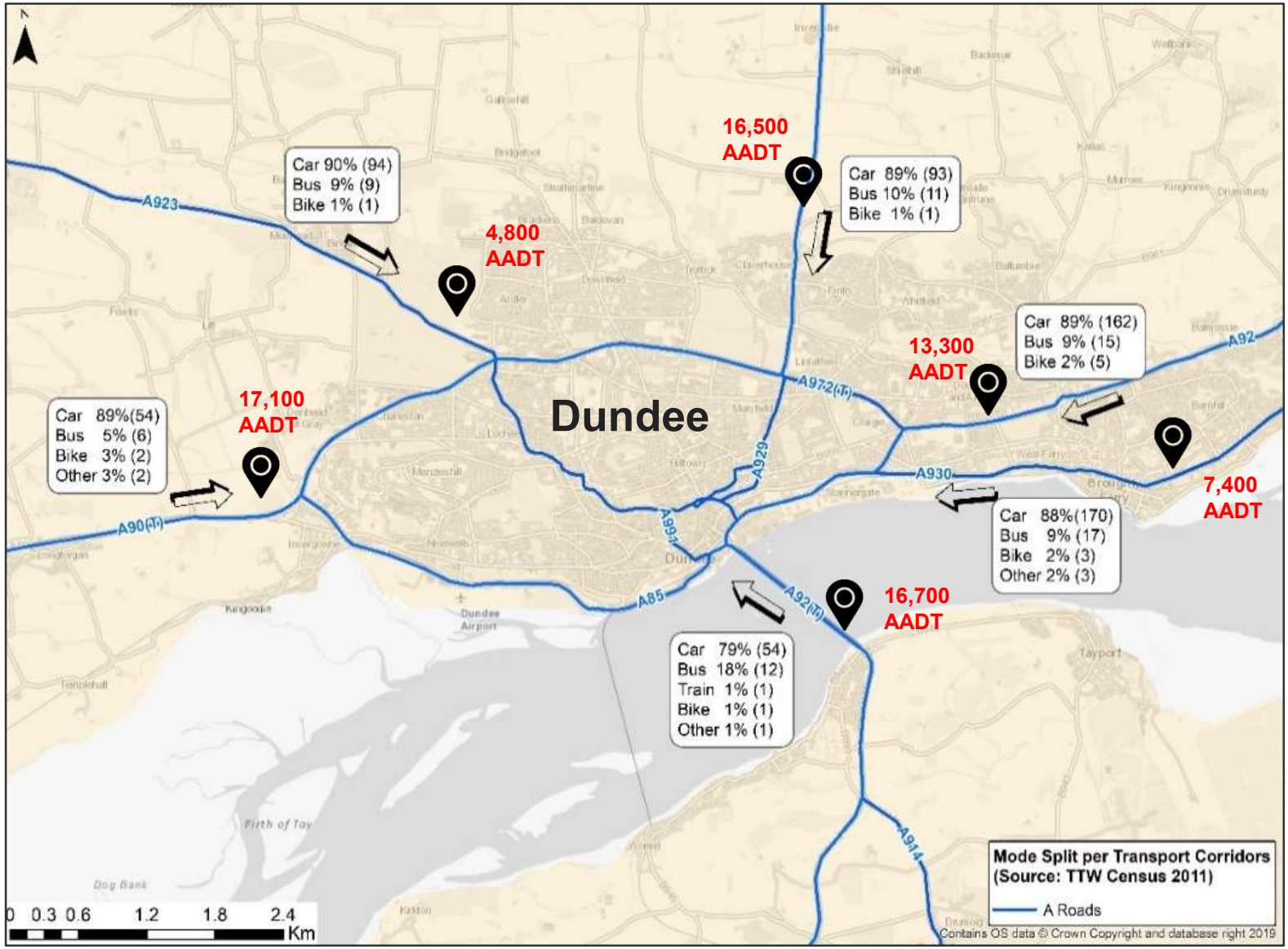
Data Sources: NOMIS / BRES (2018) and 2011 Census

Mode Share – Travel to Work in Perth



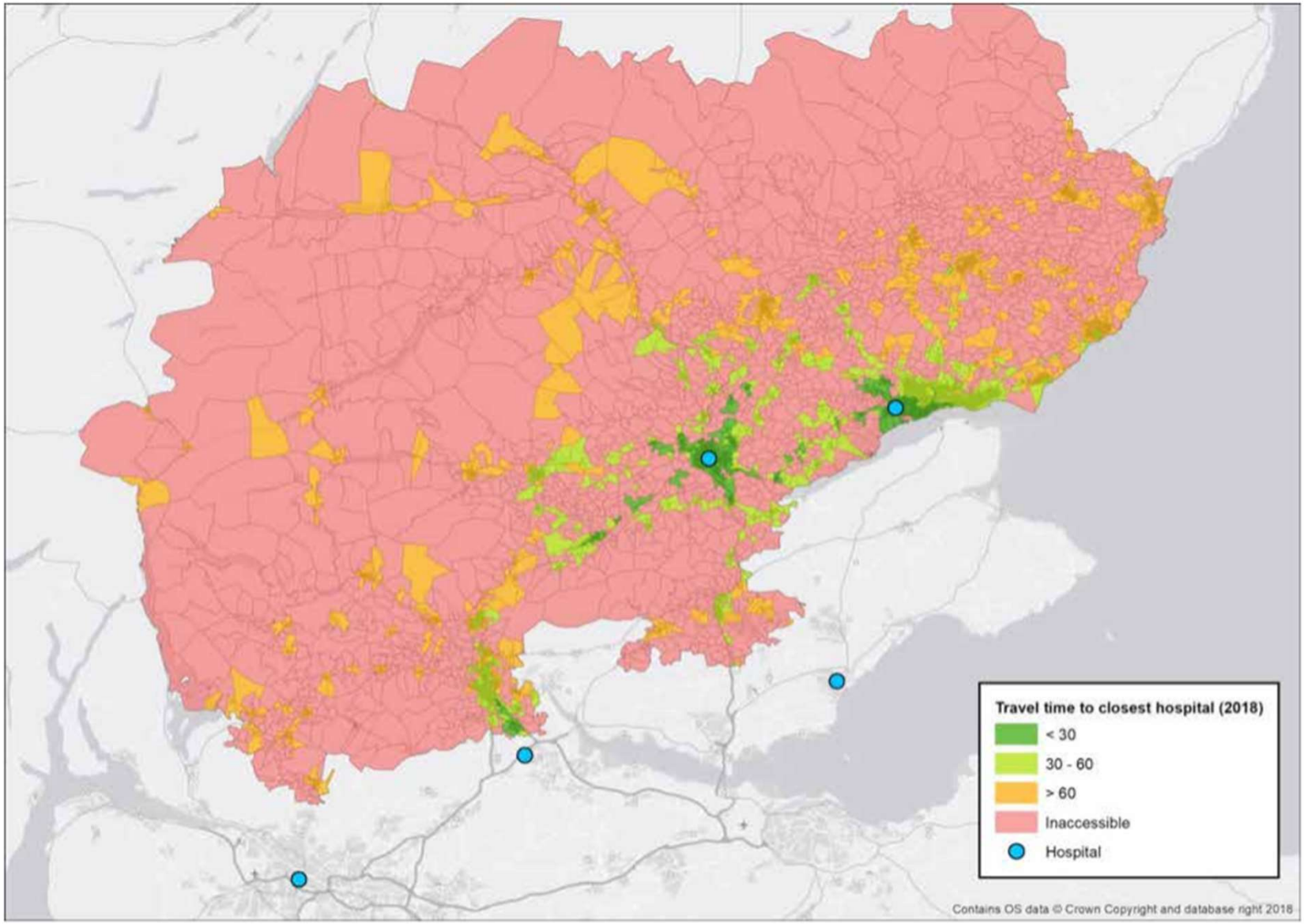
Data Sources: 2011 Census, Transport Model for Scotland 2018 for AADT

Mode Share – Travel to Work in Dundee



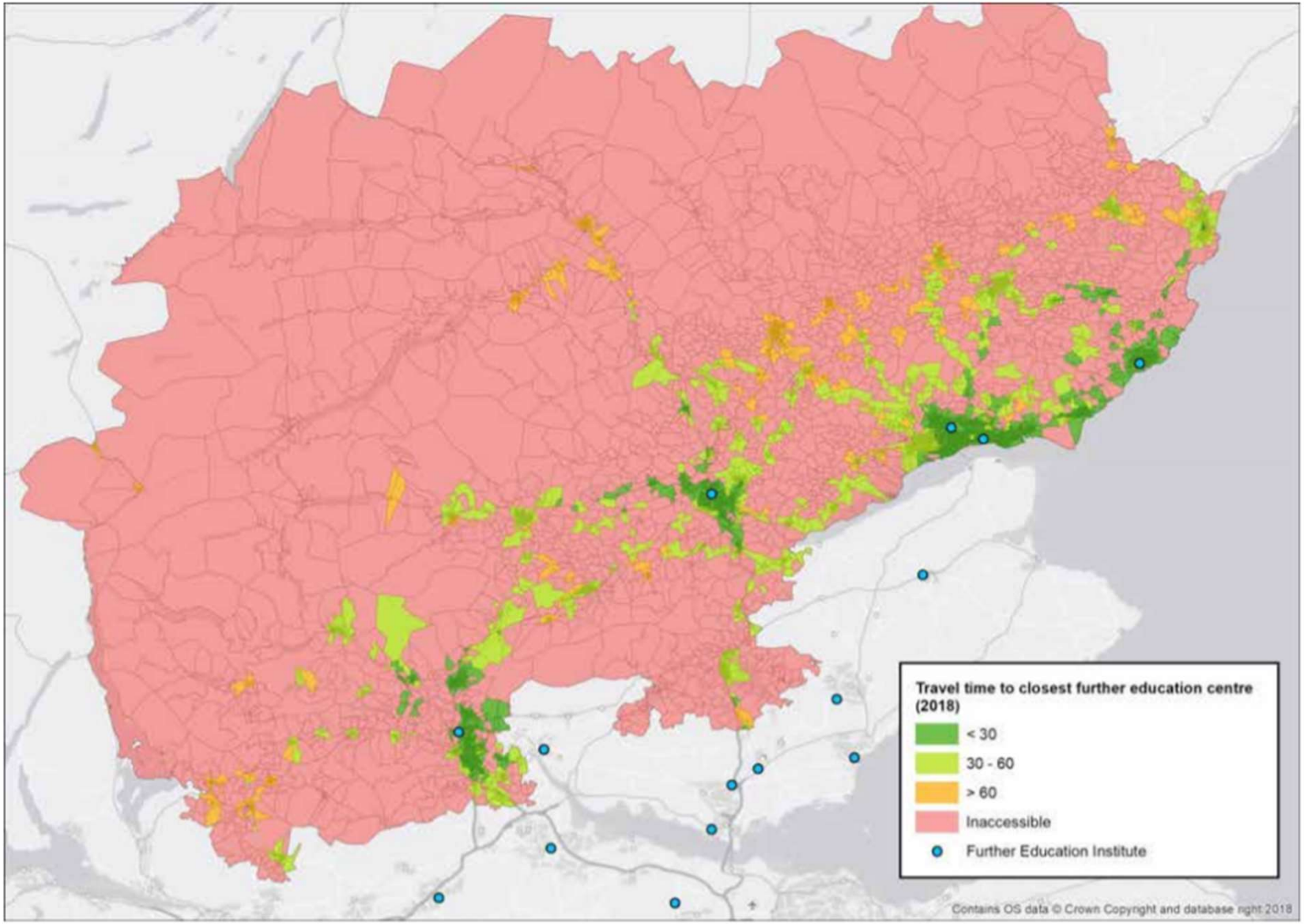
Data Sources: 2011 Census, Transport Model for Scotland 2018 for AADT

Access to closest A&E hospital by PT



Data Source: Tactran RTS Monitoring Framework, 2018 Progress Report

Access to closest further education centre by PT



Data Source: Tactran RTS Monitoring Framework, 2018 Progress Report

Railway Stations in Angus – Top 10 Annual Journeys

	From: Montrose		Arbroath		Carnoustie		Monifieth	
Rank	**Annual Journeys**		**Annual Journeys**		**Annual Journeys**		**Annual Journeys**	
1	112,300	Aberdeen	132,800	Dundee	55,900	Dundee	2,300	Edinburgh
2	72,800	Dundee	59,000	Aberdeen	24,500	Aberdeen	1,600	Dundee
3	41,500	Edinburgh	39,000	Edinburgh	9,400	Edinburgh	1,200	Perth
4	27,000	Arbroath	27,000	Montrose	7,600	Glasgow	300	Glasgow
5	21,000	Glasgow	19,400	Glasgow	7,000	Arbroath	100	Arbroath
6	10,900	Perth	16,200	Perth	6,600	Perth	100	Stirling
7	7,900	Stonehaven	9,000	Dyce	2,800	Dyce	100	Broughty Ferry
8	6,500	Dyce	7,000	Carnoustie	2,300	Stonehaven	50*	Leuchars
9	5,400	North East	6,100	London	2,300	Montrose	50*	Aberdeen
10	5,400	London	5,500	Leuchars	1,100	Stirling	50*	Charing Cross
Values Rounded to Nearest Hundred								

Data Source: MOIRA 2018
* Values rounded to nearest fifty

Railway Stations in Dundee and Perth & Kinross
Top 10 Annual Journeys

	From: Broughty Ferry		Dundee		Invergowrie		Perth	
Rank	**Annual Journeys**		**Annual Journeys**		**Annual Journeys**		**Annual Journeys**	
1	7,900	Dundee	429,600	Edinburgh	2,100	Dundee	283,000	Glasgow
2	7,500	Perth	215,500	Glasgow	1,900	Perth	215,500	Dundee
3	6,700	Glasgow	215,500	Perth	700	Glasgow	208,900	Edinburgh
4	5,700	Edinburgh	138,300	Aberdeen	500	Edinburgh	65,100	Stirling
5	5,100	Arbroath	132,800	Arbroath	200	Stirling	40,500	Inverness
6	2,900	Aberdeen	72,800	Montrose	100	Aberdeen	38,200	Aberdeen
7	1,100	Carnoustie	62,000	Leuchars	100	Broughty Ferry	23,200	Kirkcaldy
8	1,000	Montrose	55,900	Carnoustie	100	Gleneagles	20,600	Pitlochry
9	900	Stirling	50,100	London	50*	Montrose	16,200	Arbroath
10	500	Stonehaven	50,000	Kirkcaldy	50*	Carnoustie	16,100	London
Values Rounded to Nearest Hundred								

Data Source: MOIRA 2018
* Values rounded to nearest fifty

Revolution in Rail Proposals

Ewan Tait

ScotRail Business Development Executive

What have we done?

- We used to try to provide direct services from everywhere to everywhere else.
  - InterCity services provided the majority of local services in Dundee and Angus.
- In December 2018 we introduced a new timetable across the region.
- A frequent local service for communities in Dundee and Angus with InterCity services calling at limited intermediate stations.
- Hourly local service between Montrose and Aberdeen:
  - Montrose increased from 52 station calls to 91 calls
- Hourly local service between Arbroath and Dundee, with many trains offering direct journeys to Edinburgh or Glasgow:
  - Arbroath increased from 61 station calls to 92 calls.
  - Carnoustie increased from 34 station calls to 47 calls.
  - Monifieth increased from 7 station calls to 30 calls.
  - Broughty Ferry increase from 16 station calls to 39 calls.
- Connections at Dundee, Arbroath and Montrose.

Where are people travelling?

- The new timetable is encouraging more people to travel.
  - Carnoustie is down against 2018 because the Open Golf took place, but is up 6% on 2017.
- Reversing the decline in patronage between Angus and Aberdeen.
- More people travelling into Dundee from the east:
  - Montrose up 8.5% from 72,300 to 78,400 single passenger journeys
  - Arbroath up 12% from 130,600 to 146,000
  - Broughty Ferry up 208% from 9,700 to 29,900
  - Monifieth up 364% from 1,500 to 6,800
- More local trips between communities on the east coast.
  - Monifieth to Arbroath up from 63 single passenger journeys in 2018 to 1,970 journeys in 2019
- Despite fewer direct services, there was an increase in journeys between Broughty Ferry and Aberdeen from 3,400 to 4,400.

	2018	2019	%
MONTROSE	341,000	344,000	1%
ARBROATH	364,000	383,000	5%
CARNOUSTIE	202,000	134,000	-34%
MONIFIETH	6,000	20,000	265%
BROUGHTY FERRY	46,000	90,000	94%
DUNDEE	1,956,000	2,041,000	4%

What is still to come?

- We are not finished yet!

- We will introduce an hourly regional service between Arbroath, Dundee and Glasgow, non-stop from Stirling to Glasgow:
  - This will give Invergowrie, Gleneagles, Dunblane and Bridge of Allan a regular hourly service, with connections at Dundee and Perth to Aberdeen and Inverness.
  - Additional services during peak periods.
  - Arbroath services will go to Glasgow instead of Edinburgh.

- Timing the introduction of the timetable is critical:
  - We must have sufficient refurbished HSTs.
  - We must be confident that the timetable can be introduced reliably.
  - We must have exited Breach level on our Express Other service group, which includes InterCity services to and from Inverness.

Thank You and Questions

Discussion on Problems and Opportunities

- **Problems:** existing and future problems within the transport and land-use system, e.g. lengthy journey times, poor access to services etc.

  Focus on problems experienced by a user of the transport network **and** problems caused by the operation of the network

- **Opportunities:** chances to improve the transport and land-use system to realise opportunities, e.g. improve journey times; provide additional public transport services and to where etc.

Problems

- Who encounters transport problems and what journeys do these affect?
- What do these problems mean for people who live in the area?
- Specific Problems faced by bus users and the bus industry
- Specific Problems faced by rail users and the rail industry?
- Specific Problems faced by car users
- Specific Problems those using active travel

Key Themes

- Review and discussion on emerging key themes

Discussion on Potential Options

- Ideas for options that could:
  - alleviate the identified or perceived problem
  - address potential opportunities
- Cast the net wide in generating options / ideas
- Consider feasibility and deliverability

Options

- Park & Ride / Park & Choose

- Mode specific options:

  Bus
  Rail
  Active Travel

Next Steps

- Complete Engagement Programme
- Analysis of Problems and Opportunities
- Develop Transport Planning Objectives
- Option Generation and Development
- Feedback to stakeholders as the study progresses
- Final Initial Appraisal: Case for Change Report planned completion end of June

Thank you for participating

Further details:

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Appendix B Briefing and Opportunity to Comment Questionnaire

Tay Cities Park & Choose Strategy: Opportunities along the Perth - Montrose Transport Corridor STAG Appraisal

Stakeholder Engagement

Stantec

Introduction

Stantec has been commissioned by Tactran, the Tayside and Central Scotland Transport Partnership, to undertake a multi-modal STAG based transport study of the Perth – Montrose Transport Corridor to consider potential opportunities that would complement a Tay Cities Park and Choose Strategy. This study is being funded through Transport Scotland's Local Rail Development Fund (LRDF).

This work will inform both the work of the Tay Cities Regional Transport Working Group and Transport Scotland's second Strategic Transport Project Review (STPR2). The key aims of the study are to identify and investigate options which can:

- Reduce congestion and air pollution in Perth and Dundee
- Support climate change and journey time objectives by reducing traffic on strategic routes and
- Address the peripherality of the Tay Cities Region by improving sustainable connectivity options to Scotland's cities.

The Scottish Transport Appraisal Guidance (STAG) Process

The study will be developed through an objective led process in line with Scottish Transport Appraisal Guidance (STAG), drawing upon a wide range of evidence, insight and experiences to achieve a shared approach to meeting the transport needs of the Tay Cities Region.

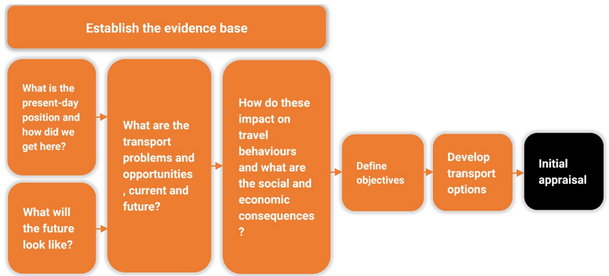

Figure 1: Study Process

The Study

To date, we have reviewed previous studies and held consultation events with regards to the Tay Cities Region and more specifically within the Montrose to Perth Corridor. This analysis has presented an initial understanding of the socio-economic background, key travel movements and travel trends across the study area and to identify some of the existing transport problems, including those that are currently preventing the use of existing bus-based park and ride at Broxden and use of rail-station car parks along the corridor.

Stakeholder Engagement is integral to the STAG process and both complements and validates the data analysis tasks. As such, we would like to hear from you, as a key stakeholder, to gain your views and insights on the transport network in the Tay Cities Region, including mention of any specific problems or opportunities you are aware of.

Although we are currently in a state of flux with the current COVID19 pandemic, which has introduced further uncertainty into all aspects of life, we would be keen to understand your views from (i) a Pre-COVID19 perspective; and (ii) what you feel may be the problems and potential opportunities as social distancing policy relaxes and a 'new normal' arises.

The Study Area

The study is shown in Figure 2 right and includes Perth and Dundee cities as well as the key towns of Montrose, Arbroath, Carnoustie, Forfar and Brechin. Beyond this study area, it is also important to consider the wider coverage of the travel to work catchments of the study area for two main reasons; (i) commuters will be the main driver for the demand for the use of Park & Ride / Park & Choose sites; and (ii) to identify any longer strategic movements beyond the study area, which have an impact on the study area transport network.

From the initial socio-economic analysis and consideration of 2011 Scottish Census data, the following key points can be drawn:

- 66% of employed people living in Dundee also work in Dundee;
- 56% of employed people living in Perth also work in Perth;
- Nearly 7,000 people commute for work between Dundee City and Perth & Kinross council areas;
- Over 14,000 people commute for work between Dundee City and Angus council areas
- 35% of people living within the travel catchment areas of Perth and Dundee work in those cities;
- While 4% of people living in Perth and Dundee work outside the cities but within the Tay Cities area; and
- Just over 20,000 people living outside the Tay Cities Region work within the Region.

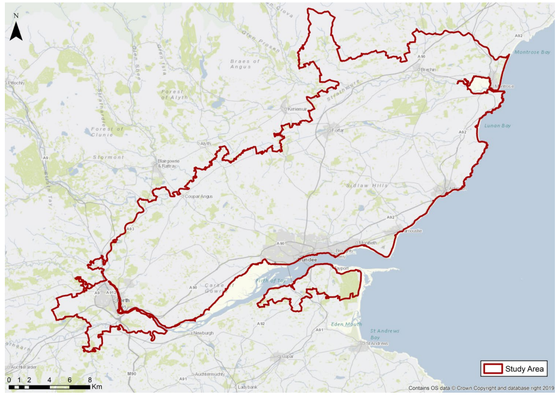

Figure 2: Study Area

This analysis has highlighted the importance of Perth and Dundee to the region's economy. Further key points which can also be drawn:

- 73% of those working in the area, travel to work by car either as a driver or passenger;
- 11% of people use public transport, 1% train and 10% bus;
- Across the largest 25 settlements, on average, 70% of people are economically active;
- While on average 83% of the population have access to a car or van; and
- Both Perth and Dundee have significantly lower access to a car than the wider region at 66% and 58% respectively.

Identified Problems

Below we have set out the key problems we have identified to date.

▶ Problem 1: Lack of rural connectivity

Rural connectivity is a real issue across the region, particularly in Angus and some areas of Perth and Kinross. Transport poverty is a huge concern in these areas where there are limited transport options. This includes the ability to access employment, education and healthcare. In Angus, transport provision is generally much better following the rail corridor on the coast however, provision gets significantly worse in the more rural, inland hinterlands.

▶ Problem 2: Lack of direct public transport services

A key problem across the study area and a reality of public transport design, in that it is impossible to provide direct connections between every area, this results in the requirement to interchange.

▶ Problem 3: Congestion at key junctions approaching Perth and Dundee within peak times

Several key junctions approaching the cities of Perth and Dundee experience time lost to congestion during busy periods, this can affect both private and public transport journeys.

▶ Problem 4: Long bus journey times

Stakeholders have informed us that bus journey times can be very long which deters people from using the service. This can be a consequence of congestion and routing in addition to the rural nature of some of the study area.

▶ Problem 5: Poor perception of public transport, especially bus

It has been suggested that there is a perception problem with public transport in the study area, this may be due to poor experiences or hearsay. Other studies however do suggest cultural barriers exist towards bus use in various parts of Scotland.

▶ Problem 6: Poor frequency of evening public transport services

Public transport availability after working hours was highlighted to be an issue within parts of the study area. Often services are reduced or stopped altogether after 5pm. People travelling at these times are more likely to be dependent on public transport than other groups, those working shifts, in shops, bars and restaurants.

▶ Problem 7: Very easy to drive out with Peak times with plentiful parking availability within Dundee and Perth

Whilst there are reasonable public transport services into the key cities of Perth and Dundee, these can be affected by poor journey times and the requirement to interchange. By contrast, with limited congestion out with peak times and plentiful parking available, the option to drive is often seen as an easier, more convenient option.

▶ Problem 8: Lack of active travel infrastructure/routes

One of the key barriers to active travel was thought to be the lack of high-quality infrastructure. This includes well connected, segregated cycle paths and secure storage facilities at both origin and destinations.

▶ Problem 9: Lack of secure storage for bicycles

Stakeholders have told us that there is a lack of secure storage for bicycles at both origins and destinations, including at most interchanges (rail stations). This is especially the case in deprived areas where, for example, people may be living in flats with no other option then to carry their bike up and down the stairs.

▶ Problem 10: Poor public transport and active travel integration

Integration between public transport and active travel can be an issue. This can include availability of safe active travel links to and from public transport interchanges, it may cover the first and last mile of the journey or it may require parking facilities to be available at interchange.

Key Opportunities

Below we have set out the key opportunities identified to date relating to the study area. Opportunities include existing or planned infrastructure, policy, schemes, resources and projects which could be capitalised upon to improve the transport system or address other problems along the corridor.

▶ Opportunity 1: Trip generators and attractors are present on key corridors within the study area

There are large employment premises and areas on key corridors, particularly in Dundee which should support public transport services and enhanced walking and cycling infrastructure.

▶ Opportunity 2: Improve regional active travel network and link with other regions

Key opportunity to link Tactran's active travel network with neighbouring regions such as SEStran.

▶ Opportunity 3: Maximise planned cycle hire use in the region

Cycle hire and electric bike schemes currently being planned in key areas within the region. Opportunity to incorporate into park and choose sites.

▶ Opportunity 4: Vehicle Suppression Mechanism

A low emission zone is currently planned in Dundee which will place limits on vehicles and engine types allowed access to the city centre. There is an opportunity to align with this and other policies to enhance the park and choose offer.

▶ Opportunity 5: Improved Transport Powers

The Transport (Scotland) Act 2019 provides Local Authorities with new/extended powers including the ability to provide bus services, enforce bans on footway and double parking, and implement a workplace parking levy.

▶ Opportunity 6: Alignment with National Objectives

National Transport Strategy 2 requires investment is in line with the Sustainable Transport Hierarchy and supports more radical measures such as demand management and reallocating road space to drive this change. Support from national government will empower local authorities to consider and deliver greater change to their own transport networks.

▶ Opportunity 7: Availability of External Funding Sources

A review of potential funding sources for the study corridor has highlighted potential avenues to help deliver low carbon, sustainable transport infrastructure, this includes sustrans funding streams.

Questions

We would appreciate your help answering the following questions about travel issues in the study area. Please can you answer these questions in terms of typical conditions in the study area (Pre-COVID19), rather than current conditions. We would like you to think about travel to work, travel during work and travel for leisure and ask you to consider aspects such as safety, security, efficiency of routing, quality of infrastructure and network cohesion. Where applicable, please make reference to where specific problems exist/are most pronounced, providing a geographic location, as this will assist in the appraisal process.

What is the name of your organisation?

Please summarise your role within the organisation

What is your organisation's operational remit and geographical coverage?

What do you think the **key problems** are within the study area, in terms of:

Active travel (walking, wheeling and cycling)?

Public transport (e.g. bus services, rail and park & ride)?

Private vehicles (taxi, car, van, freight)?

What do you think the **key opportunities** are within the study area, in terms of:

Active travel (walking, wheeling and cycling)?

Public transport (e.g. bus services, rail and park & ride)?

Private vehicles (taxi, car, van, freight)?

Focussing on existing bus-based and rail-based Park and Ride / Choose sites within the study area, what do you feel are the current barriers to people using these sites?:

Are there any **existing sites** that you feel could provide an opportunity for improving the park and ride / choose complement through improvement?

Are there any **new sites** that you feel could provide an opportunity for improving the park and ride / choose complement?

Are there opportunities to introduce new complimentary measures which would encourage greater use of park and ride?

Do you have any other general points you wish to make which are of relevance to this study?

Do you have any thoughts on what you feel may be the future opportunities for active travel / integration and challenges for the public transport industry, as a result of the current Covid19 crisis and future attitudinal changes towards travel?