Forth Valley Connectivity Commission Issues Report

February 2022

Foreword

What is it that turns a good place into a really great place to do business, and to call home? How can we maximise the Forth Valley's position, right at the heart of Scotland, to make it so much greater than simply the sum of its parts?

Connectivity is the key to unlocking the full potential of this regional economy for the benefit of the people who choose to live, work and play here, in the middle of Scotland's central belt. Through providing all necessary connections, into, through and around the region, we can enable its environment and economy to thrive.

The Forth Valley has always been at the forefront of major societal change, home to great economic generators while offering the very best in cultural and natural capital. But the region is now at a crossroads, experiencing a once in a generation transition, bringing with it both new challenges and opportunities. When I was first approached to chair the Forth Valley Connectivity Commission, my initial response was to point out the region's existing strong connections to both major national and international markets. The region contributes hugely to the value of the Scottish and UK economies, and it has some of the most desirable places to live in the country. So, how can this be improved upon?

The American scholar Jim Collins was correct when he identified that 'good is the enemy of the great'. Why, therefore, should the Forth Valley region accept its current situation when there is further room for improvement? What does it mean for the Forth Valley to be a great place to live and do business, rather than merely good-enough? Moreover, while the circumstances may be good enough for some, the fall short for many others. To make a place truly great, we must ensure that everyone is included.

It's with that aspiration in mind that we should consider the role of connectivity, and why a regional approach is necessary. The Forth Valley has always responded well to change, but the pace of change is increasing, and the need for change is without question. The climate crisis creates an imperative to decarbonise both our economy and society, while the experience of the Covid-19 pandemic has accelerated how we access the workplace, utilising new technologies and creating changing expectations for our approach to employment.

At a national level, policy is both responding to and driving forward this changing landscape. The Scottish Government has set clear milestones on Scotland's journey to becoming a Net Zero nation, whilst at the same time fostering inclusive growth as part of a 'Just Transition'. Enhanced connectivity therefore has a critical role to play in both lowering emissions but also in better bringing together people and places in a way that enables them to unlock their full productivity and flourish.

To make the most of these changing national circumstances, the Forth Valley needs to adopt a genuinely collaborative approach, one that pulls on all the talent and skills that the region has. We must also hear from all sections of society and search out voices that have not always been heard so we can better understand the complex needs of our communities, both now and in the future. That is what the Forth Valley Connectivity Commission aims to achieve. Together, the three local authorities within the Forth Valley have recognised that challenges can be turned to significant opportunities, navigated best on a regional basis. To do that, however, it needs to consider the region's connectivity from a genuinely regional perspective.

That means hearing directly from the region's employers and job creators, our educators and service providers, local authorities, as well as the myriad of community-based and third sector organisations whose footprints extend and overlap, from rural Stirlingshire in the north to the industrial and urban clusters in the south and east. The Commission's membership, which comprised a cross-section of local employers, connectivity specialists and officials tasked with driving forward the region's economy, undertook its initial evidence gathering in the autumn of 2021 in a number of different ways, using both committee-style oral evidence sessions as well as targeted calls for written evidence. In addition, we welcomed community involvement through a workshop organised through third sector partners, and made special provision for the voice of the next generation through 1Future, a young people's forum organised in conjunction with Forth Valley College.

This 'issues report' outlines the Commission's early findings, and sets out not just the key challenges that the Forth Valley faces now, but also what issues will need to be addressed to provide the necessary catalyst for change at a local, regional and national level. We use case studies throughout to illustrate in real-life terms how the connectivity status quo shapes the choices which individuals, business and families make every day.

I thank all who have contributed, both for their precious time and for their valuable insights.

Bob Duff
Chair, Forth Valley Connectivity Commission
February 2022

Executive Summary

1 The Forth Valley sits at the heart of Scotland; a cluster of distinct communities linked together by economic and social interactions. Thousands travel within the region on a daily basis to access education, services and employment, including at some of the country's most critical industrial sites, while many more travel into and out of the region to and from Edinburgh and Glasgow.

2 Landmark investment in the region through the Stirling and Clackmannanshire City Region Deal and the Falkirk Growth Deal have the potential to support jobs, growth, and socially inclusive prosperity and the region's three local authorities are working closer than ever before to capitalise on this opportunity. An emerging shared regional economic strategy, aiming to leverage additional investment and bring added value, will enhance prospects for sustainable employment and skills development.

3 Connectivity is essential to realising that vision. Opportunities can only be genuinely inclusive if they are accessible to all, regardless of geography or economic and social circumstances. Similarly, the development of the region will only be sustainable if it is consistent with the Scottish Government's ambitious targets for decarbonisation. An integrated approach to economic growth, connectivity and sustainability is therefore a necessary step in making a 'just transition' to Net Zero.

4 Accounting for almost 40% of Scotland's carbon emissions, transport is one of the most difficult sectors to decarbonise. With around two thirds of these emissions coming from road traffic, the environmental imperative of addressing connectivity is clear, particularly if the Scottish Government's target of reducing emissions by 75% compared to 1990s levels by 2030 is to be achieved. With a nationwide commitment to reduce the total number of car kilometres by 20% by 2030, it's clear that real changes in travel behaviour are needed. We cannot simply shift to more efficient motor vehicles or switch a few percent of trips to more sustainable modes; we need to fundamentally rethink our approach to mobility.

5 Doing so is an important opportunity to reassess how our transport system supports our longer-term vision for growth and productivity. With differential access to transport being a significant driver of inequality, how can we design services and connections that are genuinely inclusive? Just over 30% of people in Scotland have no access to a car, making them reliant on public transport or walking and cycling to access jobs and services, yet many centres of employment remain poorly served by public transport.

6 Addressing this imbalance can therefore act as a catalyst for achieving better economic and social, as well as environmental, outcomes, creating a virtuous circle. Greater use of public transport results in more efficient and cost-effective services. A larger shift to active travel reduces emissions whilst improving physical and mental wellbeing, reducing the strain on precious healthcare resources. The easier it is to access everyday needs locally without a car, the more spending power is retained in communities, improving their appeal as places to live and work.

7 In the Forth Valley, this challenge has its own dimensions. While national investment has improved strategic transport corridors, in particular motorway upgrades and rail electrification, many communities within the region have been bypassed. In many cases, it remains easier to travel in and out of the region than it is to travel between its numerous centres of employment, economic activity and housing. Communities reliant on bus services have seen service levels fall and fares increase, which disproportionately impacts younger people, lower income groups, and those with additional physical mobility requirements. The rise of online retailing and the continued expansion of out-of-town sites have hollowed out the region's urban centres, leading to further service reductions, while the increase in car-centric housing developments only serves to exacerbate this trend, creating a vicious cycle where reliance on private motor transport becomes essential to accessing the full range of economic and public services available.

8 The Forth Valley is a 'polycentric' region of several small- and medium-sized places, with complex trip patterns more difficult to serve by public transport. Key employment centres including those in Grangemouth, the University of Stirling and Forth Valley Royal Hospital are all served poorly by rail connections and therefore rely disproportionately on the region's fragmented bus network for public transport provision.

9 The Forth Valley therefore has its own, distinctive economic and spatial context against which policy decisions must be taken. This can be defined as a trilemma; a set of three interconnected challenges that can only be solved by tackling them together, as a system:

10 ### Challenge 1: Securing a transformation from a carbon intensive to Net Zero region

Ensuring the continued role of the area around Grangemouth as an anchor for the regional economy amid a shift away from carbon intensive industry. Investment in the future of Grangemouth can catalyse a wider reshaping of the region's economic footprint through pioneering new products and services. However, these opportunities must genuinely be open to the whole region, including those underserved by the current transport system. A genuinely integrated system would better connect Grangemouth to the wider region, promoting a fairer economic transition by including demographics currently excluded by geography, prohibitive travel costs or a lack of service integration.

11 ### Challenge 2: Supporting people and their places to be more productive

Stirling, Clackmannanshire and Falkirk are well connected to surrounding economic centres but connections within the region, between individual communities, are considerably poorer. As town and city centres look to recover from the economic harms of the pandemic, there is an opportunity to reassess and respond to the region's connectivity needs that supports a recentring of economic activity to support vibrant and viable communities.

12 ### Challenge 3: Planning for a just transition and inclusive growth across the entire region

The Forth Valley continues to witness a proliferation of housing developments that are car-dependent and reinforce longer journeys by private vehicle rather than shorter journeys within the community by active travel or public transport. Embracing the concept of '20-minute neighbourhoods', there is an opportunity to build on the behaviour changes witnessed through the pandemic to support population centres that adapt to more agile ways of working, connecting communities that are healthier, greener, and more prosperous.

13 ### The trilemma presents three headline questions that should be considered:

i   Which current practices must we stop, which emerging ones must we accelerate, and which new ones must we initiate to transition the Forth Valley from carbon intensity to carbon neutrality?

ii How can better connectivity across the Forth Valley support changes to the way in which we work, considering both the Covid-19 crisis and the Climate Emergency to improve the productivity of our people and places?

iii. What changes must we make to our transport networks to support sustainable, inclusive growth and ensure that all communities across the Forth Valley are afforded the opportunity to benefit from the new technologies and opportunities afforded by the move to Net Zero?

Why does the Forth Valley need a Connectivity Commission?

Perhaps more than any other public service, transport is about crossing boundaries.

The Forth Valley lies at the heart of Scotland. It is a diverse collection of small and medium-sized places, each with their own strong and distinctive identities, linked together by a wide variety of economic and social interactions. Thousands of people travel across the boundaries between these places every day for work, to access education and healthcare, and to meet each other. Given the Forth Valley is home to some of the country's most important industries, and has its two largest cities to either side, many more travel into, or through, the region every day too.

The region's three Local Authorities are working together more closely than ever on issues of common interest. The Stirling and Clackmannanshire City Region Deal[1], and the Falkirk Growth Deal[2], represent a significant portfolio of investment across the Forth Valley, aiming to boost jobs, growth and socially inclusive prosperity, making a significant contribution to improving Scotland's productivity while at the same dime driving down emissions. The three local authorities are developing a shared regional economic strategy which aims to bring added value through leveraging additional investment, enhancing prospects for sustainable employment and skills development as Scotland moves into a period of post-Covid recovery.

Ensuring that the region's transport and connectivity infrastructure can support this ambition is a central concern of the region's political leaders and representatives. Growth and opportunities can only be truly inclusive if they are accessible to all. Likewise, the development of the Forth Valley will only be sustainable if it is designed to address the needs of the whole region in a way that is consistent with a Net Zero future. An integrated approach to economic growth and connectivity is therefore essential to achieving a just transition that benefits communities all across the region.

The full Stirling and Clackmannanshire City Region Deal was signed in February 2020. The Heads of Terms Agreement for the Falkirk Growth Deal was published in December 2021.

1   https://stirling.gov.uk/council-democracy/stirling-clackmannanshire-city-region-deal/
2   https://www.falkirk.gov.uk/services/business-investment/falkirk-grangemouth.aspx

Why convene a Commission now?

We are at the beginning of a time of unprecedented change in how we travel around as part of our daily lives. Making a successful shift to Net Zero is essential if we are to reduce our emissions and avoid the worst impacts of climate change, and to ensure a Just Transition to a future economy that is fairer and more inclusive as well as greener.

The Scottish Government declared a climate emergency on 14 May 2019. In her statement to Parliament that day[3], Climate Change Secretary Roseanna Cunningham MSP said.

> *"There is a global climate emergency. The evidence is irrefutable. The science is clear. And people have been clear: they expect action. The Intergovernmental Panel on Climate Change issued a stark warning last year: the world must act now. By 2030 it will be too late to limit warming to 1.5 degrees."*

Transport is one of the most difficult sectors to decarbonise. It accounts for almost 40% of Scotland's carbon emissions, a figure that has hardly changed since 1990, the year we take as the baseline in calculating the emissions reductions required to address climate change. Of that 40%, around two thirds comes from cars, vans and lorries. There is no doubt, then, that reducing the environmental impact of road traffic is by far the most important transport problem facing us at national- and global- level.

The pace of change required to address this problem arises from two intertwined issues. First is the dependence of our current economy on road transport to supply the connectivity it needs to function[4]. About 65% of the journeys people made in Scotland before the pandemic were in cars or vans. In contrast, the number of trips we made by public transport is tiny: around 8% by bus, and 3% by rail. Covid-19 has further reduced the proportion of trips we make by public transport, so the scale of the challenge in changing how we move around is clear.

Second is the timescale over which we must deliver decarbonisation to meet the targets arising from the Paris Agreement, COP26 and other international climate change commitments. Scotland's target of reaching Net Zero by 2045 is extremely demanding in itself, and one of the most ambitious in the world. But the 'milestone' target of reducing emissions by 75% compared to 1990 levels by 2030 is perhaps even harder to meet. Given the average life span of a car is around 14 years, even if we stopped the sale of new petrol and diesel vehicles tomorrow, we could not achieve our emissions targets through technology alone. We have to change our travel behaviour too.

The Scottish Government published its updated *Climate Change Action Plan*[5] in December 2020, which introduced the critical commitment to reduce the total number of car kilometres in Scotland by 20% by 2030. The need to reduce the overall distance we travel by car is an essential component of meeting Net Zero[6], because even if we decarbonise the vehicle fleet in time to meet our Net Zero targets, the embedded carbon in the vehicles themselves and their supply chain means we will have to make do with fewer of them in future.[7] Reducing the number of car kilometres by 20% as set out in the Scottish Government's strategy[8] of January 2022 is an essential first step towards this.

In addition to the environmental impacts of the car, there is the social justice dimension to consider. Differential access to transport services between places and individuals is an important driver of inequality. Just under 30% of people in Scotland have no access to a car[9], and so are reliant on public transport, walking and cycling for their mobility needs. The location of jobs and vital public services in locations that are hard to reach without a car is

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3   https://www.gov.scot/publications/global-climate-emergency-scotlands-response-climate-change-secretary-roseanna-cunninghams-statement/

4   https://www.transport.gov.scot/publication/transport-and-travel-in-scotland-results-from-the-scottish-household-survey-1/4-personal-travel/

5   https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/

6   https://www.transport.gov.scot/publication/a-route-map-to-achieve-a-20-per-cent-reduction-in-car-kilometres-by-2030/

7   https://www.sciencedirect.com/science/article/abs/pii/S0965856421001981

8   https://www.transport.gov.scot/publication/a-route-map-to-achieve-a-20-per-cent-reduction-in-car-kilometres-by-2030/

9   https://www.gov.scot/publications/scottish-household-survey-2019-supplementary-analysis/pages/6/

the most important example of how the failure to provide high quality connectivity with a range of transport options impacts negatively on life chances and quality of life.

The scale of the challenge involved in decarbonising the transport system means that the transition to Net Zero connectivity needs to be managed extremely carefully, not only to minimise disruption but also to ensure that the new networks and services that emerge provide a fairer distribution of resources than at present, and allocate the costs of dealing with climate change appropriately. The Scottish Government appointed a 'Just Transition Commission' to advise on how to best achieve this. Its first 'Key Message'[10] was that society should:

"Pursue an orderly, managed transition to Net Zero that creates benefits and opportunities for people across Scotland."

This message is crucial. Whilst it might seem that using our cars less, having fewer of them overall, and making more use of buses, trains, walking and cycling is a 'difficult' transition for many people to make, it is in fact an enormous opportunity to improve outcomes across the economy, environment and society. The more people that use public transport, the less it costs to run and the better the quality of service is. The more we walk, wheel and cycle the healthier we are both physically and mentally, and less is the burden placed on health and social care.[11] The more that people are able to fulfil their everyday needs without using a car, the more of their spending power is retained in local communities. The safer the roads in our local communities are, the more attractive they become as places to live.

Transport Scotland's National Transport Strategy 2[12], published in February 2020, adopted a new vision for transport that focused the direction and impact of policy and investment choices towards four key priorities: Reduces Inequalities, Takes Climate Action, Helps Deliver Inclusive Economic Growth and Improves our Health and Wellbeing. Or, as the Just Transition Commission[13] put it,

"The transition offers an opportunity to build a low-carbon transport system that actively promotes equality, allowing people convenient access to the services they need. Good, affordable transport can enable people to access jobs, education and recreational opportunities. All of this helps build wellbeing and can contribute to raising household income and lifting people out of poverty." (original emphasis).

Scotland's transition to Net Zero will not happen overnight. There are medium- and long-term targets, and a clear blueprint for what a successful transition will look like. As headline policy goals, public funding opportunities and private investment all respond to this shifting national landscape, it's critical that the Forth Valley responds appropriately. A regional approach to connectivity will bring additionality by unlocking the region's full productive capacity. Success requires a clarity of vision and a genuine commitment to doing things differently. The Commission is therefore a timely intervention to catalyse that conversation.

10 https://www.gov.scot/publications/transition-commission-national-mission-fairer-greener-scotland/documents/ page 14.

11 https://www.euro.who.int/en/health-topics/environment-and-health/Transport-and-health/activities/guidance-and-tools/health-economic-assessment-tool-heat-for-cycling-and-walking

12 https://www.transport.gov.scot/publication/national-transport-strategy-2/

13 https://www.gov.scot/publications/transition-commission-national-mission-fairer-greener-scotland/documents/ page 30.

What are the critical connectivity issues facing the Forth Valley?

The current form of the transport networks in the Forth Valley, and how they shape everyday life in its local communities, is a picture of Scotland in miniature. The region benefits from strategic road and rail networks that have experienced concerted and significant investment in recent years including motorway upgrades, rail electrification and new trains. Locations with good access to these strategic corridors have seen sustained growth in housing development given their high degree of accessibility to most areas of the central belt.

In contrast, those communities reliant on the bus have seen service levels fall as in many similar places across the country. Younger people, low-income groups and those with limited physical mobility are more likely to be reliant on the bus than others. Bus and train fares have increased faster than the cost of motoring, further disadvantaging people in fragile and remote communities who are either ineligible for concessionary travel and/or dependent on dwindling service frequencies. The rise of internet retailing combined with continued expansion of out-of-town sites has hollowed out the region's urban centres and reduced the range of opportunities open to those without a car. The long-term trend to lower bus use means that services have been gradually reduced to meet demand not just in terms of their coverage, but also in the times of day at which they operate.

In terms of car ownership and use, once again the Forth Valley closely mirrors experience across Scotland as a whole. Data from the last census showed that the region's population was slightly more likely to have cars available, and to use them, than the Scottish average. One area of contrast, however, is in use of the bus to travel to work, where the share of trips was only half that of the

Scottish average. Given the importance of the bus to local trips, this perhaps underlines one particularly distinctive challenge facing the region: unlike the major cities with their strong cores and concentrated employment patterns, the Forth Valley is a 'polycentric' region of several small- and medium-sized places, with complex trip patterns more difficult to serve by public transport.

The location of key employment centres adds to this complexity, and the potential for inequality in access to jobs. Several of the region's major employers are sited at some distance from its town centres and public transport hubs: the Grangemouth petrochemicals cluster, which supports in the region of 14,000 jobs, is on the edge of a town without a railway station; the University of Stirling campus (1,700 staff and 16,000 students, a significant proportion of whom live throughout the Forth Valley) is 2.5 miles from the city centre and its bus and train stations. Forth Valley Royal Hospital employs up to 4,500 staff, while serving a health board of population of 306,000. Although centrally located in the region and adjacent to a motorway junction, the hospital site is three quarters of a mile from the nearest railway station, a difficult walk for many people requiring medical care.

Travel to Work Mode Share 2011
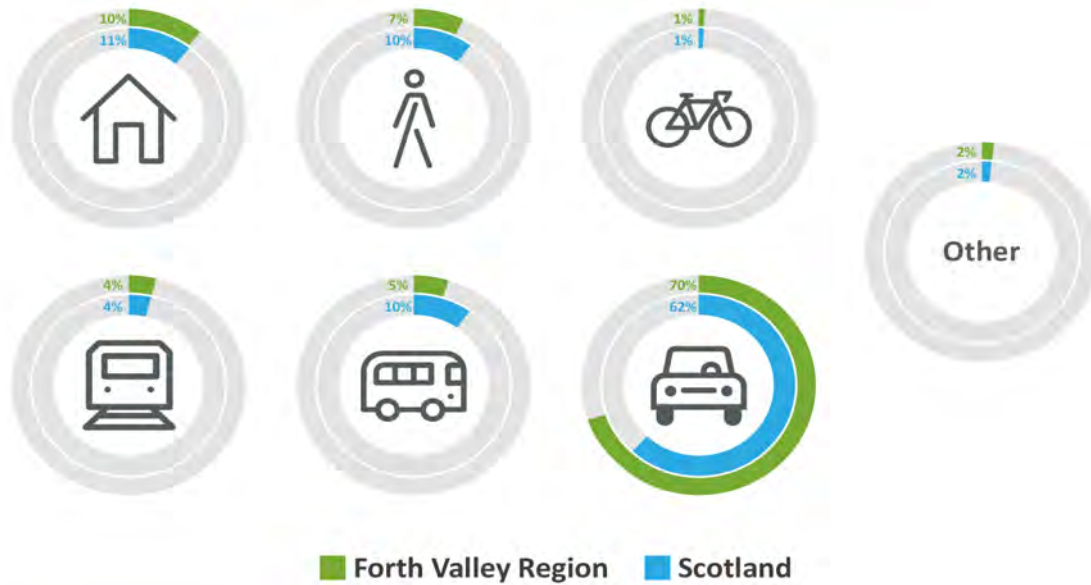
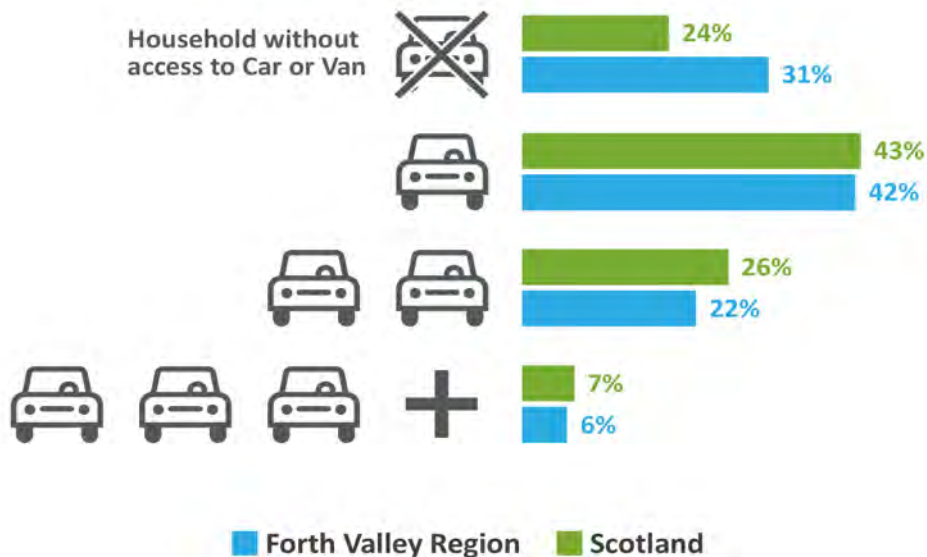**Car or Van availability per household 2011**

Fig 2: Car or van availability per household, and travel to work mode share (2011)
Source: Transport Scotland (2020)[1]

1   https://www.transport.gov.scot/media/47203/stpr2-forth-valley-case-for-change-draft-report-for-publication.pdf

Facing the future

There is no doubt that reconfiguring the transport system to meet the interlinked policy objectives of achieving decarbonisation and improving the fairness of the economy is a major challenge. Whilst many aspects of the transformation required are common to all parts of Scotland, the Forth Valley has its own distinctive context against which policy choices must be made. We define this as a 'trilemma' facing the region; in essence a set of three interconnected challenges that can only be solved by tackling them together, as a system:

Challenge 1: Securing transformation from a Carbon Intensive to Net Zero Region

The Forth Valley's industrial base is one of Scotland's economic hotspots. The activity centred in and around Grangemouth represents around 4% of Scotland's total GDP1 and is a major source of regional employment. Ensuring its continued role as an anchor for the regional economy is an issue at the heart of the Forth Valley's transition to Net Zero, and at the centre of the Falkirk Growth Deal. Investment in the future of Grangemouth's industry, as part of a transition away from a carbon-intensive economy, has the potential to catalyse the reshaping of the region's economic footprint through the pioneering of innovative new technologies and services. However, in doing so these new opportunities need to be available to all, including those overlooked by the current transport system. A genuinely integrated system would better connect Grangemouth and the region's other principal economic centres with communities across the Forth Valley (and neighbouring regions), including communities and demographics currently excluded due to geography or prohibitive travel costs, to promote an economic transition that is fair and inclusive.

Challenge 2: Supporting people and their places to be more productive

Stirling, Falkirk and Clackmannanshire are well-connected to surrounding economic centres, in particular the Glasgow City Region and the Capital City Region in and around Edinburgh. In many cases it is easier to travel in and out of the Forth Valley to larger cities than it is to travel within or between local communities to access employment, or commercial or public services. As Scotland's town and city centres look to recover following the Covid-19 pandemic, and assess their future in an increasingly digital economy, there is an opportunity to reassess and respond to the region's connectivity needs in a way that supports a recentring of economic activity to support vibrant and viable places.

Challenge 3: Planning for a just transition and inclusive growth all across the region

Intersected by major roads and motorways connecting larger urban centres, the Forth Valley has witnessed a proliferation of housing developments that are car-dependent and reinforce longer journeys by private vehicle, rather than shorter journeys by public transport or active travel within the local community. As the Scottish Government develops the National Planning Framework 4, which will lead with a strong focus on '20-minute neighbourhoods', there is an opportunity to build on the behaviour changes witnessed through the pandemic. This will include considering how enhanced regional connectivity can support connected communities that are healthier, greener and more prosperous, and respond to more agile ways of working.

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1   https://www.petroineos.com/refining/grangemouth/

New job, new house, new car

John and Laura live in Bannockburn with their two young children. John works as a production engineer at INEOS Grangemouth and Laura is a teacher at Stirling High School. John usually starts on site early in the morning at 7.30 and so takes the couple's car to work. Given he sets off before the rush hour, it only takes him just over a quarter of an hour each way.

Laura takes the kids to breakfast club at their primary school, which opens at 8.00. To get to work, she can either walk just over two miles – which she does a couple of times a week when the weather's good – or take the bus. There's a gap in the timetable after 8.00 as the next bus doesn't leave until 8.38. Laura tries to drop the kids off early before their club's formal hours, because if the later bus doesn't arrive on time she'll be late for work.

Over the Easter holidays, Laura sees that a promoted post has become available at Alloa Academy. She knows some of the staff there so it's an ideal opportunity. Following the recruitment process, Laura is offered the job from the start of the new term in August. She can't wait to get started.

Unfortunately, getting there is not so easy. Although there's a direct bus, it also leaves Bannockburn at 8.00am which means if she can't drop the kids early then she won't get there on time, and unlike travelling to Stirling, the longer commute means she can't walk or call one of her friends for a lift into town is she needs to. When she realises driving to school would only take 20 minutes even during the busiest period, she buys herself a cheap car over the summer and looks forward to some extra time and less stress in the morning without having to juggle getting her own kids to school and catching the bus.

Laura soon settles into her new role and finds her new routine works well. Before Christmas, John also secures a promotion at work, and so the family considers moving house. With their eldest child now in Primary 7, Laura and John look for a house near a secondary school they think will be good for both of the kids. A brand new home just outside Larbert fits the bill: the drive has room for both of their cars and it's a few minutes closer to both of their workplaces. Laura looks forward to going to Edinburgh to meet with her old university friends more often too now that they're close to a station.

Key points

- Public transport services are fragile and timetables don't always reflect real world needs

- Women in particular often lead complex lives with a number of different demands that can be difficult to meet using public transport and active travel especially if reliability isn't very good

- There are still significant time savings to be had on many journeys by using a car despite congestion

- Key life events like getting a new job and moving house are crucial triggers for people to reconsider their transport choices, and are when the car versus alternatives question is thought through in detail.

Service quality and safety matter

Stacey is 19 and lives in Camelon with her family. She is a student enrolled at Forth Valley College on an HND programme and is aiming to transfer to The University of Stirling to complete a degree at the start of the next academic year. She also has a part time job at Asda in the centre of town.

Stacey loves her free bus pass as it enables her to travel to college and work without worrying about the cost. Although she likes the extra money working at Asda gives her, Stacey sometimes wonders whether it's the right thing to do. She usually has to accept a later shift to fit in with her college timetable and although there are generally quite a few buses to choose from so she doesn't have to wait long for one to come along, Stacey often feels unsafe waiting for the bus, especially in winter when it's dark. The journey itself is only 5 minutes long, but even this can feel a bit uncomfortable as she sometimes feels as if she's the only young woman who uses the bus at night on her own. Then there's getting home safely to think about too. No wonder so many people get friends and family to pick them up in the car from Tesco at the end of their shift. Brian is the only one who ever seems to come by bike, but then he's fit and likes to tell stories about near misses with the traffic every coffee break.

Camelon railway station is not too far away from home either, and on those days when there's a problem with the bus then that's an even quicker hop into town. But her pass doesn't work on the train and if she has an early class then the £3.50 return fare is an unwelcome surprise. It might not sound like a lot of money but it quickly adds up. Recently, Stacey has used the train during the day to visit Stirling a few times as she thinks about making the transition to university, so she knows all about the tickets available. A cheaper season ticket would make sense if she's going to be on campus every day, but that's unlikely. But even if she's there 3 days a week, that's about £80 per month she'd have to budget for. She could go by bus for free, but it can take up to 90 minutes and that means leaving the house at 7.00am to get to a 9.00am lecture in time. That seems daft, but maybe that's what people do given there seem to be so many empty seats on the trains she's been on.

Key points

- We tend to think of public transport provision in terms of technical aspects such as frequency, journey time etc but these don't reflect the complex choices that people make, especially with regard to personal safety

- Active travel, particularly cycling, just isn't seen as a realistic choice for many people at present due to safety concerns, the need for special kit, image etc

- The ticketing system and lack of integration across modes is recognised as a problem by lots of people who might change their behaviour in various ways if there was reform that made the system genuinely easy to use

- Forth Valley trains are often very empty, a sign of the difficulty in accessing the 'final mile' from station to key sites of employment, education and other services

Individual choices, collective outcomes

Joan and Ronnie are retired and have lived in Denny for 40 years. They've seen a lot of change in that time, most obviously the very many new houses that have sprung up around the area. They'd quietly hoped their daughter Chrissy would buy one, but she and her husband Campbell moved to Kippen as they preferred to be somewhere more rural. That was fair enough, because it was just as easy for them to get to their jobs at the University and Craigforth from there.

Both Joan and Ronnie like to remain active, and they use their bus passes to get out and about as much as they can. Before the pandemic, they'd go into Falkirk or Stirling a couple of times a week to look round the shops and meet friends. They'd quite often spend a couple of hours browsing and walking around, which was an easy way to be active, even in winter. But in the year before Covid-19, they found themselves going less often: some of the bigger shops had closed, and then their favourite café did too. Both thought of themselves as film buffs, so they often went to the cinema in both places too. That was relatively easy during the day by bus, but if they wanted to take their grandson Lewis to a film in Stirling after school, there weren't that many buses they could catch to get home, and if they missed one it was a long wait in the cold and dark.

They often wonder about giving up their car because they don't use it very much now, especially since they started ordering online rather than going to the supermarket once or twice a week. But the cinema was one of these things that was much easier to do by car, and they liked being able to drive out to see the family without having to rely on Chrissy coming to them. It feels like a big step to give up driving, doesn't it?

During the first lockdown, the couple didn't go out at all. Being used to ordering food online was a godsend, and so they felt quite safe knowing that what they needed would come to them. Plus, Chrissy would come out at least once a week to check they were ok and bring anything they'd forgotten. When restrictions were reduced in the summer they started to go out again. They thought they'd try the car to start with because that way they didn't have to worry about other people not wearing masks on the bus. Besides, all the DIY shops where Ronnie likes to have a look are out on the bypass now, aren't they? And parking's easy and free too.

Key points

- Transport is more than mobility, it is about connectivity and social interaction

- Despite the policy rhetoric, we have consistently undermined town centres, by continuing to promote out of town retail and not preparing for the shift to internet shopping

- Older people who have been used to driving all of their lives find giving it up challenging not just in terms of access to facilities, but also for issues of independence and physical and mental health

- Car use probably only needs to fall by around one fifth to achieve Net Zero. So which are the trips we should be focusing on, and why?

Growing pains

Best friends Isla from Dunblane and Suzy from London met studying environmental sciences at the University of Stirling. After they graduated, they both worked in a big consultancy firm for a couple of years, but didn't like the corporate culture very much. One Friday night out, their normal after work chat moved in a different direction when Isla said 'we could do a much better job doing this ourselves'. And so IsSu Environmental Solutions was born.

Like many start ups, the company's first few months were run from the pair's respective bedrooms. This didn't bother them too much, because much of the time they were out on the road meeting clients up and down the east coast of Scotland. The firm's first purchase was a small 4x4 for site access: when they were out and about, Suzy (who did most of the driving) often joked that theirs was the only one that ever seemed to venture off the road.

After a couple of years, any doubts about whether setting up on their own was the right thing to do were well and truly left behind. Business was good: good enough that the pair were able to take on their first member of staff. Then another. And then another. Soon they were a team of six, and at this point Isla and Suzy agreed that the firm now needed its own office as a base to work from.

The initial idea was to find a small space in Stirling city centre that was handy for both of them and the train now that some of their clients were further away, but they struggled to find anything modern that would suit. To get up and running, they rented a small space above an empty shop on King Street but it was far from ideal. Most of the other small environmental businesses like theirs seemed to be in proper offices, so Isla decided to do some research about what was available. She assembled all the information she could find about the locations similar firms were based at: lots of them seemed to be on office parks with glossy brochures not just about the quality of the accommodation but also the importance of parking and easy drive times to the airport as the key to being accessible to clients.

When they sat down to go through options, it occurred to Suzy that she and Isla were the only two people in the growing firm that lived locally; all the others travelled from Edinburgh or Glasgow. In fact, that was true of everybody on the shortlist for their last job opening too. That must be where most of the young graduates of the kind that they wanted to work with tend to live. Come to think of it, they all come to the office by train when they had to be there, didn't they? Suzy wondered whether they should think again about the whole thing and consider whether moving closer to Edinburgh might be the best answer. They had three months left on the King St lease, so they'd better get looking.

Key points

- Just as for households, businesses make location decisions at critical points in their 'life cycle', usually when they are growing (or shrinking) and/or need new kinds of accommodation or accessibility;

- You can have the best transport in the world, but unless the core product offering underpinning the economic or social interaction taking place, in this case the quality of the office accommodation, is also of high quality, then better transport is no guarantee of success;

- Ensuring the people you want to work for you are able to travel to the office easily is a key element in recruitment; post-Covid, with much wider experience of home working, tolerance of lengthy commutes may be much less, and this could become even more of an issue for many businesses in attracting staff;

- The Forth Valley is a set of interconnected places that is in itself part of a much wider labour market stretching across central Scotland. Growing firms need to think about their location for many reasons and the ease of commuting into, as well as out of, the Forth Valley is a critical issue for economic development.

Conclusion

The Forth Valley is at the heart of the Scottish economy, gateway to the Highlands and midway between our two largest cities. Long thought of as a place to pass through rather than a destination in its own right, the region is mobilising to maximise its appeal as an attractive place in which to live, work and play. Well-connected as the region is to other parts of Scotland, it remains the case that the current pattern of transport infrastructure and services means that it can be much easier to leave the Forth Valley than it is to move around between its communities.

Perhaps the biggest connectivity issue facing the Forth Valley is that its underlying geography- a collection of small and medium-sized localities, with variable levels of public transport provision – has encouraged successive waves of car-centric housing and shopping developments that do little to sustain and strengthen the quality of the local offer within those communities that is accessible by public transport and active travel. It is perhaps no wonder then that the region has a higher than average reliance on car use and lower than average use of public transport.

The division of the region into three local authorities in the 1990s has led to divergence in planning and policy agendas, despite the footprint of many of the region's economic and service hubs transcending historic or administrative boundaries. Current connectivity is built on a legacy of existing provision rather than a detailed, comprehensive understanding of the region's present and future economic needs, and especially how these needs will evolve as the Forth Valley's economy makes the transition to a Net Zero future.

Our evidence sessions explored the range of issues and opportunities facing the region given its fragmented connectivity inheritance. The Forth Valley has 350,000 residents, with a population density and distribution similar to Silicon Valley, but in many ways punches below its weight. Within easy striking distance of both Edinburgh's Capital City Region and the Glasgow City Region, Scotland's wider road and rail network enables those more prominent regional economies to expand their own reach into the Forth Valley. Unlocking the significant potential of the region to capitalise on opportunities presented by the transition to a Net Zero economy will require planning and the development of improved connections both locally through a significant increase the number of '20 Minute Neighbourhoods' for more sustainable living, but also regionally to link communities with the opportunities that will emerge to create a genuinely 'Just Transition'.

One area where the Forth Valley authorities are already well-aligned is in their shared ambition for a truly comprehensive, integrated Active Travel Network. Each authority has been developing its place proposition with active travel very much at the heart of its thinking, whether that's the excellent off-road routes along the region's canals, the sections of the National Cycle Network which run through the region or the myriad routes connecting its city, towns and villages, the Forth Valley is developing extensive off-road cycling and walking provision. However, greater cross-boundary integration is required here, where significant gaps in the network present barriers.

As our case studies demonstrate, a major failing of the Forth Valley's current pattern of connectivity options is the apparent lack of focus on low carbon transport options to connect the places where most people want to get to; economic hubs, education facilities and (to a lesser extent) health and social care provision. Moreover, increasing (and highly complex) fares, and concerns about the level of personal/pandemic safety on public transport, especially for women, contribute to a huge daily disparity between the supply of seats on the region's buses and trains, and the actual levels of demand for them. This overprovision of public transport capacity is both a challenge and potentially a significant opportunity for the region as it seeks to play its part in meeting Scotland's car use reduction targets.

As regional level working begins to develop, e.g. through the joint bid for the Bus Partnership Fund or with work further developing Sustrans' National Cycle Network these challenges can start to be overcome. There is a need to consider practical, lower cost and easier to introduce solutions such as strengthening the ability of passengers to make inter-modal switches between public transport, addressing both physical and timetabling barriers. There are some obvious 'quick wins' available: better lighting or more considered siting of bus stops can improve the experience of passengers, boosting confidence in the safety of public transport, and new technology means that a daily capped fare can be paid using a debit card.

However, as the region charts a longer-term course to Net Zero, it's clear that critical, strategic decisions will need to be taken on how the region's connectivity continues to evolve to enable a truly Just Transition. Only by working together, with a shared sense of purpose and determination, can this important player in Scotland's economy not only survive, but prosper for both its residents and the nation as a whole.

Emerging themes and early opportunities

- Easy to adopt solutions – such as improved lighting and plugging gaps in/between active travel networks – can be swiftly adopted to improve confidence in and experience of public transport and active travel system. In some instances, these can build on existing opportunities identified, e.g. by Scottish Canals, Sustrans etc.

- Longer term, better integration- between communities, services, modes of transport, funding, and forward planning – is needed to fully serve the region's polycentric makeup. How can public sector data be used more effectively to plan for services on a regional basis, reflecting regional – as opposed to local – needs? How can feasibility studies be improved to identify and address the needs of those with additional requirements to enable swift implementation?

- The shift to Net Zero will change the way we approach both work and community. Can higher level spatial planning play a role in supporting this, through better understanding long term trajectories and requirements of industry, access to services and the requirements of the general public? Is doing so an opportunity to consider not just the role of our infrastructure network- from heavy rail to active travel – but the way we plan for housing, retails, leisure, and the push for 20 minute neighbourhoods.

What Next?

Our collective response to the Covid-19 pandemic, driven principally by the Scottish Government's guidelines and the public's response to them, has demonstrated, emphasised and continues to encourage a whole new approach to how we live, work and play. Whether it's a move away from the morning peak — on roads, rails, in buses or on bikes — or a shift to a hybrid working week, we are witnessing an unprecedented scale of change to the demand for quality transport connectivity.

Simultaneously, we must take on the potentially even more disruptive challenge of the Climate Emergency and ensure that our transport system not only plays its part in decarbonising our economy and lifestyles, but that it actively supports other sectors, e.g. education, industry and the social economy to make their contribution to this systemic challenge. Enhancing connectivity is therefore critical step on our journey to Net Zero.

Maintaining the status quo is simply not an option. By doing nothing to improve the Forth Valley's transport connectivity, we will not only fail to meet the changing demands of the regional economy but will also fall foul of Scotland's world-leading ambitions to tackle the climate Emergency head on. The answer is to develop a range of transformative proposals to enable the Forth Valley to take its place in the vanguard of Scotland's journey to Net Zero.

In the past, the Forth Valley has allowed its pattern of transport provision, particularly its infrastructure, to be designed and influenced in the main by forces outside the region to mixed effect. As Scotland looks towards a Net Zero future, we have an opportunity to design the region's connectivity according to the needs of its own communities, both large and small, and to fix past mistakes, leverage increased levels of investment, and drive new revenue streams to support change and ensure that our network of economic, social and cultural arteries allow the lifeblood of the Forth valley to flow more easily.

This 'issues report' has identified the nature of the connectivity challenge facing the Forth Valley and indicated some emerging areas where initial work can begin to develop longer-term, regional level approaches. The Commission's second report will offer more detailed recommendations on the interventions needed to address the challenges and capture the opportunities of Net Zero and a Just Transition throughout the region.

Challenging Questions which arise from our Transport Trilemma:

1. Which current practices must we stop, which emerging ones must we accelerate and which new ones must we initiate to transition the Forth Valley from carbon intensity to carbon neutrality?

2. How can better connectivity across the Forth Valley support changes to the way in which we work, in light of both the Covid-19 Crisis and the Climate Emergency, to improve the productivity of our people and the quality of our places?

3. What changes must we make to our transport networks to support sustainable, inclusive growth and ensure that all communities across the Forth Valley are afforded the opportunity to benefit from the new technologies and opportunities afforded by the move to Net Zero?

Commission Membership

Bob Duff (Chair)
Bob Duff was CEO of Jacobs business in the UK, responsible for infrastructure spanning sectors in Oil and Gas, Pharmaceuticals, Nuclear, Transport, Water and Environment Solutions. Prior to joining the leadership team at Jacobs, Bob was Managing Director of infrastructure consultancy Babtie Group

Joan Aitken OBE
Joan Aitken OBE is a retired solicitor who served as Traffic Commissioner for Scotland from 2003 – 2019, regulating the bus/coach and road haulage industries. She currently chairs the Glasgow Bus Partnership Steering Group. She is a trustee of the logistics industries international charity Transaid and is a Fellow of the Chartered Institute of Transport and Logistics.

Lynn Blaikie
Lynn is a marketing professional, having worked with major companies in Scotland's high-tech industry and running her own highly successful company. She has been Head of Stirling University Innovation Park for 17 years and is responsible for attracting innovative tenant companies. Lynn is President & Acting Chief Executive of Forth Valley Chamber of Commerce, a board member of Forth Valley DYW, and a member of the University of Stirling's Enterprise Programme's Advisory Board. She is also a member of the IoD Central Scotland Committee.

Fergus Cloughley
Fergus Cloughley is Chief Executive Officer at Obashi, based in Falkirk. He is the co-author of the OBASHI Methodology and co-architect of the OBASHI Platform. He currently advises the World Economic Forum and its partner governments on a variety of data initiatives including Net Zero, Data Governance and Data for social good.

Professor Iain Docherty
Professor Iain Docherty is Dean for the Institute for Advanced Studies at the University of Stirling. His research interests focus on the interconnecting issues of public policy, institutional change and city and regional competitiveness, especially the role of transport in promoting economic development and environmental sustainability. Iain has worked with and advised a range of private sector, governmental and other organisations including governments and public agencies in the UK, Australia, Europe and North America.

Christie Frail
Christie Frail is a second year Social and Public Policy student at the University of Glasgow who has an interest in Regional Economies. She has recently completed a Summer Internship with Ross Martin as well as the Fuel Change team and joins the Commission to represent the views of young people, as convenor of the Young People's forum.

Pete Leonard
Pete Leonard is the Strategic Director for Place at Clackmannanshire Council. He joined the authority in in August 2019 from environmental charity Keep Scotland Beautiful. Prior to that, Pete was a director at Aberdeen City Council for over 12 years, following 17 years in the electricity supply industry.

Ross Martin
Ross Martin is an Adviser on Regional Economies, working with governments, national agencies, the private and social sectors to design, develop and deliver policy frameworks to support economic and environmental sustainability as the two sides of what he calls 'the currency of inclusive growth'. A long-standing advocate of strong regional policy, Ross has energetically driven its adoption, from both inside and outwith government at local, regional and national levels.

Stefanie O'Gorman	Stefanie is the Director of Sustainable Economics at Ramboll and is also a member of the Climate Emergency Response Group (CERG). She specialises in the integration of a wide range of costs and benefits within decision making; using a range of assessment techniques such as cost benefit analysis, cost effectiveness and multi-criterial analysis. Most recently she has focused on the economics of cities and urban settlements with a view to delivering valuable and tangible social and environmental outcomes through improved design and delivery of infrastructure, the creation of investable propositions, alongside significant stakeholder, community and third sector engagement.
Stuart Oliver	Stuart Oliver is Senior Manager for Economic Development & Communities at Stirling Council. His remit covers a wide range of Council services including Economic Growth, Culture and Events, Regeneration and Inclusive Growth and Community Development, leading these teams to meet Stirling Council's strategic aims and the needs of residents, communities, visitors and businesses in the wider Council area. He is an experienced economic development professional with particular specialisms in inward investment, destination marketing and place development.
Pete Reid	Pete Reid is the Acting Head of Economic Development at Falkirk Council, with responsibility for raising the Falkirk area's economic, place making and tourism profiles, delivering Business Gateway and employment support opportunities as well as the Council's commercial portfolio and asset investment programmes. A commercial Chartered Surveyor and active board member of the Supplier Development Programme, his property and economic development experience have helped to evolve Falkirk Council's regeneration, business engagement and tourism strategies over the past 5-10 years, including helping to lead on the delivery of significant place change and iconic projects such as the Kelpies.
David Reid	David Reid established social enterprise Fuel Change, a movement which engages the potential of our youth to fight the climate crisis. He is a former Vice-President of global professional services company Jacobs, where he was employed for 30 years as part of the Buildings and Infrastructure business. Whilst David has a transportation background, he worked across all infrastructure sectors within the company, including for five years as Head of Rail for Europe
Clara Walker	Clara Walker is Executive Director of Forth Environment Link. Trained in Environmental Management, Clara has worked in the public and third sector for the past 25 years, primarily in communication, engagement and partnership development. For over ten years she has been in leadership roles within the third sector, driving forward climate action at a local, regional and national level across the active travel; food and growing; and circular economy agendas.

The Secretariat to the Commission was provided by Laura Calder and Stephen Jarvie from Forth Valley College, and Matthew Francis, from the University of Stirling.

Evidence

The Commissioners with to thank those individuals and organisations who have provided written and oral evidence to inform its work.

1Future Group	Alexander Dennis Limited	Cisco	Clackmannanshire Council
Driven2Deliver	Diageo	Falkirk Council	Fife Council
First Bus	Forth Ports	Ineos	ScotlandIS
Scotrail	Scottish Canals	Stirling Council	The University of Stirling

1Future Group

The 1Future Group is a sub-group of the Forth Valley Connectivity Commission, established to ensure that the voice of the next generation of Forth Valley residents, employees, students and service uers is represented, considered and heard.

The group is convened by Christie Frail, a 19-year-old student who lives in Falkirk and also sits as a member of the Commission. Christie convened a group of six young people with mixed demographics from across the Forth Valley, prior to and following the Commission's evidence sessions to discuss matters raised by stakeholders, industry leaders, academia and fellow Commissioners. The group's name reflects the importance it places on a shared, inclusive future and the urgency presented by the Climate Emergency.

Membership of the 1Future Group:

Christie Frail (Convenor)	Ciara-Mae Ballantine	Erin Hendry
Jiyona Joseph	Sophie Leonard	Paige Rydeard

Engaging with communities

A Community Outreach project was conducted, supported by the three Local Authority Third Sector Interfaces, and Forth Environment Link, which sought to project and reflect the needs of Forth Valley's communities and the diverse range of organisations who represent them.

Engaging with SMEs

A questionnaire seeking feedback on critical connectivity challenges was circulated to local businesses through Forth Valley Chamber of Commerce.