



Connectivity

Final Report

April 2024

Topics: Education and Skills, Environment, Equalities, Housing and Communities, Poverty and deprivation

1. Connectivity

If we have limited connectivity, we have reduced choice and influence over desired activities and outcomes, how we travel to work, what roles we can apply for, how we socialise, access to local facilities, being able to work from home and access online services.

Connectivity has primarily been explored by focusing on physical or geographic and digital connectivity. A third dimension, social connectivity has been included reflecting the considerable influence social connectivity has on health and well-being, with the Covid-19 pandemic throwing a spotlight on the impact of poor social connectivity. Barriers to physical and/or digital connectivity can lead to decreased social connectivity, with research suggesting that loneliness and social isolation causes negative health outcomes.¹

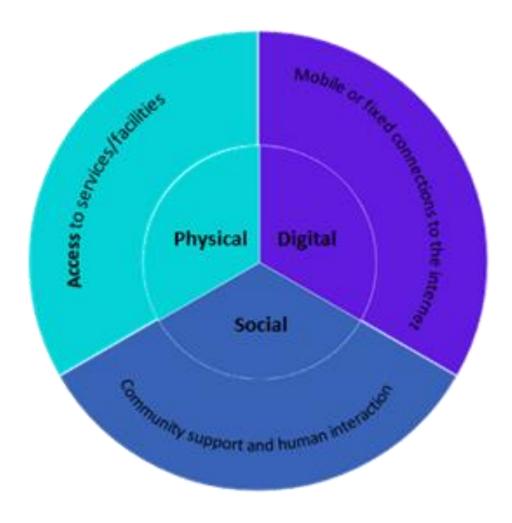


Figure 1.1 – Connectivity Dimensions

¹ Foster et al. (2023). Social connection and mortality in UK Biobank: a prospective cohort analysis, BMC Medicine, 21, 1-17. Available at: https://doi.org/10.1186/s12916-023-03055-7 (Accessed 20th December 2023).

2. Physical Connectivity

In Scotland, bus and rail use remains below pre-pandemic levels and there is no evidence of a significant increase in walking or cycling for transport purposes, despite measures aimed at encouraging alternative transport to car travel.² This picture is mirrored in Fife with driving remaining the main form of transport, accounting for 70% of journeys in 2022 (Figure 2.1).³ This increases to 80% for car/van as the usual method of transport to work, higher than the Scottish average of 68%, with 12% of journeys to work by public transport (7% rail, 5% bus) compared to 6% active transport (6% walk, 0% cycle). The perception of public transport in Fife has worsened, with barriers to public transport including cost, connections and reliability.

All Journeys in Fife in 2022

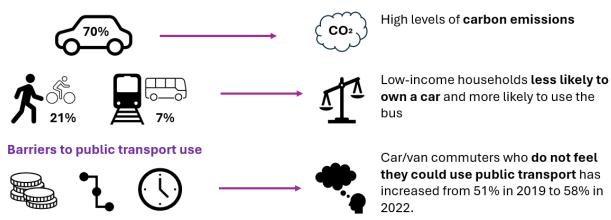


Figure 2.1 – All Journeys in Fife in 2022 (Scottish Household Survey, Transport Scotland and Fife Council, Our Place Survey 2023)

Fife Council has adopted the sustainable travel hierarchy, acknowledging the importance of car travel, however prioritising sustainable travel including active travel and public transport.

Substantial variation in physical connectivity is still apparent in Fife, with urban centres, towns and Forth Bridgehead well served by public transport, and areas such as West Fife villages and North East Fife being poorly served.⁴ Although public transport links to Edinburgh are adequate, journeys to other regions including Forth Valley and Perth take twice as long compared to car journeys. There is unequal access to car ownership and green transport options, with the cost of purchase a consistent barrier to electric vehicle ownership in Scotland, increasing from 36% of responses in 2019 to 52% in 2022.⁵ Settlements highlighted as detailing increased and reduced physical connectivity, including access to public transport, further/higher education, community and strategic health, shops/retail and employment opportunities are highlighted in the Local Development Plan 2 Evidence Report.⁶

² The Scottish parliament, <u>Key Issues for Session 6 - 2023 Update | Scottish Parliament (Accessed 20th February 2024)</u>

³ Transport Scotland (2024). Transport and Travel in Scotland 2022. Local Authority Table. Available at: Transport and Travel in Scotland 2022: Results from the Scottish Household Survey | Transport Scotland (Accessed 29th February 2024)

⁴ Local Transport Strategy for Fife 2023-2033 (Accessed 8th January 2024).

⁵ Transport Scotland (2024). Transport and Travel in Scotland 2022.

⁶ Local Development Plan 2 Evidence Report. Available at: <u>The-Evidence-Report-Council-version.pdf</u> (fife.gov.uk) (Accessed 1st April 2024).

Actions to improve physical connectivity in Fife include new transport links and internally and externally funded concession schemes. Examples such as the Levenmouth Reconnected Programme, including rail link scheduled to open in June 2024, and active travel and bus network connections. Other local examples include work supported by the Levelling Up Fund 2 including the Levenmouth Connectivity Project, which will connect the communities of Levenmouth with a walking, wheeling and cycling network that is accessible for all, and improved access in Riverside Park in Glenrothes. Fife Council funds a local rail concession scheme for people over 60 years old, providing discounted travel between Fife stations. Fife also supports the delivery of the Scottish Government's under 22 free bus travel scheme and over 60 concessionary card scheme.

In terms of active travel, Table 2.1 provides an overview of the percentage of residential locations in Fife within a 15 minute, 20 minute and 30 minute service area to the specified domain locations, as identified by the Scottish Living Locally Data Portal (SLLDP).⁷ Although the Fife average is 95.9% of residential locations within 10 minutes to public transport (20 MN), this ranges between datazone geography, from 53.3% to 100% of locations for public transport and 0% to 100% for high frequency public transport.⁸

Table 2.1 – Percentage of residential locations in Fife within specified minute neighbourhoods (MN), Scottish Living Locally Data Portal

Domain	% of Locations 15 MN	% of Locations 20 MN	% of Locations 30 MN	
Healthy Food Retail	38.9	50.8	64.5	
Public Transport	94.4	95.9	97.5	
High Frequency Public Transport	76.5	82.5	88.5	
Primary Healthcare	30.2	41.6	58.8	
Recreational	76.8	85.2	91.5	
Primary School	51.2	66.6	82.9	
Financial	70.3	78.3	85.8	
Pharmacy	42.6	54.9	70.3	
Accessible Public Open Space	86.2	89.5	92.6	
Social & Cultural	67.5	77.5	87.6	
Eating Establishments	42.8	53.5	67.4	
Super-Fast Broadband*	96.2	96.2	96.2	

⁷ The Scottish Living Locally Data Portal (SLLDP) was built by Jessica Hepburn and Jonathan Olsen (MRC/CSO Social and Public Health Sciences Unit, University of Glasgow) based on data from Olsen, JR., Thornton, L., Tregonning, G., Mitchell, R. (2022) Nationwide equity assessment of the 20-minute neighbourhood in the Scottish context: a socio-spatial proximity analysis of residential locations. Social Science & Medicine. Volume 315, 2022 (Accessed on the 10th January 2024)

⁸ Public transport measure is recorded as yes if there is any public transport stop within 800 metres, and high frequency public stops are those that had five or more stops an hour.

Disparity in active travel accessibility is evident between urban and rural areas at a Scotland and Fife level as shown in Figure 2.2, when examined across combined Scottish Living Locally Data Portal domains.

The Scottish Living Locally Data Portal⁹ is an interactive online map showing locations in Scotland whether they have access (15 minute, 20 minute and 30 minute) to domains: Healthy food retail, Public transport, High frequency public transport, Social & cultural, Primary healthcare, Pharmacy, Primary school, Eating establishment, Accessible public open space, Recreation and sports facilities, Financial and Superfast broadband (fixed).

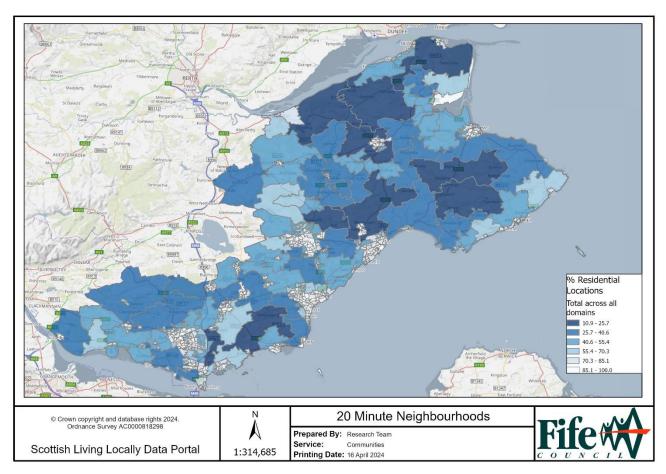


Figure 2.2 - 20 Minute Neighbourhoods (Scottish Living Locally Data Portal) - Percentage of residential locations across all domains

Figure 2.3 provides an overview of the difference in SLLDP domain accessibility between the most and least deprived datazones. This highlights that increased accessibility is detailed within the most deprived areas for all domains. Although unhealthy retailers such as fast food restaurants, pubs and bars were removed from the eating establishment domain analysis, these areas are also more likely to have increased density of these outlets that can adversely impact health, and socio-economic barriers to using facilities/services. The largest gap between most and least deprived is linked to healthcare provision (pharmacy, primary care) and social/cultural and financial facilities.

⁹ Scottish Living Locally Data Portal. <u>The Scottish Living Locally Data Portal (SLLDP) (arcgis.com)</u> (Accessed 24th April 2024)

Urban and town centres detail increased general accessibility, with areas on the periphery and rural areas poorer access. Infrastructure can also be considered a barrier to active travel, with roads and railway cutting centres off from the wider area. Increasing connectivity within and between small towns would enhance accessibility, promote active travel and reduce carbon emissions.

Scottish Living Locally Data Portal

20-minute neighbourhoods by data portal domain: deprivation comparison



Figure 2.3 – Percentage of residential locations within 20 minutes of the detailed domain, by SIMD20 quintile 1 (most deprived) and 5 (least deprived) (Scottish Living Locally Data Portal)

Fife has adopted a living locally context, following the same ambition as 20 minute neighbourhoods, but better reflecting the challenges and realities of living in rural areas 10. Three areas were chosen for Fife's Living Locally survey including an urban area, cluster of villages and rural area, with Interactive mapping 11 created to highlight areas of reduced and increased accessibility. Services/facilities were classified as essential, important or desirable as shown in Figure 2.4, with relevant active travel buffers applied.

Appendix A (page 13) highlights the percentage of Fife's postcode centroids within the Fife Living Locally context. Increased accessibility evident for cultural, leisure and community facilities and lower accessibility to health and Social Care provision.

¹⁰ Fife Council. Annex-7-Local-Living-and-20-Minute-Neighbourhoods-Storymap-v2.pdf (fife.gov.uk) (Accessed 3 March 2024)

¹¹ Fife Council Living Locally & 20 Minute Neighbourhood Analysis. Available at: <u>Local Living and 20-Minute</u> Neighbourhoods (arcgis.com) (Accessed 29th February 2024)

Key challenges identified for delivering local living include centralisation of key services, Infrequent, slow and expensive public transport, size of settlements and distance between them in some very rural areas, and lack of good quality, safe and direct active travel links between key destinations. Detailed qualitative analysis of the three pilot areas is available, outlining local service availability.

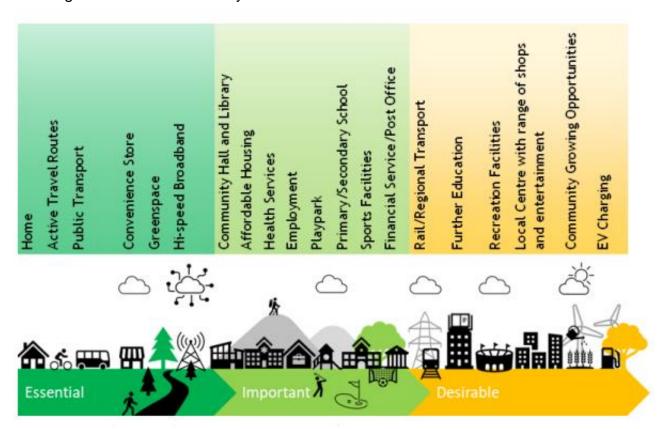


Figure 2.4 – Service and facilities category, based on 20 minute neighbourhoods¹²

We must continue to change, modernise and evolve services and the way we work to meet the challenges of the future, for example removing barriers to public transport and active travel due to health and disability. Embedding spatial network analysis into place design provides insight and understanding on how our communities/places are being supported, including areas of increased risk of transport poverty, and connectivity implications.

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¹² Living Well Locally Case Study: West Howe of Fife. Available at: West Howe of Fife (Accessed 4th March 2024)

3. Digital Connectivity

Digital connectivity has an impact on how people are supported, services delivered and community participation/engagement. In 2022, 22% of employed people (16+) in Fife reported working from home, compared to 14% in 2019. As more services move online, including chatbots and virtual assistants, and home and hybrid working become the norm, the requirement for consistent, reliable digital connectivity increases, with rural areas typically having more to gain from improved connectivity compared to urban areas.

Digital connectivity includes if and how people access digital technologies, through wired and non-wired networks, however it also includes how these networks and systems communicate and share information to provide consistent access. Fife has high fixed broadband availability, as shown in Figure 3.1, with 96.5% of residential premises in Fife in 2022 having superfast broadband availability. To of premises in Fife have gigabit capable broadband and 99.91% of geographic areas have 4G coverage, signal outdoors provided by minimum of one mobile network provider.

		Residential	All Premises
$(\overline{\mathfrak{M}})$	Superfast Broadband:	96.5%	96.0%
	Ultrafast Broadband:	64.1%	62.3%
	Full Fibre:	40.4%	39.0%

Figure 3.1 Fixed broadband availability

Internet Access & Use

Low-income households have lower levels of internet access with the average for Scotland 91%, however home internet access for households with a net annual income of between £6,001 and £10,000 was 69% in 2022, compared with almost all households (99%) with a net annual income of over £40,000. Local Scotland in Figure 15 Access is also influenced by tenure with homeowners having increased access compared to social housing. Free access to computers and the internet in Fife is available from facilities such as libraries, job centres and skills development offices.

Although younger adults continue to show increased internet access, with this category also accessing through smart phones more than 60+ years, there has been a significant increase in persons aged 60+ accessing the internet in Scotland, from 29% in 2007 to 76% in 2022. ¹⁶ Accessing the internet from home remains the prominent location, followed by internet on the move, with increased access via a smartphone in 2022. Online safety measures were less likely to be followed by persons 60+ years and those in areas of increased deprivation

¹³ Connected Nations 2022, Scotland Report (2022). OFCOM. Available at: <u>Connected Nations 2022: data downloads - Ofcom</u> (Accessed 12th January 2024).

¹⁴ ONS, 2021 Subnational indicators explorer. Available at: <u>Subnational indicators explorer - Office for National Statistics (ons.gov.uk)</u> (Accessed 12th January 2024).

¹⁵ Scottish Household Survey 2022. Available at: <u>Scottish Household Survey 2022: Key Findings - gov.scot</u> (www.gov.scot) (Accessed 12th January 2024).

¹⁶ Scottish Household Survey 2022. Available at: <u>4. Internet - Scottish Household Survey 2021 - telephone survey: key findings - gov.scot (www.gov.scot)</u> (Accessed 1st February 2014).

(20% most deprived). With 21.6% of Fife's population being 65+ years¹⁷, understanding how the different elements of connectivity impact on a rapidly ageing population is pivotal to reducing negative impacts of poor digital connectivity, including reducing online risks.

Data Poverty & Device Poverty

As part of the essential digital skills survey In 2023, 3% of adults in the UK claimed they had to give up internet or mobile data to be able to afford other bills, translating to an increase in people becoming digitally excluded due to the cost-of-living crisis.¹⁸ Other at-risk groups include those with disabilities, adults who feel less confident reading in English, adults who live with children and those in larger households.¹⁹ Device availability in Fife is unclear, with pockets of poor accessibility identified during the Covid-19 lockdown due to pupils requiring access for home learning. Further research is required on the extent of data and device poverty in Fife, including at risk categories and locations.

Digital Exclusion & Digital Literacy

Where data and device poverty are not having access to data and IT hardware and infrastructure, digital exclusion can be resultant from these factors and/or poor digital literacy. Research suggests that increased age and deprivation the higher the likelihood of digital exclusion, although there will be people who experience digital exclusion out with these parameters. Inspiring Scotland provides that one of the most challenging facets of tackling digital exclusion is the lack of conclusive data on who is affected.²⁰ The following factors have been identified by the Good Things Foundation²¹ as increasing the risk of digital exclusion and limited use including over 65 years, having a disability or health condition, and low-income households.

Being able to navigate digital technology, including accessing the required device, using the internet, assess and evaluate online information and communicate, requires digital literacy skills. Health & Social Care's five pillars of digital inclusion, emphasises the responsibility of both the individual and organisations/wider services in ensuring digital inclusion.²² Digital support in Fife is available through digital skills courses, community job clubs and volunteer support, as well as online support from Digital Fife.²³ These locations may also be warm spaces with public Wi-Fi.²⁴ With increased service delivery moving online, this will lead to further digital exclusion without action. The next Digital Strategy for Fife should reflect that digital connectivity influences people, place and the organisation, including actions to mitigate against digital exclusion.

¹⁷ Scotland's Census 2022. Available at: <u>Scotland's Census 2022 - Rounded population estimates | Scotland's Census (scotlandscensus.gov.uk) (</u>Accessed 21st February 2024).

¹⁸ 2023 Digital Consumer Index. Available at: <u>231122-lloyds-consumer-digital-index-2023-report.pdf</u> (lloydsbank.com) (Accessed 14th February 2024).

¹⁹ Data Poverty in Scotland and Wales. Available at: <u>01-FS_NEST_DPENG_Book_Ho3AqpW.pdf</u> (nesta.org.uk) (Accessed 26th February 2024).

²⁰ Digital Inclusion in Scotland, Inspiring Scotland (June 2020). Available at: <u>PowerPoint Presentation</u> (inspiringscotland.org.uk) (Accessed 1st February 2024).

²¹ Good Things Foundation. Available at: <u>Building a Digital Nation - Good Things Foundation (Accessed 1st February 2024)</u>.

²² Slater, A. and French, T. (2023) 'From pillars to practice: developing a framework for embedding digital inclusion in health and social care.' Digital Inclusion Programme. TEC, Digital Health and Care. Available at: https://tec.scot/programme-areas/digital-inclusion/resources/digitalinclusion-digital-pillar (Accessed 1st February 2024).

²³ Digital Fife. Available at: <u>Digital Fife v2 (Accessed 21st February 2024)</u>.

²⁴ Fife Digital Directory. Available at: Fife-Digital-Directory.pdf (Accessed 21st February 2024).

4. Social Connectivity

The Covid-19 pandemic highlighted the importance of social connectivity and how it impacts on health and well-being. Lack of physical connectivity such as poor connection of infrastructure means that people move out of their communities for work and social activities, further reducing social connectivity. The Place Survey 2023 shows that the perception of place differs across Fife, with Levenmouth and Cowdenbeath rating their area less positively, including social interaction and community and belonging, categories linked to social connectivity. In 2022, 23% of adults in Scotland reported feelings of loneliness in the last week, up from 21% in 2018.²⁵ People within the most deprived areas and disabled people are twice as likely to report loneliness. The highest levels of loneliness are in those aged 75 or older (29%) followed by those aged 16-24 years (24%).

Although the benefits of social connectivity are apparent, understanding what organisations and communities can do to support social relationships and connectivity is more complex. Research carried out by What Works Wellbeing²⁶ in 2018 and 2023 reviewed intervention types and influence on outcomes linked to social connectivity and wellbeing, with an overview provided in Figure 4.1. This highlighted that place interventions can have both a positive and negative impact on social connectivity outcomes.

Both community development and community hub intervention types had a strong positive or moderate positive impact on social relations, community wellbeing and individual wellbeing, whereas urban regeneration can have both a positive and negative impact. Alongside the positive impacts, events and neighbourhood design can have a negative impact on community wellbeing, with physical or perceived exclusion from events, potential loss of shared identity and negative perceptions of neighbourhood design being thought as problems being moved elsewhere. A gap in high quality research on placemaking and comparing urban and rural areas was highlighted. As services work together under the no wrong door approach (community assistance hubs) this will influence physical, digital and social connectivity as digital literacy and infrastructure will become increasingly important.

Understanding who and where poor physical connectivity is impacting social networks and opportunities may provide further insight into where digital interventions may need prioritised. Local communities are best placed to identify the connectivity needs of their local place, for example working with communications providers to shape the roll-out of digital infrastructure and local authority and third sector when exploring facilities to improve service delivery and social connectivity.

The balance/risk between reducing estate and climate obligations must be considered when improving connectivity and accessibility to services. The challenges of diverse urban and rural areas, socio-economic barriers, and the demand for greater digital inclusion remain.

²⁵ Scottish Household Survey 2022. <u>Scottish Household Survey 2022: Key Findings - gov.scot</u> (www.gov.scot) (Accessed 3 April 2024).

²⁶ What Works Wellbeing <u>WWW Review - Places Spaces (whatworkswellbeing.org) (</u>Accessed 21st February 2024).

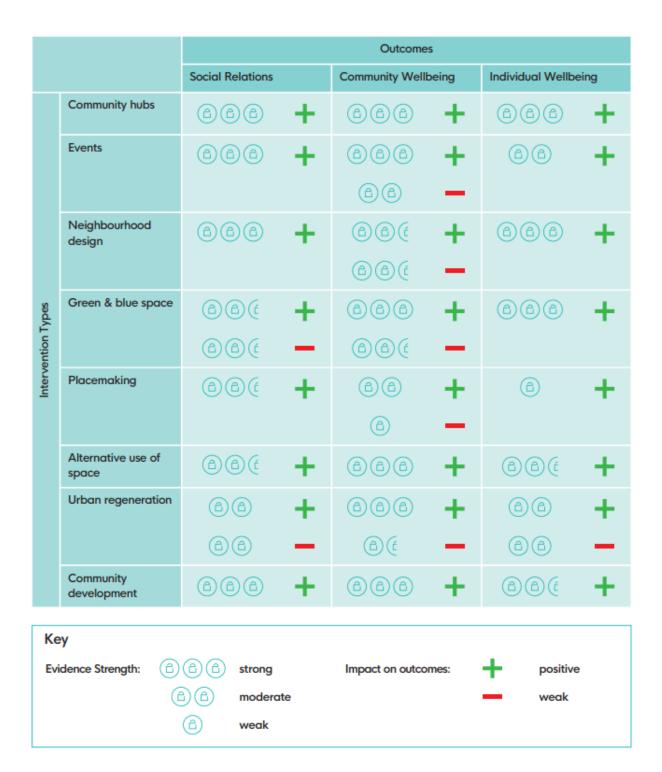


Figure 4.1 – Key findings from reviews from 1997 – 2022 (What Works Wellbeing)

5. Key Messages

- Like the rest of Scotland, Fife continues to be road dominated impacting carbon emissions, with car the prominent travel mode. Fife Council has adopted the sustainable travel hierarchy, acknowledging the importance of car travel, however prioritising sustainable travel including active travel and public transport.
- Substantial variation in physical connectivity is still apparent in Fife, with urban centres, towns and Forth Bridgehead well served by public transport, and areas such as West Fife villages and North East Fife being poorly served. Actions to improve physical connectivity in Fife include new transport links and internally and externally funded concession schemes.
- Increased active travel accessibility is evident within the most deprived areas, reflecting the urban composition of these areas. This highlights increased physical access but does not represent other socio-economic barriers to use/support, with these areas more likely to have increased density of outlets that can adversely impact health.
- Fife has adopted a living locally context, following the same ambition as 20 minute neighbourhoods, but better reflecting the challenges and realities of living in rural areas. Key challenges identified for delivering local living include centralisation of key services, Infrequent, slow and expensive public transport, size of settlements and distance between them in some very rural areas, and lack of good quality, safe and direct active travel links between key destinations.
- Fife has good fixed broadband availability and 4G coverage, supporting the increasing reliance on digital connectivity. Although digital technologies have been developed to facilitate social connectivity, the older age group, who are at an increased risk of poor social connectivity, are also more likely to be digitally excluded.
- Understanding the Impact of digital connectivity on an ageing population is pivotal to reducing negative factors including social isolation and online risks. Many more people will need health and social care support in the future, including care at home, increasing the requirement for both physical and digital connectivity.
- There is increased risk of people experiencing digital exclusion due to the cost-ofliving crisis, with over 65 years, having a disability or health condition and low-income households having higher risk. Further research is required on the extent of data and device poverty in Fife, including at risk categories and locations.
- Community hubs have a strong positive impact on social relations, community wellbeing and individual well-being, with this providing further support for providing services through joined up community approaches.
- Areas with poor physical connectivity also highlighting worsening social connectivity, with Levenmouth and Cowdenbeath residents rating their area less positively, including social interaction and community and belonging categories.
- As services work together under the no wrong door approach (community assistance hubs) this will influence physical, digital and social connectivity as digital literacy and infrastructure will become increasingly important as more services move online.
- The balance/risk between reducing estate and climate obligations must be considered when improving connectivity and accessibility to services.

Appendix A: Fife Local Living Indicators

The table below provides a breakdown of the percentage of postcode centroids²⁷ within the indicator service areas. The service areas have been chosen as per Fife Living Locally supporting report.²⁸ This provides a generalised Fife overview of accessibility, with increased accessibility evident for cultural, leisure and community facilities and lower accessibility to health and Social Care provision. Please note that analysis is less accurate for rural postcodes due to the increased geographic size and doesn't reflect the quantity or quality of facilities within the service areas.

		5 Minutes 10 Minut		inutes	
Theme	Indicator	Walk	Cycle	Walk	Cycle
Public Transport	Public bus stops – bus stance	86.3%			
	Rail station			13.9%	51.4%
Cultural, Leisure & Community Facilities	Cultural & Leisure Facilities			48.7%	79.8%
	Food & drink sector			79.8%	96.1%
	Sports facilities			70.6%	94.9%
	Community facilities			77.4%	97.2%
Greenspace,	Play Park	73.2% (500m)			
Play Park & Growing Opportunity	Community greenspace	60.1% (250m)			
	Community growing opportunity			23.7%	66.2%
Financial	Financial			73.3%	93.0%
Recycling & Waste	Local Recycling	54.2%			96.2%
Health & Social Care	GP			36.7%	81.0%
	Pharmacy			52.8%	87.2%
	Healthcare			18.4%	55.7%
	Dental Surgery			40.1%	75.6%
	Social care			47.1%	82.6%
Education	Primary school		89.7% (1 mile)	67.0%	
	Secondary school		59.2% (2 mile)	9.3%	
	Further education			7.0%	29.8%

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²⁷ National Records of Scotland. Available at: <u>2024-1 Scottish Postcode Directory Files | National Records of Scotland (nrscotland.gov.uk)</u> (Accessed on 1st April 2024)

²⁸ Annex-7-Local-Living-and-20-Minute-Neighbourhoods-Storymap-v2.pdf (fife.gov.uk)

Appendix B: Resources

The following resources are available to support further exploration of the findings in this report:

Product	Туре	Period	Source
Scottish Living Locally Data Portal	Web App	2023	The Scottish Living Locally Data Portal (SLLDP) (arcgis.com)
Scottish Living Locally Data Portal – Fife Overview	HTML	2023	Scottish Living Locally Data Portal – Fife Overview
Fife Council 20- Minute neighbourhoods	Web App	2023	20-Minute Neighbourhood Analysis (arcgis.com)
Fife Local Living & 20 Minute Neighbourhoods	Storymap	2023	Annex-7-Local-Living-and-20-Minute- Neighbourhoods-Storymap-v2.pdf (fife.gov.uk)
Transport Scotland	Data	2022	Transport and Travel in Scotland 2022 Transport Scotland
Ofcom, Connected Nations	Data	2022	Connected Nations 2022: data downloads - Ofcom
Scotland's Census	Data	2022	Scotland's Census 2022 - Rounded population estimates Scotland's Census (scotlandscensus.gov.uk)
Fife Local Development Plan (LDP2) Evidence Report	Report	2023	Local Development Plan Evidence Report

About this report

Fife Council Research and Insight Team works on prioritised projects to deliver strategic insight for the Council and community planning partners in Fife.

We aim to deliver engaging high-quality general insight for those involved in delivering public services across Fife.

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Important Notes on this Report

- 1. This report is a companion document to the Fife Strategic Assessment 2024.
- 2. This document explores issues around physical, digital and social connectivity in Fife.