ICE response to the Union Connectivity Review Call for Evidence

December 2020

Introduction

Established in 1818 and with over 95,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

Our response to this call for evidence does not answer every question, however it has been informed by ICE's previous body of work and has been developed with relevant input from ICE regions. In addition, polling was conducted on behalf of ICE by YouGov in England, Northern Ireland, Scotland and Wales to better understand how the public perceive transport connectivity between UK nations.

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Q2. Please provide any information you hold about current multi-nation journeys within the United Kingdom.

Polling was conducted on behalf of ICE by YouGov in England, Northern Ireland, Scotland and Wales to better understand how the public perceive transport connectivity between UK nations and to better understand motivations for future travel patterns at a multi-nation level. Respondents were asked to consider their travel patterns before the first lockdown due to Coronavirus in the UK (i.e. before March 2020). The results are summarised below by nation, and we would be happy to discuss the data in more detail if requested.

England

Figure 1 shows that the majority of adults in England find it 'very easy' or 'fairly easy' to travel between England and Scotland (57%) and England and Wales (60%). 40% of English adults find it 'very easy' or 'fairly easy' to travel between England and Northern Ireland.[1] Only 4% of English adults found it 'very difficult' or 'fairly difficult' to travel between England and Scotland and England and Wales; this increased to 8% when considering travel between England and Northern Ireland.

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[1] All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 2089 adults. Fieldwork was undertaken between 17th - 18th December 2020. The survey was carried out online. The figures have been weighted and are representative of all English adults (aged 18+).

Figure 1: Before travel restrictions came into place, in general, how easy or difficult would you say it was to travel between England and each of the other nations of the UK?

Ease of travelling between nations	Very easy	Fairly easy	Fairly difficult	Very difficult	Don't know	Not applicable – I didn't generally travel between England and this nation	Net: Easy	Net: Difficult
England and Scotland	43%	14%	3%	1%	3%	36%	**57%**	**4%**
England and Wales	47%	13%	3%	1%	3%	33%	**60%**	**4%**
England and Northern Ireland	19%	21%	7%	2%	5%	47%	**40%**	**8%**

When asked to consider future travel between England and other UK nations (Figure 2), 65% of English adults stated that a cheaper cost of travel would motivate them to travel more frequently. 39% of English adults would be motivated to travel more frequently if there were faster journey times, with 35% stating that a more direct journey (i.e. fewer changes) would encourage them to travel to other UK nations. 21% of English adults would be motivated to travel more frequently to other UK nations if their journey emitted less carbon dioxide.

Figure 2: Thinking about any future travel between your nation of residence and other nations of the UK, which, if any, of the following transport improvements would motivate you to travel more frequently?
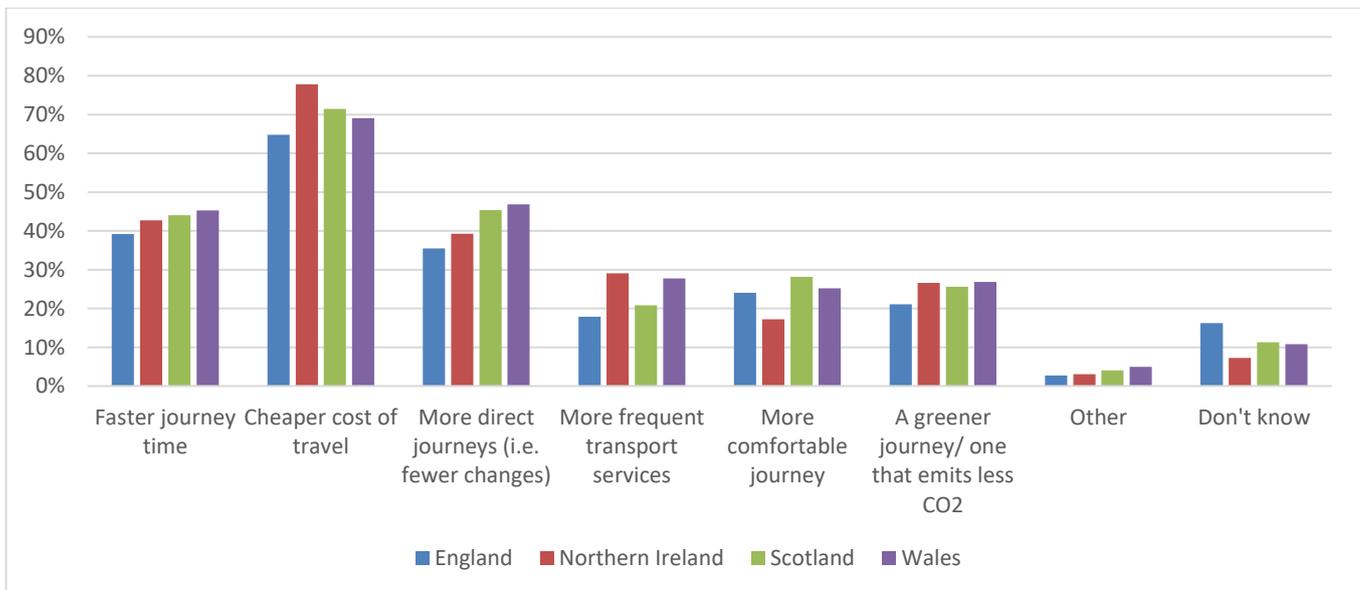
48% of English adults agree that England has good transport connectivity with other nations of the UK (Figure 3). Broken down by English region, 57% of adults in London agree that England has good transport connectivity with other nations of the UK, while 44% of adults in the North of England agree with that statement. One-fifth of adults in the North of England disagree that England has good transport connections with other nations of the UK.

Even if transport connectivity between England and other nations of the UK was improved, 28% of English adults would be unlikely to travel to other UK nations.

46% of English adults stated that they will be returning to their normal travel patterns to other UK nations after the end of Covid-19 restrictions, with 11% stating that they would not.

31% of English adults agreed that better transport connectivity between England and other UK nations would have a positive impact on their quality of life.

Figure 3: To what extent do you agree or disagree with each of the following statements (England)?

Agree/disagree statements	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	**Net: Agree**	**Net: Disagree**
England has good transport connectivity with other nations of the UK	7%	41%	25%	12%	4%	11%	**48%**	**16%**
Even if transport connectivity is improved, I would be unlikely to travel between England and other nations of the UK	8%	20%	27%	24%	13%	8%	**28%**	**37%**
I will be returning to my normal travel patterns to other nations of the UK after the end of Covid-19 restrictions	14%	31%	31%	7%	4%	12%	**46%**	**11%**
Better transport connectivity between England and other nations of the UK would have a positive impact on my quality of life	8%	23%	39%	13%	8%	9%	**31%**	**21%**

Northern Ireland

NI adults find it easier to travel between Northern Ireland and other UK nations than English adults find it to travel between England and other UK nations (Figure 4).[2] 78% of NI adults say it is 'very easy' or 'fairly easy' to travel between Northern Ireland and England, 74% say it is 'very easy' or 'fairly easy' to travel between Northern Ireland and Scotland, while 56% find it 'very easy' or 'fairly easy' to travel between Northern Ireland and Wales. Only 5% of NI adults consider it 'very difficult' or 'fairly difficult' to travel between Northern Ireland and England and Northern Ireland and Scotland; this increases to 12% when considering travel between Northern Ireland and Wales.

Figure 4: Before travel restrictions came into place, in general, how easy or difficult would you say it was to travel between Northern Ireland and each of the other nations of the UK?

Ease of travelling between nations	Very easy	Fairly easy	Fairly difficult	Very difficult	Don't know	Not applicable – I didn't generally travel between Northern Ireland and this nation	Net: Easy	Net: Difficult
Northern Ireland and Scotland	55%	19%	3%	2%	1%	19%	**74%**	**5%**
Northern Ireland and Wales	32%	24%	9%	3%	4%	28%	**56%**	**12%**
Northern Ireland and England	55%	23%	3%	2%	1%	16%	**78%**	**5%**

When asked to consider future travel between NI and other UK nations (Figure 2), 74% of NI adults stated that a cheaper cost of travel would motivate them to travel more frequently. 43% state that a faster journey time would motivate more frequent travel, while 27% would be motivated to travel more frequently to other UK nations if the journey they took emitted less carbon dioxide.

44% of NI adults agree that Northern Ireland has good transport connectivity with other UK nations, though 34% disagree (Figure 5). 58% of NI adults agreed that better transport connectivity between Northern Ireland and other UK nations would have a positive impact on their quality of life.

Only 13% of NI adults agreed that they would be unlikely to travel between Northern Ireland and other nations of the UK even if transport connectivity was improved.

65% of NI adults stated that they will be returning to their normal travel patterns to other UK nations after the end of Covid-19 restrictions.

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[2] All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 503 adults. Fieldwork was undertaken between 17th - 23rd December 2020. The survey was carried out online. The figures have been weighted and are representative of all NI adults (aged 18+).

Figure 5: To what extent do you agree or disagree with each of the following statements (Northern Ireland)?

Agree/disagree statements	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	**Net: Agree**	**Net: Disagree**
Northern Ireland has good transport connectivity with other nations of the UK	8%	37%	18%	24%	10%	3%	**44%**	**34%**
Even if transport connectivity is improved, I would be unlikely to travel between Northern Ireland and other nations of the UK	4%	9%	13%	29%	40%	4%	**13%**	**69%**
I will be returning to my normal travel patterns to other nations of the UK after the end of Covid-19 restrictions	25%	40%	17%	8%	3%	7%	**65%**	**10%**
Better transport connectivity between Northern Ireland and other nations of the UK would have a positive impact on my quality of life	28%	29%	28%	7%	4%	4%	**58%**	**11%**

Scotland

Figure 6 outlines that the majority (73%) of Scottish adults find it 'very easy' or 'fairly easy' to travel between Scotland and England.[3] There is expected variation in region, with 81% of adults in South Scotland stating that it is 'very easy' or 'fairly easy' to travel between Scotland and England, and 63% of adults in North East Scotland stating that it is 'very easy' or 'fairly easy' to travel between Scotland and England.

44% of Scottish adults find it 'very easy' or 'fairly easy' to travel between Scotland and Wales, with 46% of Scottish adults stating it is 'very easy' or 'fairly easy' to travel between Scotland and Northern Ireland.

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[3] All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 1000 adults. Fieldwork was undertaken between 17th - 22nd December 2020. The survey was carried out online. The figures have been weighted and are representative of all Scottish adults (aged 18+).

Figure 6: Before travel restrictions came into place, in general, how easy or difficult would you say it was to travel between Scotland and each of the other nations of the UK?

Ease of travelling between nations	Very easy	Fairly easy	Fairly difficult	Very difficult	Don't know	Not applicable – I didn't generally travel between Scotland and this nation	Net: Easy	Net: Difficult
Scotland and England	60%	13%	2%	1%	1%	23%	**73%**	**2%**
Scotland and Wales	29%	15%	7%	2%	2%	45%	**44%**	**9%**
Scotland and Northern Ireland	26%	20%	5%	1%	3%	45%	**46%**	**6%**

When asked to consider future travel between Scotland and other UK nations (Figure 2), 71% of Scottish adults stated that a cheaper cost of travel would motivate them to travel more frequently. 45% of Scottish adults would be motivated to travel more frequently if their journey was more direct (i.e. fewer changes), while 44% would be motivated to travel more frequently if their journey was faster. 26% of Scottish adults would be motivated to travel more frequently to other UK nations if the journey they took emitted less carbon dioxide.

48% of Scottish adults agree (20% disagree) that Scotland has good transport connectivity with other nations of the UK. Even if transport connectivity between Scotland and other nations of the UK was improved, 24% of Scottish adults would be unlikely to travel to other UK nations.

The majority (55%) of Scottish adults stated that they will be returning to their normal travel patterns to other UK nations after the end of Covid-19 restrictions.

43% of Scottish adults agreed that better transport connectivity between Scotland and other UK nations would have a positive impact on their quality of life. This was most prominent among younger Scottish adults, with 67% of Scottish adults aged between 18 and 24 stating that better transport connectivity between Scotland and other UK nations would have a positive impact on their quality of life.

Figure 7: To what extent do you agree or disagree with each of the following statements (Scotland)?

Agree/disagree statements	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	**Net: Agree**	**Net: Disagree**
Scotland has good transport connectivity with other nations of the UK	9%	39%	25%	16%	4%	7%	**48%**	**20%**
Even if transport connectivity is improved, I would be unlikely to travel between Scotland and other nations of the UK	7%	16%	22%	27%	23%	5%	**24%**	**49%**
I will be returning to my normal travel patterns to other nations of the UK after the end of Covid-19 restrictions	22%	33%	25%	8%	3%	10%	**55%**	**11%**
Better transport connectivity between Scotland and other nations of the UK would have a positive impact on my quality of life	14%	30%	36%	9%	6%	5%	**43%**	**15%**

Wales

77% of Welsh adults (Figure 8) state that it is 'very easy' or 'fairly easy' to travel between Wales and England.[4] 40% say it is 'very easy' or 'fairly easy' to travel between Wales and Scotland, while 30% find it 'very easy' or 'fairly easy' to travel between Wales and NI. Only 4% of Welsh adults consider it 'very difficult' or 'fairly difficult' to travel between Wales and England; this increases to 13% when considering travel between Wales and NI, and Wales and Scotland.

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[4] All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 1000 adults. Fieldwork was undertaken between 17th - 21st December 2020. The survey was carried out online. The figures have been weighted and are representative of all Welsh adults (aged 18+).

Figure 8: Before travel restrictions came into place, in general, how easy or difficult would you say it was to travel between Wales and each of the other nations of the UK?

Ease of travelling between nations	Very easy	Fairly easy	Fairly difficult	Very difficult	Don't know	Not applicable – I didn't generally travel between Wales and this nation	Net: Easy	Net: Difficult
Wales and England	63%	15%	2%	1%	1%	18%	**77%**	**4%**
Wales and Scotland	23%	17%	9%	3%	2%	46%	**40%**	**13%**
Wales and Northern Ireland	14%	15%	8%	5%	5%	52%	**30%**	**13%**

Figure 2 shows that 69% of Welsh adults stated that a cheaper cost of travel would motivate them to travel between Wales and other UK nations more frequently, with 47% stating they would be motivated to travel more frequently if their journey was more direct (i.e. fewer changes). 45% of Welsh adults would be motivated to travel more frequently if their journey was faster, with 27% stating that a greener journey (i.e. one that emits less carbon dioxide) would motivate them to travel to other UK nations.

35% of Welsh adults agree (35% also disagree) that Wales has good transport connectivity with other UK nations, the lowest amongst all nations (Figure 9).

Even if transport connectivity between Wales and other nations of the UK was improved, 19% of Welsh adults would be unlikely to travel to other UK nations. The majority (57%) of Welsh adults stated that they will be returning to their normal travel patterns to other UK nations after the end of Covid-19 restrictions.

49% of Welsh adults agreed that better transport connectivity between Wales and other UK nations would have a positive impact on their quality of life.

Figure 9: To what extent do you agree or disagree with each of the following statements (Wales)?

Agree/disagree statements	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know	Net: Agree	Net: Disagree
Wales has good transport connectivity with other nations of the UK	6%	29%	23%	23%	12%	7%	**35%**	**35%**
Even if transport connectivity is improved, I would be unlikely to travel between Wales and other nations of the UK	5%	13%	23%	27%	27%	5%	**19%**	**54%**
I will be returning to my normal travel patterns to other nations of the UK after the end of Covid-19 restrictions	26%	31%	23%	7%	5%	8%	**57%**	**11%**
Better transport connectivity between Wales and other nations of the UK would have a positive impact on my quality of life	19%	30%	34%	6%	6%	4%	**49%**	**12%**

Q3. In general terms, is there a need for new or improved transport links between the nations of the United Kingdom?

In 2016, ICE conducted its National Needs Assessment (NNA), which took stock of the UK's infrastructure and discussed the steps needed for a national infrastructure system that is efficient, affordable and sustainable.[5]

One of the major underpinning findings was that the UK's population is expected to increase to 75 million by 2050, and age markedly in every region. A more elderly population has important policy impacts, particularly in terms of the kind of transport services that need to be provided. However, while there is an expected ageing population nationwide, the age profile still varies significantly both geographically and between the scenarios outlined within the NNA. A scenario involving high migration and relatively slow growth in life expectancy will give rise to younger age structures, which may trigger increased demand for infrastructure services and negatively impact the service where the network is already constrained, such as in parts of England.

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[5] ICE (2016) National Needs Assessment

The substantial population growth projected in coming decades means that total travel demand will almost certainly increase even if travel per person is static or declining. Moreover, despite having the potential to ease congestion at peak commute times, remote working and greater flexibility may also mean that a larger proportion of the workforce will have more than one job, increasing the need to commute. In addition, as the population ages, the number of some peripatetic jobs like social care will also increase, driving the demand for transport services upwards.

Q5. What evidence exists to demonstrate the potential impacts of improved transport connectivity between the nations of the United Kingdom?

The Welsh Government's draft National Development Framework outlines evidence of improved transport connectivity between UK nations, notably as almost 8 million people live within 50 miles of the Wales-England border. It sets out the importance of a collaborative and co-ordinated approach between Wales, the Midlands, North West England and South West England in order to promote accessibility and inter-linkages between these areas, ensuring these areas operate as a cohesive whole, and do not compete against each other or take strategic decisions in isolation.[6]

The Welsh Infrastructure Alliance, of which ICE Wales Cymru is a member, considers that Transport for Wales' plans for delivering improved and new services across the transport network provides opportunities for improvements and enhancements in services across Wales and the borders of England. The southeast and northeast Metro proposals in particular will provide further integration opportunities at a multi-nation level.[7]

Q9. With reference to the unique geographical position of Northern Ireland, please set out how best to improve cross-border transport connectivity with other UK nations

ICE has produced a briefing on the potential for an Irish Sea crossing, outlining the technical civil engineering challenges, the feasibility of bridge and tunnel options – including road and/or rail – and a broad estimate of costs and time taken to design and build based on similar bridges and tunnels constructed internationally.[8]

Routes outside of Portpatrick to Bangor or Larne would require the longest tunnel sections ever built globally or need bridge spans and lengths at the limits of what have so far been achieved. The shortest route option could cost £12 billion for a rail-only tunnel, but could total as high as £50 billion when accounting for the 15 to 20 years it would take to design and build, and associated inflation over that period. A rail crossing is more likely to be feasible than a road crossing, while also being less carbon-intensive in its use.

ICE believes that any proposal for an Irish Sea crossing should be subject to a comprehensive and independent study. This would allow the right discussions about feasibility, cost and whole-life benefits to be had, and could independently consider whether a fixed link between Great Britain and Northern Ireland may enhance the wider infrastructure system. It is important that all projects be considered in a holistic and strategic way, and that they must address a societal need.

[6] Welsh Government (2020) Draft National Development Framework
[7] Welsh Infrastructure Alliance (2019) The Future Wellbeing of Wales and the Role of Infrastructure
[8] ICE (2020) Irish Sea Crossing Conundrum

Q11. What else can be done to support greater transport connectivity between the nations of the UK?

Strategic infrastructure planning

ICE's Enabling Better Infrastructure programme outlines a set of principles for strategic infrastructure planning.[9] While the UK has a number of these principles in place, for example an infrastructure needs assessment and a National Infrastructure Strategy, there are still improvements that can be made to these foundations.

In the case of multi-nation transport connectivity, clarity is required on governance, responsibilities between the political executive, the national legislature, permanent officials and any expert independent infrastructure commissions.

There is potential here, for example, to co-ordinate action between the National Infrastructure Commission, the outputs of the Infrastructure Commission for Scotland, the National Infrastructure Commission for Wales, and any potential Commission arising in Northern Ireland, to jointly develop a credible needs assessment grounded in the current and future performance of the assets and networks making up the transport infrastructure system. The assessment should generate a multifactor, cross-sectoral analysis of future needs and highlight where there are trade-offs between competing objectives.

Regional infrastructure strategies

In 2016, ICE argued for the creation of cross-sectoral regional infrastructure forums, bringing together government, regulators, businesses and stakeholder representatives to develop regional infrastructure strategies in England.[10] ICE's 2019 State of the Nation report on infrastructure and housing showed that support for those forums is still high, and that housing must also be central to this, ensuring any planned infrastructure supports new housebuilding.[11]

Devolution in England has focused on city-regions and on the conceptualisation of new economic geographies such as the Northern Powerhouse and Midlands Engine. As the programme of devolution progresses it is critical that the different levels of decision-making and service delivery are effectively joined-up, both with one another and with strategic developments at national and multi-national level.

There are inextricable links between housing, energy and water supply, waste services and the provision of transport. Within this, many different public and private sector organisations are responsible for infrastructure delivery. A strategic approach to their delivery can foster a better understanding of overall system need. Setting in place a framework to inform where ultimate decision-making over the implementation and delivery of a given area of infrastructure policy should be located is imperative. It is as important to establish a system of identifying infrastructure need at multiple political and economic levels, while allowing for effective community engagement.

Lessons need to be learned from previous and current deficiencies in the system, while building on the success seen recently in combined authorities and subnational transport bodies (STBs) that have brought together multiple stakeholders in developing a coherent vision with continuous engagement.

We believe that forums for developing regional infrastructure strategies should be convened and managed by subnational infrastructure bodies – these bodies would be created by extending the current remit of STBs such as England's Economic

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[9] ICE (2019) Enabling Better Infrastructure
[10] ICE (2016) State of the Nation 2016: Devolution
[11] ICE (2019) State of the Nation 2019: Connecting Infrastructure with Housing

Heartland, Transport for the North and Midlands Connect to include other economic infrastructure sectors, as well as housing.

Many existing STBs have a wide evidence base built up on future requirements for transport, energy, digital infrastructure and more. Investment has already been made in developing this evidence base, which can act as a platform for local authorities to further build on in order to determine their own infrastructure requirements and link, where appropriate, with other nations of the UK.