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ICE written submission to the National Infrastructure Commission call for evidence - connecting northern cities

Dear Lord Adonis,

Please find below the Institution of Civil Engineers' submission to the National Infrastructure Commission call for evidence on connecting northern cities. This submission is an output from the ICE's Northern Powerhouse Steering Group. This group advises on Northern Powerhouse infrastructure policy and aims to ensure that the opportunities for the entire North are realised.

The ICE is a UK-based international organisation with over 86,000 members ranging from professional civil engineers to students. It is an educational and qualifying body and has charitable status under UK law. Founded in 1818, the ICE has become recognised worldwide for its excellence as a centre of learning, as a qualifying body and as a public voice for the profession.

ICE would like to thank the National Infrastructure Commission for the chance to take part in this inquiry. We would welcome any opportunity to provide further insight at subsequent stages.

Yours sincerely,

Andrew Wescott
Head of Policy

ICE Submission to the National Infrastructure Commission call for evidence on connecting northern cities

1. To what extent are weaknesses in transport connectivity holding back northern city regions (specifically in terms of jobs, enterprise creation and growth, and housing)?

Journey times and frequency of services between Northern cities are poor and impact on freight as well as passenger services.¹ For example, rail journeys between Manchester and Leeds are 49 minutes; Sheffield to Manchester Airport takes 73 minutes; Leeds to Newcastle takes 87 minutes; and Liverpool to Manchester takes 32 minutes.² Improving these journey times is vital to unlocking growth among the Northern cities. A 20 minutes reduction in the train journey time between Manchester and Leeds would be worth £6.7 billion to the North of England economy.³

The capacity of the Northern road network is constrained with high demand from commuters, freight and leisure users. By 2040 many of these roads will suffer from severe congestion if interventions do not take place. This will further increase journey times on the roads, which will slow commuter and freight journeys. The Eddington report states that a 5 per cent reduction in travel time for all business travel on the road network in Great Britain could generate cost savings to business in the region of £2.5 billion per annum.⁴ Reducing the time it takes to travel between Northern cities by road will unlock growth and incentivise greater use of Northern ports and airports. In the Manchester city region improved transport links could deliver 4,500 jobs and £300 million GVA per annum.⁵

Poor transport connectivity across the North is preventing city regions from realising their economic potential. The North has a number of cities which perform well individually, but are unable to compete internationally as part of a wider economic area. While Northern cities can be viewed as individually successful, their ability to share knowledge, realise economic growth and regenerate communities is hampered by lengthy and infrequent journeys from one city to another. In addition, this is a disincentive for people to commute from one major city to another and realise job opportunities elsewhere.

By connecting cities and towns, transport investment facilitates the interchange of goods, services, knowledge and skills, and builds 'agglomeration economies' around areas of commercial specialisation⁶. Businesses want connectivity, not based just on commuter routes, but to include;

¹ Higgins (2014) Rebalancing Britain: from HS2 towards a national transport strategy https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374709/Rebalancing_Britain_-_From_HS2_towards_a_national_transport_strategy.pdf

² HM Government/ Transport for the North (Mar 2015) The Northern Powerhouse : One Agenda, One Economy, One North. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427339/the-northern-powerhouse-tagged.pdf

³ Transport for Greater Manchester 2040 Vision <http://www.tfgm.com/2040/Documents/14-1882%20GM%20Transport%20Vision%202040.pdf>

⁴ Eddington (2005) <http://webarchive.nationalarchives.gov.uk/20090104005813/http://www.dft.gov.uk/162259/187604/206711/volume1.pdf>
<http://www.tfgm.com/ltp3/Documents/GMGRP-Transport-Strategy.pdf>

⁶ Cox E and Raikes L (2015) Transport for the North: A blueprint for devolving and integrating transport powers in England, IPPR North. <http://www.ippr.org/publications/transport-for-the-north-a-blueprint-for-devolving-and-integrating-transport-powers-in-england>

- asset to asset
- city to city
- city to transport node (airport/station/port)
- city to rural area

Northern businesses already have clear comparative advantages in sectors such as knowledge-based industries, advanced manufacturing, bio health, renewable energy industries, and culture and tourism. It is in such areas that the North has consistently increased its share of UK exports over the past decade. With a growing workforce and increased investment in innovation and skills, the North could play a vital part in boosting the nation's poor productivity levels.⁷

The benefits of greater investment in infrastructure and transport connectivity in the North are clear:

- HM Treasury analysis shows that realising the ambition to rebalance the UK economy would be worth an additional £56 billion in nominal terms to the northern economy, or £44 billion in real terms, equal to £1,600 per individual in the North.
- The Northern Way estimated that improved Trans Pennine connectivity between Sheffield-Leeds-Manchester could create £6.2 billion increase in GVA.
- The Highways England Delivery Plan demonstrates that if 112 individual schemes were delivered nationally between 2015 and 2020, this would generate £4 in long term economic benefits for every £1 invested, illustrating how relieving congestion aids productivity.

It is also important to recognise the value of outer city areas in economic regeneration, job creation and house building. Cities need to be better connected to science parks, universities and manufacturing areas to enable the optimisation of knowledge sharing and skills.

2. What cost-effective infrastructure investments in city-to-city connectivity could address these weaknesses? We are interested in all modes of transport.

Our ambition should be to improve connectivity between assets, not just between and within cities. Assets include the regions ports and airports, science parks, universities and population centres, whether urban or rural. This approach to connectivity better articulates what business, commuters and consumers want from improved connectivity.

ICE believes that a range of investments – from small-scale interventions to transformational projects – will address asset connectivity weaknesses in the North. While capital investment is important, 89% of respondents to the City Growth Infrastructure Survey highlighted maintenance of current infrastructure as a key future pressures in their cities.⁸ However, maintenance is often ignored when investment decisions are being made. To resolve this the appraisal approach for determining interventions requires attention. While some small-scale interventions may not qualify

⁷ Cox E and Raikes L (2015) Rhetoric to reality: a business agenda for the northern powerhouse, IPPR North. <http://www.ippr.org/publications/rhetoric-to-reality-a-business-agenda-for-the-northernpowerhouse>

⁸ Cities and Growth Commission (2014) Connected Cities: The Link to Growth <https://www.thersa.org/discover/publications-and-articles/reports/connected-cities--the-link-to-growth/>

as cost-effective in their own right, if they are viewed as part of a wider programme then benefits can be greater. The Department for Transport's current appraisal approach is based substantively on the aggregate time saving to users of a transport investment. This potentially ignores the wider economic benefits of transport schemes. The investment priorities of the North should be determined by appraisal techniques which seek to value the real economic impact of transport networks.

Transport for the North (TfN) has already agreed a series of vision statements setting out what is needed to close the productivity gap and achieve the aims of the Northern Powerhouse. These are:

- To build a single distribution freight network that looks across modal boundaries.
- To ensure the North's airports attract the highest possible level of international connectivity.
- Radically improved rail journey times and frequencies between major cities.
- A core free-flow strategic road network with 'mile a minute' journeys on expressways and motorways in the North.
- Improved east-west major road links to ensure better and more reliable journey times.
- An integrated and single, smart ticketing and fares solution across the North.

The ICE endorses these vision statements. It is essential to support Northern Combined and Local Authorities to develop Local Growth Deal packages of work to "plug into" pan-Northern priorities, in order to maximise the benefits from the transformative infrastructure required across the North.

Given the recent and unfortunate flooding events in the North of England, a greater emphasis should be placed on the resilience of Northern transport networks. Throughout December and January there has been severe disruption to goods and people moving around the North and in accessing other parts of the UK. Parts of the West Coast Mainline to Glasgow will be closed for the next few months and flooding has also closed the M62, A1, A19, M1 as well as key rail lines. December 2015 was the wettest on record and since 1990 we have experienced six of the ten wettest years on record, so this appears to be a trend in our weather patterns. Cost-effective investments in transport should consider the wider interdependent nature of our infrastructure networks so that greater resilience is built into the overall system.

3. Which city-to-city corridor(s) should be the priority for early phases of investment?

We challenge the premise of this question and consider that investment should focus on an entire network approach. A process which focuses more centrally on the economy, through economic geographies and corridors, will prioritise both revenues and output potential.⁹ As set out in our response to Q.2, we should consider asset-to-asset connectivity.

City regions should continue to identify and develop city-level transport schemes in longer-term strategies that extend significantly beyond the 2021 horizons of Strategic Economic Plans. The TfN

⁹ Volterra Partners (2014) Investing in City Regions: the case for long-term investment in transport <http://volterra.co.uk/wp-content/uploads/2014/11/Volterra-Investing-in-City-Regions-A4-report-PDF.pdf>

vision statements referenced in Q2 set out a range of priorities for investment. The priorities for investment should be those schemes that address the current and future 'gaps' in achieving these vision statements. Specifically these include:

- W12 gauge cleared and electrified routes between the ports of Liverpool, Humber, Tees and Tyne to offer real opportunities for more rail-borne freight.
- Transformed surface rail and road access from across the North to Manchester Airport as the international gateway with the most potential to rapidly expand with significant available runway capacity.
- Multi-modal access improvements to the other international airports across the North to offer real choice, including rail access to Leeds Bradford.
- Schemes to overcome key barriers to rail journey time reduction between Liverpool, Manchester, Leeds, Sheffield and Newcastle, focusing on modest short term wins but minimal abortive costs whilst more aspirational schemes are developed.
- Completion of the Smart motorway programme between the North's city regions.
- Improvements to the strategic road network to achieve the 'mile per minute' objective between the North's key assets, such as the A19, A63, A180 and the M56.
- Dualling of the A66 from the M6 across to the international gateway at Teesport to provide a high quality alternative to the M62 road corridor for businesses and freight.
- A fully inclusive integrated ticketing solution for public transport across the North.

HS2 and TransNorth programmes are critical to the economic transformation of the North with the potential to close the productivity gap between the North and South, which HM Treasury has estimated would equate to more than £40 billion additional GVA by 2030. In order to drive the Northern Powerhouse, priority for early phases of investment need to be considered within a comprehensive and phased strategy for transport infrastructure. High speed rail provides a transformational approach to transport connectivity. Complementary projects, which optimise the benefits of this investment, should qualify for early delivery. For example, electrification of the TransPennine line and increasing capacity on the East Coast Main Line would deliver long term benefits both as stand-alone projects, and in the context of a new high speed rail network.

There are a broad set of interventions that each Combined Authority should implement to address city-to-city connectivity.

- Improving and maintaining assets: metro and local rail fleet and infrastructure renewals, major road maintenance and renewals of ageing structures;
- Improving local connectivity to the priority areas for jobs growth: improving accessibility between communities and key employment growth areas, and improving links to/from high speed rail hubs and international gateways, with local rail/metro/quality bus capacity and frequency improvements, and line extensions;
- Making the connections work and improving the journey experience: policy and programmes to improve integration and deliver door-to-door local sustainable transport.

London's transport network illustrates a way in which intra-city connectivity can be improved and generate a more integrated system. The following interventions can bring relatively quick and low cost benefits:

- Smart-ticketing
- Simpler and more readily understandable fare structures
- Timetable integration.

4. What are the key international connectivity needs likely to be in the next 20-30 years in the north of England (with a focus on ports and airports)? What is the most effective way to meet these needs, and what constraints on delivery are anticipated?

In order to grow as an economy, achieve success and realise its potential the Northern Powerhouse needs access to Europe, particularly the EU, as well as the fastest growing economies in China, India and Brazil. Trade is one vital indicator of the North's connectivity. The North has especially good reason to focus on freight, given its substantial port infrastructure – the ports of Tyne, Tees, Liverpool, Hull, and Grimsby and Immingham in particular – its manufacturing base and its rapidly-growing wholesale and retail sector.¹⁰ North East ports, specifically Teesport rail terminal, currently handles approximately 3% of container throughput via connections to Felixstowe, Southampton and Scotland. The target is to see this grow to 20% and Teesport is already looking at new connections to the Midlands to commence in 2016 to enable this.

- In 2014, the North exported goods worth £55.2 billion in 2014 and imported goods worth £54.2 billion. This positive balance of trade is entirely due to the North East, which is the only English region that exported more than it imported.
- The EU is the North's largest trading partner, accounting for more than half of all imports (56.0 per cent) and exports (52.2 per cent). Asia and Oceania accounted for just over a quarter of imports (25.8 per cent), while North America was also a significant export market (15.9 per cent).
- The North handles about a third of the UK's port business. Together the region's major ports imported 114 million tons (36.0 per cent of the UK total) and exported 55 million tons (31.8 per cent of the UK total).¹¹

The delivery of the Liverpool SUPERPORT could open up opportunities to the North. Improved connectivity and capacity for freight on our road and rail networks opens up access to the Port from across the whole of the UK. This has the potential to save on national freight miles, through enabling logistics that are closer to their end markets. It will also help grow the local economy through job creation. It will also reduce congestion on roads, particularly those that carry freight from the South

¹⁰ Cox E and Raikes L (2015) Transport for the North: A blueprint for devolving and integrating transport powers in England, IPPR North. <http://www.ippr.org/publications/transport-for-the-north-a-blueprint-for-devolving-and-integrating-transport-powers-in-england>

¹¹ Cox E and Raikes L (2015) *Rhetoric to reality: a business agenda for the northern powerhouse*, IPPR North. <http://www.ippr.org/publications/rhetoric-to-reality-a-business-agenda-for-the-northern-powerhouse>

to the North. In addition to this project there are a number of Northern port expansion plans¹² – in Hull, Tyne and Teesport – which will enhance the international competitiveness of the Northern economy.

International connectivity is not just about the capacity of airports and ports but about the connections to those assets. There is little benefit in having a modern international airport if ongoing land transport links are poor. Internationally-focused domestic businesses and foreign investors, will generally choose to locate where international connections are strong, weighing up the relative accessibility for freight imports and exports, and their workforce.

The South East aviation capacity issue requires immediate attention to help improve the UK's connectivity to the fastest growing economies. In tandem we need to improve connectivity between the North and the South East and also improve land surface access between Northern airports and Northern cities. There should be an increase in slots at Heathrow for interlinking business passengers. Airports in the region struggle to compete for landing slots, which is a potential barrier to international accessibility.

5. What form of governance would most effectively deliver transformative infrastructure in the north, how should this be funded and by whom, including appropriate local contributions?

Major infrastructure programmes and projects require time to deliver. One of the greatest challenges to their delivery is slow political decision making. This has been evident in the case of South East aviation capacity and High Speed rail. The National Infrastructure Commission has a key role to play in improving the evidence base for major infrastructure programmes and projects, which should in turn improve the decision making process. Improving the evidence base, early engagement with communities and building political consensus (both national and local) will improve our ability to deliver these transformational projects. This national level strategic approach will provide direction to bodies such as TfN as they set out their own plans.

The governance model should reflect the overall aims and objectives of TfN and the emerging Northern Transport Strategy, but crucially must ensure that the needs and interests of all partner city regions are fully met. This is vital if the benefits of transformational infrastructure are to be truly pan-Northern.

Through the Northern Transport Strategy, TfN should seek to determine the transport priorities that help meet the outputs set out in its vision statements and put forward a costed programme of works to deliver the required improvements to achieve the vision statements.

As with rail and road funding settlements, TfN and the Government should then agree this programme and the investment required over a long term period, such as a five year rolling programme basis. This will enable TfN to become joint Client (with the Government) for the delivery

¹² HM Government/ Transport for the North (Mar 2015) The Northern Powerhouse : One Agenda, One Economy, One North. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427339/the-northern-powerhouse-tagged.pdf

of this programme, as with Rail North. The Client would commission delivery agencies, including Highways England, Network Rail, Combined Authorities and Local Authorities, to deliver the programme through a series of agreements that ensure efficiencies and promptness.

ICE considers that this model makes best use of the capabilities of each of the organisations involved from the outset, and does not require significant legislative or regulatory change. It may not be a final governance model, but it is one that can get crucial early momentum in delivering the transport infrastructure required to connect Northern cities effectively and reliably.

TfN should have the resources to meet its current and future responsibilities. Strategic transport investment is generally allocated on a scheme-by-scheme basis, and is subject to scheme development, appraisal by DfT officials, and political decision-making. By 2025 a significant proportion of transport capital spending should be devolved to TfN. TfN would then be able to undertake its own appraisal and decision-making processes and develop its own high-level output specification. This would also provide TfN with the opportunity to leverage its capital budget to gain further investment and utilise mechanisms such as tax increment finance schemes.

ICE's [Transport for Growth](#) report outlines our recommendations on the devolution of transport powers and funding from central Government to sub-national structures.¹³

¹³ ICE (2014) Transport for Growth <https://www.ice.org.uk/getattachment/b56914d6-7efb-4b0e-898a-b5ef0041ea8f/attachment.aspx>